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Providing Additionality in Municipalities

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1. Introduction – research scope and objectives

More than seven years have passed since Hungary‟s accession to the European Union; this means two programming periods in terms of the use of EU funds. Even though the amount of resources used up in the 2004-2006 period is only a fraction of the amount available in the present period (2007-2013), for Hungary, the previous programming period had a determinant significance. On one hand, the three-year learning period may be considered as knowledge transfer; on the other hand, numerous projects were implemented using the resources granted.

A series of theoretical models have been set up for the assessment of the use of funds – primarily encouraged by the European Commission –, which measure or could measure the benefit of funds, and accordingly, the reduction of development disparities or, on the contrary, further lagging-behind both in an *ex ante* and an *ex post* sense. (White 1992), (Nagy 2008), (Kengyel 2003), (Dall'erba 2005), (Santos 2008), (Tatar 2010) Going far beyond GDP and unemployment rate indicators used in practice, these models have verified – not only theoretically but demonstrating it on particular cases of countries – that despite the payment of assistance, development disparities between regions of newly acceded countries do not decrease but increase. (Trón 2008), (Valentinyi 1995)

Most of the applied models use some macrolevel approach. Methods are rarely set up bottom to top since – due to the implementation programme structure – project-level analysis is rather complex. At the same time, a microlevel approach does not necessarily directly lead to the indicators – in use for decades – which have served as basis for assessing the development level of regions; and thus, play a key role in allocating the resources.

One of the possible ways to reduce development differences for member states that have joined the European Union in or after 2004 – such as Hungary – is to efficiently exploit the full scope of regional policy instruments. If we would like to foster economic development, a careful planning of programmes is not sufficient; the same carefulness is needed in the course of implementation and evaluation of the results. In the micro approach, this implies that beside a noble project objective and intention to provide assistance, potential beneficiaries shall also possess adequate resources.

The focus of my research is laid on the relationship between the use of EU funds and the principle of additionality. In my thesis, I apply a multi-aspect theoretical approach – as overview – as well as empirical methods to examine the relationships which can be drawn up between the use of funds, the own contribution needed for implementation, borrowing and indebtedness.

In this way, the thesis is of a multi-disciplinary nature as various ideas from the fields of regional policy, economic policy and accounting are discussed, the necessary result of which then is that not all three approaches can be considered complete on their own, separately. When writing the thesis, my objective was to make the content within each chapter coherent and set up in a way easy to follow.

European Union funds are incomprehensible on their own. Firstly, the practice applied by each member is different; secondly, the range of beneficiaries is a determinant factor in respect of the use of funds. In line with the additionality principle, an active contribution at the local level – both in terms of the planning processes and in the financial sense – is a basic precondition for a given area or applicant to become entitled to funding. Accordingly, additionality shall be applied both at the governmental and at the local level, the two of which are connected by the local municipalities the paper focuses on.

However, to study additionality, I had to determine a microlevel analytical unit which can be well interpreted from the perspective of both the theoretical and the practical part of the research. My primary objective was to make sure that results are adequately substantiated in an empirical way, stably in the statistical sense. To achieve this, on one hand, I sought to select analytical units which have brought about much criticism in literature; on the other hand, in relation to which, reliable accounting data – already confirmed by others – was available. Since in respect of additionality, municipalities are regarded as some kind of bridge between local and government level, I decided to choose local municipalities in Hungary.

I regard the extensive theoretical introduction of the paper primarily not as the presentation of what have led me to my hypotheses but as an integral part of my independent research – principally aimed at processing the literature. My objective was to get to the formulation of hypotheses through a logical deduction while maintaining the multidisciplinary nature of the thesis and clearly separating the content of each chapter.

One of the key directions of theoretical grounding is constituted by the way funds are used. To get to know this, I consider a deeper, comprehensive theoretical introduction necessary, firstly, in order to present the set of instruments applied in regional policy, secondly, to demonstrate the measurability of the impact of funds, and thirdly, to draw up the funding system established in Hungary. (Chapter 2)

The comprehensive – while descriptive – introduction of the domestic funding system (Chapter 3) aims at two purposes: on one hand, it demonstrates the organisational and financial relations which lead us to the logical relationships between the impacts caused by the funds, and on the other hand, it lays the ground for the dilemmas regarding the management of the payment of funds both from the donor‟s and the recipient‟s perspective.

The picture drawn up in the chapter dealing with municipalities (Chapter 4) is far from being complete: although, a discussion on the rather diverse theory of fiscal federalism and another one on the issue of financial autonomy and efficiency would fit the course of thoughts, I refrain from going into details in these respects because my approach to analysing the impact of funds is not starting from the centralisation-decentralisation perspective but I focus on the provision of additionality. In line with the above, also when discussing municipalities, it is difficult to keep the balance between each level of local governance since the issue reaches far beyond the scope of my paper, and would divert the theoretical grounding from voluntary organisations to the concept of regional self-governance and regional spatial structure alternatives, which might be a good theoretical topic for studying – regarding both its domestic and international literature –; however, stands rather far from the planned empirical elements of my research.

In the case of municipalities, the application of the additionality principle can only be interpreted knowing the context of the legal and economic environment. From the extensive literature analysing municipal economies from multiple perspectives, I have highlighted those which – at least tangentially – discuss doubts related to additionality, and the factors laying behind the process of resorting to debt. Although there has been much criticism raised in respect of municipal financing (Pitti 2005), (Kassó 2006a), (Romhányi 2007), from these, I put emphasise on the ones that can be connected to the empirical part of my research, and interpreted in this context. In the thesis, I briefly

analyse municipal economies and resource structure including borrowing as a possible – though nowadays disputed – way of meeting the additionality requirement.

Presenting a relevant international overview, I review the burdens laid by the requirement of additionality on economic actors in other member states.

The summary presentation of all hypotheses in one package (Chapter 5) is primarily required by the fact that – based on the theoretical literature – they are related to several scientific disciplines and closely related to each other at the same time; thus, discussing them separately – both in the theoretical and in the empirical sense – would lead to unnecessary repetitions and redundancy in the paper.

The multivariate data analysis exercise I did at an earlier stage of my doctoral studies was of great help for the theoretical grounding of the research as well as when carrying out the empirical examinations (Chapter 6); since when I prepared for it, already in 2006, I got to know the data bases the connection of which can serve as a basis for empirical analysis. At that time, I regarded the files containing municipal reports – rather strongly criticised by several experts (Kopányi, Vigvári 2003), (Kassó 2006b), (Vigvári 2009b) – as an island yet undiscovered which however has treasures on it. Even though my initial attempts have proved to be useful also in respect of the present research, lacking the theoretical background, they were not more than mere exploratory experiments; therefore, I turned my research method into an inductive → deductive → inductive direction.

I hardly found examples similar to my research in the international literature – most probably due to the disparities in the use of EU funds, local governance, the regulations on borrowing and the mix of these. Nevertheless, at the theoretical introduction of each chapter, I make an attempt to draw up the international experience even if it only tangentially relates to my topic. The time frame to be studied in the empirical research was set out as the period of the National Development Plan – i.e. the 2004-2006 programming period. This is primarily due to the fact that statistical data and reports regarding this programming period are already available.

2. Key elements and effects of regional policy

2.1. Regional policy in the European Union

2.1.1. Historical overview

The initial period of European regional policy goes back to the Treaty of Rome (1957), the Preamble of which indicates that existing differences between the various regions and the backwardness of less favoured regions should be reduced,[1] and also that measures should be taken in order to eliminate harmful effects of integration. Differences in development namely create obstacles to the free movement of goods, services, capital and labour and thus the internal market is restricted.

Economic conditions in each region had varied due to European territorial conditions and to the diverse history and culture of the countries; however, the demand for regional policy[2] in member states of the European Economic Community only started to rise between 1975 and 1988 as before that, member states had been situated at about the same development level and had had reasonably large cohesion capacities. As of the „70s, role of the regional assistance system aimed at economic and social cohesion of the Community has increased. (Illés 2002) The realisation of the growth potential of less developed regions and of those undergoing restructuring is a common interest of member states as these regions could become the basis of faster growth of European economy. (Kengyel 2007a)

The European Regional Development Fund was established in 1975, following the accession of Denmark, Ireland and the United Kingdom in 1973, with the purpose of the reallocation of resources from richer to poorer regions especially through the realisation of infrastructural investments. The first decade of the programme was used for the determination of national quotas while principles of regional policy were enforced by member states within the countries in line with the concept of subsidiarity. (Kende, Szűcs 2002) In 1979, the Council of the European Communities established the system of Community financing programmes and granted assistance for the development of

[1] However, common regional policy was not explicitly specified in the Treaty of Rome. (Kende, Szűcs 2002)

[2] Regional policy was already raised to the institutional level earlier, when an autonomous directorate general was established for its management in 1967.

industrial areas in decline and cross-border regions in the framework of *programme contracts* in addition to the national quotas.

In respect of the regulatory framework, a step forward was made in 1984 when eligibility criteria for Community funding were determined, the preparation of development programmes was made a general obligation and the transparency of programmes was enhanced, from the national quotas. (Szegvári 2002)

2.1.2. Regional policy reforms

As a result of enlargement and the accession of Mediterranean states, *an excessive geographical concentration of drives* had started, whereas the growth of peripheries and agricultural population, the increase of the unemployment ratio, and the doubling number of people living in underdeveloped areas were of concern for developed countries (Szörényiné Kukorelli 2000), and also the difference in the rate of welfare got strongly polarised as the backwardness of economic performance was associated by underdeveloped areas. Economic and social disparities between regions were indicated by the ability to generate income and by the divergence of opportunities for the employment of workforce, which made it necessary to establish an autonomous territorial development policy. (Szegvári 2002)

Economic integration is not possible in and of itself; the negative phenomena of inequalities between each area shall be mitigated and handled. Inequalities can be handled through the provision of active tools that allow for the spread of welfare benefits, considering that the advantages of integration do not appear at the same extent in all regions; thus, in the absence of active tools *development further continues to concentrate in the central regions of the EU*. (Kengyel 2003)

In the early phases of the expansion of European integration – as of the 1970s when, with Ireland, the first areas of a much lower than average level of development appeared within the integration – experience indicated that convergence worked automatically: in the case of the EU-15 it seemed that the economic development of the various regions – at least within the integration framework – was indeed heading to some common equilibrium (Beugelsdijk, Eijffinger 2005); (Churski 2008).

A milestone and a reform step in the development of regional policy is indicated by the Single European Act (1986) setting out the objective of reducing disparities between the various regions and the backwardness of the least-favoured regions, and identified regional policy as an autonomous policy. The coordination of economic policies of member states on one hand and the establishment of the structural funds on the other hand were indicated as its tools. According the Single European Act, *the European Regional Development Fund is intended to help redress the principal regional imbalances in the Community through participating in the development and structural adjustment of regions whose development is lagging behind and in the conversion of declining industrial regions*. (Single European Act, Article 130c) As part of the reforming of regional policy, a declared objective was the application of tools which helped to obtain actual economic effects – through the implementation of long-term programmes – and to create partnerships among regions and member states.

As a result of the reform of 1988, the importance of regional policy was increased, available financial resources raised, and priority was put on the principles of programming, additionality, decentralisation and partnership instead of project financing. (Szegvári 2002) In this way, concentrated, coordinated and programmed development and assistance to the least-favoured regions could be assured, which was further enhanced by the fact that – in order to enable easy planning – *programming periods*[3] (budgetary planning periods) were determined, in which development priorities, the amount of available resources and the means of using them were indicated. The European Social Fund was also placed among the instruments of regional policy considering that the assistance provided for labour development affect regional development differences. (Kengyel 2007a)

The second major milestone in the development of regional policy is constituted by the Maastricht Treaty (1992) the Preamble of which sets out that economic and social progress shall be promoted within the context of reinforced cohesion and environmental protection, and determines the objective of strengthening economic and social cohesion – thereby paving the way for the establishment of the Cohesion Fund. (Kende, Szűcs 2002)

The programme titled *Agenda 2000,* which was adopted in 1999 when preparations for the 2000-2006 programming period and at the same time for the accession talks with

[3] 1988-1993; 1994-1999; 2000-2006; 2007-2013

East-Central European countries were made, is considered the third reform of regional policy. When it was drawn up, net contributor and net recipient member states expressed different positions. While net contributor member states sought the stabilisation of expenses, net recipients would have preferred to determine the budgetary framework based on the amount of support provided in the year with the highest level of assistance (1999). The largest result of *Agenda 2000* lies in reregulating the principles of regional policy and the operation of the structural funds and the Cohesion Fund, and in the establishment of the ISPA and SAPARD pre-accession instruments. In order to promote the principle of concentration, the number of objectives to be supported was reduced to three, and the institution of transitional assistance for regions losing their entitlement to assistance – because of the Eastern enlargement of the European Union – was introduced. (Iván 2001) Beyond the above, the budget for the 2000-2006 programming period was determined.

On one hand, the objectives of economic and social cohesion are set out in the document; and on the other hand, the number of types of areas entitled to assistance have been reduced in line with the principle of concentration,[4] and member states were required to harmonise national assistance policy directives with Community regional policy aspects, taking the principle of additionality into account.

In contrast with the time before the 2000-2006 programming period, when member states had regarded sectoral aspects when determining development programmes and managing implementation and had applied centralised distribution policies, and regional authorities had played a marginal role, opposite trends emerged in the period between 2000 and 2006. (Horváth 2001) In order to increase global productivity and to reduce regional disparities, the key objectives of subsidiarity and the use of the resources owned by the regions were already set out when preparations for the 2000-2006 programming period were made.

With the accession of East-Central European countries, a significant proportion of welfare transfers were shifted to the Eastern member states; in this way, the Eastern enlargement brought about another major change in regional policy; *it is likely that the greatest extent*

[4] Only three out of the six objectives have remained. For the purposes of the present paper, I omit to present the three objectives that were dropped out since that time Hungary was not a member of the European Union. See (Szörényiné Kukorelli 2000).

that the concept of cohesion prevails to is in the period between 2007 and 2013 (Marján 2009); however, the effects are yet to be assessed. The realisation of the economic potential in the less developed regions of new member states is a major challenge for the European Union and also for regional policy. (Kengyel 2008)

With the Eastern enlargement of the European Union, income disparity between the richest and the poorest regions increased from a value of 2.6 prior to accession to 4.4, which indicator further grew to 5.3 with the accession of Romania and Bulgaria in 2007. After the Eastern enlargement, demand has yet grown for the reduction of substantial regional level development differences and for creating the conditions for accelerated economic growth. (Kengyel 2007a) (Musyck and Reid, 2007)

The 2007-2013 programming period is specific because now the factors influencing competitiveness should be shaped in a way so that beside social and economic restructuring in the less developed regions, their ability to attract capital is increased and entrepreneurship boosted; thus, possibilities for the realisation of the long-term development potential and for the faster start of economic development are provided. (Barca 2009)

Regional policy is the most complex of all Community policies since it actively contributes to numerous other policy fields, and its development can be regarded as parallel to the deepening of European integration (Marján 2009); however, the number of development perspectives is limited. Financial solidarity may remain or become neglected; yet, member states of the European Union show no willingness to raise EU financing, which raises several questions – including the shift of assistance from the level of regions to that of countries – in the field of regional policy. (Szemlér 2007)

2.1.3. Key principles and objectives of EU regional policy

A general criterion regarding regional assistance is that it may only be provided in less favoured areas, in which regional development is a key objective, primarily for the realisation of investments and for the creation of job opportunities. The principles of the use of funds constitute a mutually interrelated system.

Subsidiarity and transparency are principles related to the operation of the European Union as a whole. *Transparency* requires that the programming process is transparent, the decision aspects clear, and – in a restricted sense – that funds can be controlled. (Kengyel 2007a)

According to the principle of *subsidiarity,* the European Union provides assistance through the tools of Community structural policy, i.e. beneficiaries have autonomy and responsibility. Funds shall be used for the achievement of objectives which cannot be met through own resources; in addition, assistance is of a complementary nature, i.e. it does not substitute national, regional or local developments. (Szegvári 2002)

Within the terms of the Maastricht Treaty (1992), the Community takes action *only if and in so far as the objectives of the proposed action cannot be sufficiently achieved by the member states*.

The principle of subsidiarity is in close connection with the principle of *decentralisation*, according to which, the strengthening of instruments available for local and territorial decision makers shall be sought; nonetheless, in the case of areas where implementation is not sufficiently efficient at local or regional level, an integration function arises. The adequate extent of the decentralisation of competences[5] is the level (local, regional, national) at which autonomy – either directly or through elected representatives – is yet efficiently achieved.

Partnership is related to the principles of both subsidiarity and decentralisation; it refers to cooperation between participants in the drawing-up, implementation and control of programmes, i.e. it demonstrates that territorial policy is of a multi-actor nature, issues of territorial development should not be considered as a national task exclusively, and that only those of the territorial, microregional and regional development objectives that are established taking the principle of partnership into account and elaborated jointly by the stakeholders should be supported. (Gyulai 2000) In this way, ensuring the principles of *publicity* and *participation* is necessarily required by partnership since on one hand, a continuous dialogue between the local-regional and the central level is needed for making decisions on territorial development; and on the other hand, a broader social support can

[5] meaning making and implementing decisions

be achieved through enhanced publicity. (Szegvári 2002), (Pálné Kovács 2004) in (Horváth et al. 2004)

Beside the above basic principles, requirements related to procedures and financing also play a dominant role in the shaping of assistance programmes, the concepts related to which are strongly connected to the basic principles. *Coordination* and *cooperation* are determinant for the management of public administration, the efficiency of which has a significant influence on the activity of actors concerned, either at local, regional or national level, in addition, it affects the allocation of resources and whether territorial development functions in a concerted way with other policies. In line with the requirements of *complexity* and *planning*, regional policy is incorporated in state instruments; however, to attain the success of these, it should be ensured that territorial aspects are taken into account when making sectoral decisions and in economic policy, which in turn requires *regional objectives incorporated in economic and financial regulations*. Planning contributes to the possibility of fine-tuning objectives and tools through the assessment of results, looking at it as some kind of iteration, in order to make the impacts of assistance increasable and be in line with the development programme and goals of the area. The criterion of *compliance with the programme* requires the investment to be included in or compliant with the programme of the area, since – in accordance with the requirements of complexity and planning – only those development programmes should get assistance, which produce a complex effect on the development of an area; accordingly, instead of financing single projects, focus is laid on objectives and priorities that are for the longer run and have a better enhancing effect on development. In the course of drawing up the programmes, together with the description of the current situation, the member states determine objectives to be achieved, and plan the method and timeframe for financing, implementation and evaluation; i.e. programming is based on a multiannual cooperation between each member state and the European Union. Essential points of integration such as plannability, budgetary balance, need and programme financing are expressed in regional programming. (Fáyné Péter 2002)

In accordance with the *requirement of concentration and decentralisation of the use of funds*, in line with the principle of subsidiarity, objectives shall primarily be determined and related resources be distributed at the local level; at the same time, it is reasonable to

concentrate resources along jointly developed priorities and on the regions that are the most in need in order to achieve efficiency. The *requirement of multichannel financing* sets out that Community funds shall be provided in a concerted way; however, payments may be made through several channels simultaneously. Accordingly, national, regional and local resources – including municipal assets –as well as private capital and business loans may be drawn upon at the same time within a member state, while the European Union may provide the Community assistance from several funds simultaneously. The requirement of *additionality* is to be interpreted in line with subsidiarity: through the involvement of local resources – in Hungary through meeting the requirement of self contribution– it can be ensured that the contribution principle is met, i.e. assistance serves as complement to the realisation of a project or development programme. In this way, support is provided by the government, whereas local and regional territorial development programmes are not exclusively financed from the central budget. *If assistance is based on the involvement of local resources, it can be ensured that investments are substantiated and in line with local conditions and needs.* Regional policy of the European Union may be interpreted as a joint result of Community and national development activities, for which reason, additionality is considered as a high priority principle. (Szegvári 2002), (Udvari 2010) On the other hand, additionality may be regarded as the role of a catalyst: in this sense, Community assistance complements the share of the member state and thereby reduces the time needed for development. (Kende, Szűcs 2002)

Basic principles and requirements regarding procedures and financing interact with each other; however, their relations vary in each member state – according to the country‟s economic conditions. The following figure presents a possible interpretation of the relations among the above principles in Hungary.

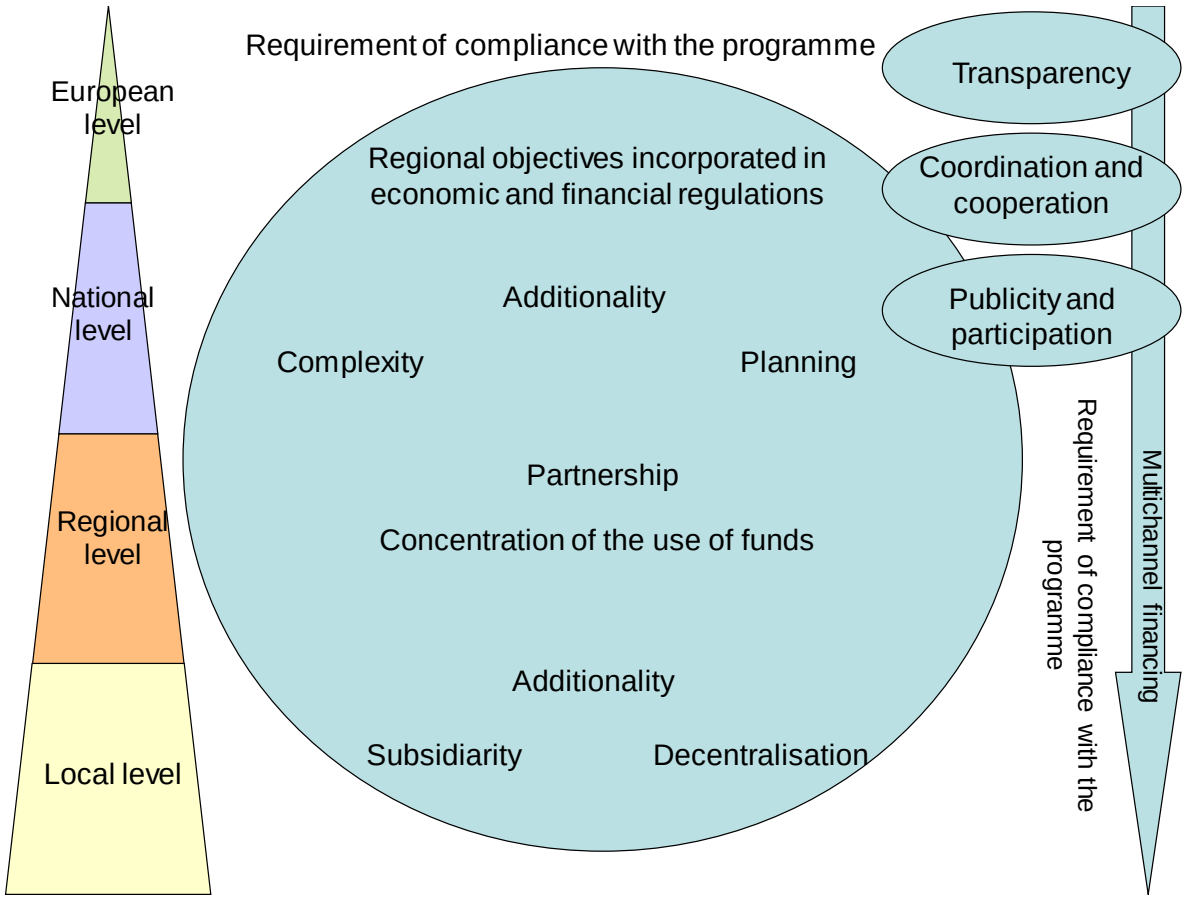

Figure 1. on the relations among the regional policy principles in Hungary (figure by the Author)

Disparities in regional development do not only prevail between countries but also within each country; therefore, the goal is to reduce differences between areas both between and within member states.

Regional policy deals with the realisation of the local development potential, and with investments relevant for the economic conditions – also including infrastructural development.[6] Its main objective is to enhance regional competitiveness, which is based on regional innovation on one hand and on regional convergence on the other. It aims at the mitigation of regional disparities, promoting the catching-up of areas facing structural problems and support and coordination for national policies (Szegvári 2002), which follows from the Single European Act on one hand and from the Maastricht Treaty on the

[6] Although from the paper"s perspective, regional policy is the most relevant of all Community policies, considering its close connections with the European Social Fund, the European social policy shall also be mentioned here. The principal objectives of social policy are the fight against unemployment, the enhancement of professional skills, and the creation of jobs and equal opportunities. It is closely related to regional policy in order to realise the development potential.

other. For the realisation of the benefits of the single market, it is essential that the competitiveness of areas facing *difficulties with structural adjustment* are consciously improved as the reduction of development differences cannot be exclusively left to market forces. (Kengyel 2008)

In order to boost economic development, *infrastructure shall be developed, the qualification level of the labour force shall be raised and entrepreneurship encouraged*. (Kengyel 2003) Structural policy endeavours to the concerted and efficient implementation of objectives in less developed areas (Szegvári 2002); accordingly, its goal is to develop the infrastructure of less developed regions, diversify local economy, raise the qualification level of the labour force and promote the productivity in various economic sectors.

With the accession of East-Central European countries, regional disparities necessarily rise and the entitlement to assistance of previously recipient countries reduces, decreasing the resources that can be used by these. As a result of this, social and economic cohesion is listed as a No 1 priority in the EU‟s document called Agenda 2000. (Horváth 2001) Regional policy objectives are presented in Annex 1 of the present paper.

2.2. Instruments of regional policy

Regional policy has a diverse set of instruments. Considering the limitations to the scope of my paper, firstly, I would like to highlight only those instruments and periods which are determinant from the paper‟s perspective.

The European Union expects the enhancement of economic and social cohesion from the funds. Assistance is concentrated on three major areas in all programming periods: the development of human resources, assistance provided for enterprises, and infrastructural development. As a result of these, *unemployment is reduced, income raised and living conditions improved*; i.e. the difference in development level is decreased[7]. The improvement of qualification levels has both a direct and an indirect effect on enterprises: on one hand, the education market boosts; on the other hand, competitiveness is improved and unemployment reduced through the more qualified labour force. Also, the effects of

[7] This statement is disputed by several authors, as it is described in details in the next section of my paper.

infrastructural development occur in both a direct and an indirect way: firstly it affects local entrepreneurs; secondly, it contributes to the decrease of production costs, and eliminates some factors restricting production. On the whole, infrastructural investments improve economic conditions, which raises the attractiveness of the region. (Kengyel 2003)

The primary objective of regional policy is to promote economic growth, and not to redistribute income; accordingly, it is not social transfers and European level income redistribution but resources fostering economic growth that serve as instruments of regional policy. Through the enhancement of competitiveness and through economic growth, development differences decrease, since the application of an active regional policy makes it possible to handle inequalities due to the allocation of resources, for every region to realise the benefits stemming from integration; integration deepens and – on a longer run – state aid can be reduced. (Kengyel 2008)

Regional policy requires member states to prepare multiannual programmes. In this way, priority is put on integrated development policies, strategic planning advances, and evaluation methods develop since the continuous monitoring of progress as well as the ex ante, interim and ex post evaluation of programmes is set out as a basic requirement by the European Union. One of the immeasurable impacts of regional policy is that even though the content of development policies varies – is specific for each country –, due to the requirements faced by members states, the approach and the timeframe – considering the cyclical nature of programming periods – is the same among member states; which is a progressive trend for the European integration, with respect to the development of a staff of experts who think along similar general principles. On the other hand – e.g. due to a cross-border cooperation programme – cooperation between member states and regions is enhanced. Through the development in partnership, transparency of development policy is improved, cooperation and coordination advanced, which affects the Europeanization of national development policies. The multiannual planning of programmes is also forward-looking from the financial perspective as predictability brings stability in the implementation process, which in turn also has a positive effect on the plannability of financing. (Kengyel 2008)

Regional policy resources can be divided into three groups: the Cohesion Fund, the structural funds and the Community initiatives, from which the paper lays the focus on the structural funds – taking inter alia the period covered into account.

2.2.1. Community initiatives, Cohesion Fund, structural funds

Community initiatives

The assistance fund was established in 1988 for the targeted assistance of regions – e.g. those located at borders – facing similar problems, simultaneously with the implementation of national programmes. In the 2000-2006 programming period, Community initiatives were aimed at objectives which were set up to perform international tasks. (Szegvári 2002) The number of objectives of Community initiatives had decreased in the 2000-2006 programming period as compared to earlier times, and concentrated on the following four fields: assistance was provided for cross-border, transnational and interregional cooperation (INTERREG III), for the achievement of rural development objectives (LEADER), for promoting access to the labour market (EQUAL) and for reviving cities in crisis (URBAN). (Horváth 2001)

The Cohesion Fund as regional policy instrument

The Cohesion Fund was established after the second regional policy reform, on the basis of the Maastricht Treaty, with the purpose of enhancement and promotion of economic and social cohesion, cutting down the inequalities between regions, and the reduction of the shortfall of the least favoured regions – i.e. Greece, Ireland, Portugal and Spain in 1993.

The Cohesion Fund[8] fits the objectives and instruments of structural policy (Szegvári 2002); however, the conditions for eligibility are not determined by region-related indicators but by the ability to produce income of the member state as a whole. The Cohesion Fund provides financial assistance – in a specific, project-level way – for investments implemented in the domains of environmental protection and trans-European transport networks[9] for major projects with a budget over EUR 10 million in the member states whose gross national product per capita is less than 90% of the Community

[8] From the 2007-2013 programming period, regulations regarding the Cohesion Fund have been included in the common regulatory framework; in this way, project level planning has become programme level.
[9] The highest average turnover time can be achieved with environmental and transport projects.

average. The projects shall have a significant impact on environmental protection or on the development of trans-European transport networks. A further requirement is that the use of funds shall be in line with Community policies and that the total extent of funding shall not exceed 10% of the gross domestic product of the member state. (Kende, Szűcs 2002)

The projects co-financed from the Cohesion Fund contributed to the boosting of territorial development as well as to the strengthening of centre-periphery relations through the development of infrastructure. (Szegvári 2002)

Structural funds

The purpose of structural funds is the development of infrastructure in less developed regions, of diversifying local economies, of the qualification of labour force, and of the productivity of economic sectors.

The European Social Fund was established in 1960 already, in order to support the European social policy; it was followed by the European Agricultural Guidance and Guarantee Fund in 1962; then, in 1975, the European Regional Development Fund was set up. According to the *Agenda 2000*, more than one third of the budget of the European Union shall be used in the structural funds framework. (Szegvári 2002)

In line with the objectives laid down in the *Agenda 2000*, in the 2000-2006 programming period, the objective of the European Commission was to emphasise the appearance of a cohesion policy concerning member states and regions and the enhancement of economic and social cohesion more than before. Resources should be concentrated on domains[10] where the EU action was more efficient than that of the member state, and where in this way, the investments produced synergic effects. Not only the extent of funding but also the objectives to use the assistance varied between less developed and developed regions. In richer areas, funds were concentrated in fields promoting competitiveness (e.g. research and development, education), whereas, in less developed areas, most of them were used for infrastructural development. (Miklós-Molnár 2006a-d) The funds from which the assistance could be used by member states in the 2000-2006 programming period are presented in Annex 2 of the paper.

[10] E.g. transport development, energy efficiency, rural development.

In the case of the structural funds, the Community legislation[11] primarily determined framework principles, while the drawing up of actual implementing rules was the responsibility of the member states. To use the assistance from the funds, each member state set out its development goals in a national development plan, and set up the institutional system to manage the achievement of goals – both from a strategic perspective and at the operating level.

2.2.2. Resource allocation principles in the 2000-2006 programming period

The aim of EU regional policy is to coordinate Community policies on one hand, and on the other to review the national aid systems to make sure that competition policy principles are met and to provide financial incentives for member states to implement developments. (Szegvári 2002)

When drawing up the rules of assistance policy, it was regarded by the European Commission as a basic principle that regional assistance should be provided by the European Union when justified for the least-favoured areas in a concentrated way, in line with the *Agenda 2000* and the concentration principle. These principles serve as basis for the objective rules which determine – primarily based on statistical indicators – the range of eligible areas and the objectives, as presented in Annex 1 of the paper. (Kende, Szűcs 2002)

The concentration of objectives makes it possible to achieve development goals through raising more resources in each intervention area, through concerted planning and programming and in a more concentrated way; however, the measurability of results is disputed many times based on the international literature.[12] Measuring results in Hungary is also made difficult yet. The reason for this is firstly that due to the accession date of 1 May 2004, Hungary received only a limited amount of assistance in the 2004-2006 programming period, secondly that programme implementation and the payment of assistance was delayed until 2009, and thirdly that the measuring of output and impact indicators takes years.[13]

[11] Council Regulation (EC) No. 1260/1999, Commission Regulations (EC) No. 438/2001 and 448/2001.
[12] This issue is addressed in details in the next section (2.3.).
[13] E.g. measuring the reduction of contamination in groundwater brings different results in the first week, the first year and the third year following the execution of the investment.

2.2.3. Regions as intervention areas

The Nomenclature of territorial units for statistics (hereinafter: NUTS) elaborated by EUROSTAT is suitable for the statistical study of regional economic capacities. NUTS I-III are regional, while NUTS IV-V are local level, and are typically determined based on the number of inhabitants and on geographic location. The NUTS system shall be drawn up by member states taking the existing public administration structure into account, and its purpose is – beside facilitating statistical data collection and analysis – the designation of target areas at the establishment of the regional assistance system. The basis for the payment of regional assistance are NUTS II regions who posses various public administration and public authority functions regarding the EU as a whole. Member states may exclusively define normative areas as regions; these, however, are not necessarily public administration-territorial units, they may be merely planning-statistical units. NUTS II major regions *are also the implementation fields of the state functions of economic development, innovation, employment policy, infrastructural development and environmental protection and an instrument for the realisation of territorial competitiveness*; besides, they are accounting and resource-raising categories. (Szegvári 2002)

Accordingly, regional level (NUTS II units) in the European Union fulfils three main functions. Firstly, it serves as statistical unit for measuring regional level differences, and in this way it has a determinant role in the assessment of eligibility requirements; secondly, it contributes to the reduction of regional level differences, promotes the catching-up of regions lagging behind and the improvement of competitiveness; thirdly, it provides for the establishment of relations between central and local level, for the transfer between tasks and for the organisation of services. (Szegvári 2002)

The establishment of the NUTS system is responsibility of the member states; thus, – yet in 1998 – Hungary also provided under its responsibility for the establishment of planning-statistical units.[14] Since self-governing regions cannot function in Hungary due to the autonomy of local municipalities, counties can be considered as administrative regions, while NUTS II regions primarily serve as planning-statistical units; neither do

[14] Accordingly: NUTS1: Central Hungary, Transdanubia, Great Plain and North; NUTS2: 7 planning-statistical regions grouping counties as public administration units (Central Hungary, Central Transdanubia, Western Transdanubia, Southern Transdanubia, Northern Hungary, Northern Great Plain, Southern Great Plain); NUTS3: 19 counties and the capital; NUTS4: microregions; NUTS5: local municipalities.

they have autonomous public authority functions nor economic autonomy. Regions in Hungary were designated in a normative way, i.e. in line with the existing territorial-public administration system, and not along geographical conditions or analytic demarcation.

Regions as statistical-planning units are resource-raising categories and target areas for assistance at the same time. While the structural funds support NUTS 2 level units, i.e. regions, in the case of Community initiatives, NUTS 3 level regions, i.e. counties may also be taken into account as special regions, industrial restructuring or rural areas.

2.2.4. Structural policy at present

Objectives of the European Commission in respect of the 2007-2013 programming period have slightly changed. In the present programming period, particular priority is given to the efficient functioning of the internal market, preserving natural values, environmental and food safety aspects, combating illegal migration and organised crime, and the uniform external appearance and action of EU member states in relation to third countries.

Objectives have changed in the present programming period, their scope is extended and instead of project financing that was applied earlier, focus is laid on the implementation of programmes, which has brought about changes in Hungarian institutions as well. The new regulatory framework[15] provides members states with a greater degree of freedom in respect of the use of funds; however, responsibility of member states has increased due to the set of rules that are based on more flexible principles.

In the present programming period, three priorities are determined for the use of regional policy funds. In order to achieve *attractiveness*, the infrastructure background needs to be developed, meaning firstly that the distribution of transport infrastructure is balanced – i.e. the development of the trans-European transport network –, secondly environmental (mostly waste and wastewater management) infrastructure in order to attain long-term sustainability of economic development, and thirdly that energy efficiency is developed and renewable sources of energy supported. Shifting the economy towards knowledge based activities, promoting national and regional research and development activity and improving the innovation capacities of enterprises is connected with the *knowledge and*

[15] Council Regulation (EC) No. 1083/2006 and Commission Regulation (EC) No. 1828/2006.

innovation priority. In this respect, improving research infrastructure, promoting research cooperation and developing e-governance and e-health are supported. The priority of *more and better jobs* is aimed at human resource development, the improvement of adaptability of the labour force, the implementation of active labour market policies, the reform of education and training systems, health improvement and disease prevention. The objective of the territorial dimension of regional policy is to support entrepreneurship in urban areas on one hand, and economic renewal and developments related to the tourism sector in rural areas on the other. (Kengyel 2007b)

The greatest challenge of the 2007-2013 programming period is the reduction of disparities in the income level of new member states that joined the EU in 2004 and 2007. In no case can the extent of assistance exceed 4% of the GDP of any member state; however, each member state can expect a funding ceiling proportion[16] determined in line with its development level, which means that new member state are favoured since assistance constitutes significant resources and is substantial for the catching-up of recipient countries. Since 2007, income disparities have doubled in the enlarged European Union as compared to the period before accession; however, regional policy expenses have not increased accordingly in the 2007-2013 programming period; their proportion to the Union‟s gross national income will fall. This can be considered a low level of solidarity especially considering that a significant part of transfers flow back to net contributor countries. (Kengyel 2007a)

2.2.5. Criticism of regional policy instruments

Criticism arising in respect of regional policy of the European Union can be classified into three main categories. The position of net contributor member states who question the existence of cohesion policy due to budgetary reasons can be considered as merely *political criticism*. The *efficiency* of regional policy has been examined by numerous studies (Churski 2008), (Santos 2008); these, however, have led to rather different conclusions.

The third type of criticism primarily focuses on the complicated set of objectives and the *lack of transparency and flexibility*. Among the technical criticism (Santos 2008), it is stated that assistance is not aimed at regions with the highest return on investments, and

[16] Determined using a banding approach.

that the proportion of redistribution within a region is higher than that of redistribution between regions.

The results of the studies are in agreement regarding that development disparities between each member state have decreased; however, according to some studies, regional differences within member states have raised and unfavourable development periods are also foreseen in the short and middle run. (Kengyel 2007a) Regions with stronger economic potential at the time of the accession could use assistance more efficiently than less developed regions; thus, it is difficult to demonstrate the impact of regional policy on growth. (Marján 2009)

2.3. Measurability of the impact of funding

2.3.1. Measurability anomalies

In the previous sections of my paper, I have demonstrated the strive – present since the early stages of European integration – for eliminating regional development disparities between and within member states of the Communities[17], and provided a brief overview on the constantly evolving instruments of regional policy. As integration had proceeded – no matter if we mean the increase in the number of member states or integration being realised at a deeper and deeper level –, the issue became a more and more urgent and sensitive question on the EC‟s political agenda. (Barca 2009) If the first interpretation of the above progress is used, the reason is that over the decades, regions from the outside with development levels more and more different from average became members of the Communities. According to the other interpretation, the reason is that deeper levels of integration[18] implied a quality revaluation of regional differences (Churski 2008), (Balassa 1961) in: (Palánkai 2004).

Accordingly, cohesion concepts which are planned to be realised through regional policy instruments have gradually been more and more appreciated, and is even today a priority on the EU‟s political agenda as well as in its budget almost one third of which is used for

[17] Talking about the early stages of integration, the terms *European Communities*, *Communities*, *EC* and *European integration* are used as synonyms for each other, referring to the predecessor of the later European Union.
[18] Common market following the stage of customs union, then economic and – in certain areas – possible political union.

the purposes of structural funds (which constitute only – a rather significant – part of regional policy instruments) (Santos 2008).

As we are talking about an old Community policy, beside the early periods of integration, the experience of several budgetary periods is available; however, the evaluation of regional policy – and of structural funds as its major part – is made rather difficult by the fact that not only did the level of integration and the number of member states evolve at a relatively rapid pace during the last decades (especially in the 2000s), but also policy tools and methods for measuring them have become more and more sophisticated.

For the ten member states (including Hungary) that had joined in the 1999-2006 budgetary period of the European Union in 2004 – acceding to the EU at the time –, a learning period about how to use funds available from the structural funds was started. After closure of the programming period, necessary conclusions can be drawn not only for the governments of new member states but also the other actors in the funding system – including the European Commission, the national management and control systems set up for the use of funds and beneficiaries (no matter if they are budgetary organisations or represent the private sector). (Sapir 2003) in: (Lóránd 2009)

On the other hand, the 2004-2006 programming period generated serious lessons to be learnt not only by acceding countries but also by older member states (EU-15) and European decision makers – different EU institutions –; since the accession of new member states in 2004 and after brought about a radical realignment of the distribution of regional assistance and accordingly, of the spatial distribution of income among member states. Practically all regions of new member states have been classified under Objective 1[19] aiming at the *convergence of the least developed regions* and constituting over two thirds of structural funds (Churski 2008), (Dall'erba 2007), (Dall'erba 2005).

The complaint often heard from the media and critics of the national economic policy – namely that as a result of the inefficient institutional system and poor economic policy, the absorption capacity of Hungary falls well behind the potentially available extent of

[19] After the 1988 regional policy reform, key policy directions have been laid down among six objectives. Of these, Objective 1 comprised 68% of the structural fund budget. Regions with a per capita GDP value (calculated at purchasing power parity) lower than 75% of the Community average are eligible under this objective (Dall'erba 2005).

assistance –, does not only narrow the assessment of results to one single factor but looks even at this factor superficially (Banai 2010).

In the next section of my thesis, I present a – non exhaustive – picture on the broad range of instruments developed and applied for the assessment of the impact of assistance; underlining – beside the assessment of advantages and disadvantages – compliance with potential personal goals of the assessor. For according to experience gained so far, measuring the efficiency and effectiveness of funds leads us to conclusions which differ by each method not only regarding the intentions and expectations of actors but also in respect of results.

2.3.2. Impact assessment and analytical tools

The principal objective of the coming chapters is not the chronological review of the development of methods but to consider – through a comparative assessment of relevant instruments – what are the differences in the methodologies currently in use that lead to different results and accordingly to diverse conclusions. Besides, I perform an evaluation as well: through the assessment of advantages and disadvantages of different methods, comparing actual results to forecasts, I outline which method is closest to my research objectives; which is the one that suits them the best.

To get started, it shall be established what exactly we define as the impact of structural funds; what is the indicator we would like to study during the research, in respect of assistance used in Hungary between 2004 and 2006, in the framework of the National Development Plan.

Efficiency is in close relationship with absorption, another concept widely used in the EU terminology. It shows the amount that has been used at a given level (at the level of the member state, an operational programme or even one single project) in proportion to the available resources. The interpretation of the use of funds can be made even more nuanced if we make a distinction between amounts that have been drawn, committed or potentially recovered, this however, does not reverse the fact that a research merely focusing on efficiency does not assess whether funds were used for sensible purposes considering the highest possible value added (Nagy 2008).

Effectiveness, on the contrary, relates to a much more complex set of research aspects including the assessment of the use of assistance. Maybe due to the complexity of the idea or to the difficulties encountered when assessing certain aspects to be considered, there are many more tools available to measure effectiveness, which may lead to – sometimes considerably – different results. In order to meet the requirement of measurability, to measure effectiveness, we often use methods that are based on the added value that has been generated as a result of assistance or on the GDP growth added – either at programme or member state level (Nagy 2008).

In the literature, if impact assessment or impact analysis is referred to, clearly, the study of the latter indicator through some method is meant. The aim of impact assessment is to assess the result of a social or economic political intervention on the basis of preliminary estimations or subsequent facts that were experienced, providing feedback for those who are concerned by the intervention, and aiming at substantiating potential further steps.

In order to achieve this, impact analysis studies the existence and strength of causalities between the given intervention and the occurred changes (Futó 2009).

Searching for common characteristics of the rather diverse set of impact assessment theories and methods, Bradley et al. divide the application of methods into four stages (Bradley, Untiedt 2007). First of all, the characteristics of Objective 1 regions – considered as target areas for cohesion policy – have to be studied thoroughly. Then, we may review the thematic and financial planning process of the use of funds, and classify resources by type of investment (infrastructure, human resources, R&D, etc.). Knowing the theoretical and the observed context, we have to set up the methodology to be applied.[20] Finally, having obtained the results – often through the determination of a control group or other benchmark – necessary conclusions shall be drawn. (Bradley, Untiedt 2007)

Let us now list the basic criteria that distinguish each type of impact assessment – according to the time of examination and the nature of variables examined.

Let us begin with the aspect of time. Compared to the use of funds, depending on whether we intend to conduct our analysis preliminarily, during the process or after programme

[20] Bradley et al. suggest the application of macromodels (Bradley, Untiedt 2007).

closure, we may distinguish *ex ante* (preliminary), *midterm* (performed during the programming period) and *ex post* (posterior) examinations. The difference lies not only in the availability of empirical data but primarily in the applicability – and application – of conclusions. It would be a big mistake to compare the results produced by a model used for the *ex ante* estimation of programme impacts – even if they had provided useful data to start with for all actors at the beginning of the programming period – with an *ex post* examination method providing an assessment based on empirical data. (Trón 2008) The research presented in my thesis is *ex post*, by the nature of the – mostly accounting – data it is based on; and I take this into account when assessing the results.

Different examination methods may also be classified according to the indicators they use: the most common of these include the procedures measuring macroeconomic indicators (such as GDP value either in a nominal or a real sense, GDP growth rate, and indicators related to real wages, the real interest rate and the development of unemployment). Their largest advantage is that macroeconomic indicators are easy to be quantified and handled in a mathematical sense; therefore, they serve as basis for procedures applying econometric methods (models and different studies). Nevertheless, in respect of the units of examination, most macromethods do not go down to the levels lower than that of states *(top-down approach)*; thus, they can hardly be applied in cases when for instance we would like to have a look at convergence not among EU member states but smaller units – regions, microregions or even municipalities.

For this problem, solution is searched for – and provided – by the more and more widely spread methods which take the indicators serving as a basis for the method from the microlevel – e.g. from municipalities or other beneficiaries; from the level of regions or even smaller territorial units – *(bottom-up approach)*. These methods are well suitable for the examination of decisions of one actor – e.g. a beneficiary – related to the use of funds; however, they may become problematic in respect of quantifiable conclusions, as explained below. (Banai 2010), (Bradley et al. 2005), (Trón 2008) Studies applying the microapproach are worth being distinguished from macroanalyses if only because it is a common situation in international practice that studies show negative results in respect of macroimpacts while – i.e. the desired objective is not achieved through the assistance – while at the microlevel, positive results can be observed (White 1992).

One piece of criticism that can be raised in respect of microapproaches is that their showing positive results does not necessarily mean that results of the macro-type approaches will also be favourable. Since the European Commission typically applies macroapproaches for its analyses and assessments, during the theoretical supporting phase of my research, I did not encounter any micro-type research – affecting Hungary – that would have come up with possibilities for analysis from the municipal perspective. In the present thesis, I apply a certain type of bottom-up approach in an interpretation narrowing it to Hungarian municipalities, also taking the nature of available data into account.

When classifying methods, a further criterion can be whether they are aimed at the examination of some *demand-side* or *supply-side* aspect of the use of funds. At this point, the selection of the examination method can again depend on the actor in the processes from the point of view of which we approach the issue of the use of funds: the European Commission as representative of the donor side can be considered as of the supply part while the beneficiaries of the funds shall be classified to the demand side (Nagy 2008). Demand and supply side impacts can also be differentiated in terms of time: short-term demand-side impacts of assistance can usually be perceived immediately during project implementation; some of the supply-side impacts, on the other hand, remain even after project closure – at least, according to the intention of the European Commission, this would be provided by the fact that maintenance is an obligatory consideration when implementing each project. (Bradley, Untiedt 2007)

In the next sections of the thesis, the theoretical context of the instruments available for the examination of the impact of European Union funds is described; then, the elements applied in practice are presented – along the aspects indicated above.

2.3.3. From international development assistance to European funds

The classic approach to European funds is related to institutions on the donor side, which are often symbolised by the European Commission. Assistance – including the structural funds serving as subject of the present research – can also be considered in this respect as instruments of the dual objective of regional convergence and economic growth (Cappelen et al. 2003), (Dall'erba 2005), (Santos 2008). Accordingly, beside ensuring economic growth, the primary goal of the European Commission is the reduction of regional disparities. However, these two phenomena – growth and convergence – rarely

coexist; so much so that some authors even consider it a mistake to set up the objective of meeting the two through the same instrument at the same time (Santos 2008).

Hereinafter we take a brief overview on the most important theories underlying the objectives of economic growth and convergence, starting from the development economic roots to criticism based on the modern theories of endogenous growth and new economic geography.

To understand the theoretical basis of regional assistance, we have to rely on *growth theories* the roots of which go back a little further than those of Community regional policy, which are incorporated in the practice of international aid, and the most of which consider per capita GDP or its growth as the basic indicator. The successive theories may be aligned along a clear line of development, where simpler theoretical models have been typically replaced by those which could help to better – although never to a full extent – explain the phenomena experienced in reality. Contradicting previous assumptions, the most recent theories that have appeared even question the existence of automatic convergence; thus, they are closer to what is experienced in practice; but on the other hand, they raise rather serious questions in respect of the basic assumptions EU regional policy is laid on (Valentinyi 1995).

Looking for a starting point for the review of novelties of the different growth theories, we quickly get to the model published by two authors – Roy Forbes Harrod (British) and Evsey David Domar (Russian-American) – in the first half of the previous century, which can be considered as the root of growth theories. According to the simplest form of the model, the only factor limiting growth as a bottleneck is capital and capital investments being restricted. Other authors remaining within the framework of neoclassical economics have complemented this model with some other factors. This e.g. is what Chenery et al. did when – adding foreign trade aspects to the idea of capital (savings) being restricted – they established their *dual gap theory*. (White 1992); (Chenery, Bruno 1962) in: (White 1992) One of the basic characteristics of the *neoclassical growth theory* – often hallmarked with the name of Robert Solow (American) who was the best-known promoter of the Harrod-Domar model – is that it considers long-term economic growth as an exogenous variable determined from outside of the model; and also the assumption that economic growth will somehow automatically occur at some point of development (Rostow 1960).

It is exactly these two assumptions – stating the economic growth is exogenous and automatic – that are affected by the most criticism as from the 1980s on. *Endogenous growth theory* emerging at this time does not consider economic growth as exogenous any more – as it is also demonstrated by its name –, and takes a series of political and other influencing factors into account. (Dall'erba 2005), (Romer 2007) The big advantage of these newer models is that they are more suitable for explaining processes experienced empirically in reality; however, they calculate with much more complicated models – sometimes integrating the micro- and the macroapproach. (Valentinyi 1995)

Kengyel distinguishes endogenous and exogenous development as two drivers of development and catching-up. Exogenous development emerges as a consequence of external factors[21]; nevertheless, it can only be considered persistent if the causal chain is complete; i.e. it is generated as an impact of exogenous factors.[22] Endogenous growth, on the other hand is brought about by internal causes: *it develops in a spontaneous way, due to the strong economic basis*; i.e. endogenous growth may become self-sustaining. Simultaneous human resource and infrastructural developments *increase demand and also improve productivity through multiplier effects*. (Kengyel 2003) In line with this, also the opposite can be stated: i.e. other than economic structural causes, productivity and employment factors have an influence on the development of territorial disparities. As a result of assistance, a region catches up, and regional income disparities are reduced; thus, *enhancing the competitiveness of the integrated European economy shall be done in parallel with the continuous maintenance of structural policy principles*. (Horváth 2001)

Beside promoting growth, supporting convergence is a principal strive also quite often in international aid policy but definitely in EU regional policy. Is the catching-up of poorer regions to richer areas an automatic process? Which tools shall be used to promote the reduction of regional disparities? All these matters are drivers of the research of *convergence theories*. (Dall'erba 2005)

Convergence models are based on the neoclassical economic approach. They share the common assumption that the development levels of countries[23] incline toward each other or – as in the case of conditional convergence – toward some other reference point. Yet, if

[21] Such as technological transfer or well trained labour force.
[22] I.e. enterprises established continuously renew the attractiveness of the region and, in this way, new development is generated.
[23] These are usually considered as basic units for research.

we ask the question which indicator exactly it is that gets closer and to what reference point – then we find differences between each theory. (Ligeti 2002). *β-convergence theory* – a concept getting more and more popular from the 2nd half of the 20th century on – is based on the comforting assumption that, through faster growth, regions starting from a lower development level sooner or later catch up to those at a higher development level.

Going beyond the assumption of β-convergence, according to the *σ-convergence theory*, convergence can not only be achieved through growth rates inclining toward each other but also at absolute development levels. Applying it for the economic model, convergence means that the standard deviation of development indicators of different areas – groups of countries or even regions – is on the decrease (Dall'erba 2005), (Nemes Nagy 2004), (Ligeti 2002).

Due to its popularity, it is worth mentioning the *theory of conditional convergence*, according to which, countries do not converge to each other but to their own long-term equilibrium, meeting the criteria of β-convergence in this way (Ligeti 2002).

Nevertheless, the question is whether world economic events of the last decades support the theories listed above? Let us take a relevant example. The trend observed in the case of countries that have joined the European Union in 2004 shows a pattern that is different from the assumptions referred to above – and as a consequence, brings about the radical change of the assessment system set up for the structural funds. The phenomenon that can be observed here is namely that due to the fact that granting entitlement to receive funds continues to depend on the ratio of the development level[24] compared to EU average, at the level of the EU as a whole, even the richest regions of newly acceding member states are classified as poorer areas of the EU; and thus, they are entitled to receive structural funds. In cases when richer and poorer regions – or even smaller administrative units such as municipalities – within a country are granted the same entitlement to apply for funds, the richer have advantages over the poorer, especially if we consider the principle of additionality, for which, richer units can raise necessary resources more easily than those in a less favoured situation (Churski 2008). In addition, there are several factors other than material resources, all of which enhance the advantages of richer and larger municipalities: necessary human resources, information, contacts and lobby capacities are all available there (Tatar 2010). The application of the above ideas in a narrowed sense to

[24] Expressed in per capita GDP as its indicator.

relate only to local municipalities serves as basis for my first hypothesis, according to which, certain parameters of municipalities (territorial location, size, resource structure) are related to the volume of funds used by them.

The above complemented with some other facts indicating difficulties with the realisation of convergence in practice have led many critics to the conclusion that structural funds in their present form do not meet expectations that have been associated with to them in respect of convergence; and that a possible adjustment of policy tools or even the reassessment of objectives may be justified (Santos 2008). Territorial disparity between regions necessarily grows in the first stages of convergence, and can only be eliminated after a country has caught up (Williamson hypothesis) (Cappelen et al. 2003), (MNB 2006) in: (Lóránd 2009).

The issue expounded above is based on the assumption that convergence is an automatically occurring phenomenon which only accelerates as a result of capital injections (such as structural funds) but the existence of which is unquestionable. Nevertheless, according to critical voices that have emerged in parallel with the breakthrough of the different kinds of convergence theories, this assumption is not valid (Dall'erba 2005). Most critics refer to practical experience and underline that the catching-up of regions is far from being this simple, and in particular, it is not an automatic adjustment. Processes observed in reality include phenomena such as the existence of permanently poor regions or regional economic clusters[25] (Sölvell et al. 2003) (Dall'erba 2005); (Porter 1996) in: (Nagy 2007). Neoclassical convergence theories seem to be insufficient to explain these phenomena experienced in practice. Neither do the first pieces of experience of the first decades of European regional policy support the assumption that the impact of structural funds is the greatest in the case of regions starting from the lowest development level (Trón 2008), (Dall'erba 2007).

Critics of the neoclassical convergence theories confront authors promoting convergence, often on totally different bases – e.g. starting from the theory of endogenous growth or relying on the instruments of new economic geography – and using different arguments. (Dall'erba 2005), (Valentinyi 1995) What they have in common is that they all dispute the

[25] In the literature, this term is used for the phenomenon when rich regions form a set together with other rich regions, while poor regions associate with the other poor regions, primarily in an economic geographical sense.

assumption that the rate or level of development of countries[26] inclines toward each other. Their theories often draw on different development economic roots, and are aimed at explaining phenomena and trends experienced in the last decades (Dall'erba 2005). They include concepts such as the theory of convergence clubs or the centre periphery model (Durlauf, Johnson 1995) in: (Dall'erba 2005), (Krugman 1991) in: (Dall'erba 2005). Two of the alternative theories, endogenous growth theory and new economic geography have special relevance in respect of regional policy; and there have been several attempts to associate the two with each other, in the framework of different methods – as it is presented in the next section of my thesis (Dall'erba 2007), (Valentinyi 1995).

At first sight, these critical concepts may in fact seem suitable for assessing the situation in Europe (Dall'erba 2005). However, even these calculate with some oversimplifications, e.g. regarding that they consider regions as areas isolated from each other, the development of which is usually defined as some indicator of growth or income varying in accordance with some external or internal factors.

Impact assessment methods – having undergone continuous changes recently – seek for a solution to handle this oversimplification; aiming at the primary objective of showing a more realistic picture on the impact of development funds taking into account the interactions between regions as well as other factors, even if this means that the theoretic model or method becomes mathematically much more complicated as a result. Such methods are used by the spatial statistical methods lying on economic geographical basis and presented in the coming sections of the paper or by the different econometric studies (Dall'erba 2005), (Trón 2008).

2.3.4. Measuring the impact of funds: setting up the methodological framework

In international literature, different opinions exist in respect of economic growth and convergence as the two principal objectives of structural policy: especially regarding the latter, politicians and economic experts have had a heated debate recently. This is one of the reasons why methods examining the impact of funds shall be of high priority. They could provide an answer for the question: Is the parallel achievement of growth and convergence a right objective; is EU regional policy heading in the right direction? (Santos 2008) (Barca 2009)

[26] Groups of countries or other territorial units.

In the starting phase of EU regional policy, the already existing theoretical framework and methodology elaborated by different international organisations or US economic politicians, applied in international aid practice or in the internal regional policy of the US were applied for EU regional policy (Sasaki 2006), (Sasaki 2007). However, it soon became obvious that due to specific characteristics of the EU – listed below – assistance co-financed from the structural funds differs from classic international aid in significant aspects, which makes it justified to elaborate – and theoretically substantiate – special assessment methods.

The framework elaborated for the assessment of international development aid impacts cannot be applied for EU regional development policy in an unaltered form. One of the reasons for this is that while development aid in the classic sense can usually be used for social transfers or consumption purposes; and thus, they serve the regional, national or even global redistribution of income, EU funds – especially the Community contribution provided from the structural funds – are clearly aimed at economic growth. The aim of structural funds assistance is increasing the long-term supply potential of the economy (Nagy 2008).

Another important difference lies in the conditions for the use of funds. Since in respect of the assistance available from the structural funds, the European Union does not merely behave as a donor state granting aid in international practice. The use of EU funds is conditional upon numerous fund- and programme-specific criteria[27], starting with the requirement of additionality which already puts limitations on the range of potential beneficiaries. Accordingly, lacking an institutional system for the management and control of the use of funds that is operational at least at a general level, no member state would be able to use the funds (Beugelsdijk, Eijffinger 2005), (Tatar 2010), (White 1992).

In respect of the methods applied for impact assessment, just like in the case of the theoretical background, the starting point is constituted by international aid practice. Most large aid institutions – such as the World Bank, OECD or the EuropeAid Cooperation Office – have their own methodology for the assessment of the impacts of aid granted globally (Nagy 2008); and many of these instruments is applicable in the case of European funds. At the same time, like in the case of the establishment of the theoretical

[27] See also Section 2.2 of the thesis.

basis, also here we find numerous limiting factors; thus, we can only regard European funds as a special variant of international aid having imposed rather strict conditions.

Impact assessment methods have been classified in several ways by several authors (Bradley et al. 2005), (Trón 2008). In line with the objective of my paper; below, I list and evaluate each method along the aspects presented in the previous chapter.

Models – lying on an econometric basis or operating with simpler assumptions – are the most commonly applied instrument for measuring the impact of EU funds. Their big advantage is that they lead to quantifiable results, and accordingly, to far-reaching conclusions; in addition, they do not restrict the research to only one of the aspects mentioned at the beginning of the present chapter – they may use a mixture of methods aimed either at measuring the micro and the macro or the demand and the supply side (Bradley et al. 2005). Models applied for measuring the impacts of structural funds[28] are generally characterised by the fact that – even if using different methodologies – they take *spillover effects* and different externalities into account in some way, usually assuming that a variable elsewhere considered exogenous is endogenous. In methodological terms, they usually use some econometric calculations for this purpose (Dall'erba 2005), (Trón 2008) (Cooke 2009).

Modelsimulations are particularly suitable for the *ex ante* estimation of the impacts of funds; therefore, also the European Commission prefers to use them for the preliminary assessment of the impacts of Community policies. To measure the effects of cohesion policy instruments in the 2007-2013 programming period, the European Commission has ordered three models developed by different institutions – models QUEST II, ECOMOD and HERMIN (Bradley, Untiedt 2007).

The models applied by the European Commission share the characteristics of having neo-Keynesian roots and usually calculating with small open economies such as most Objective 1 countries. However, given that variables taken into account and the methods applied for measuring them are specific in each model, models often lead to more or less different results; in particular when estimating the impacts of spillover effects and externalities; accordingly, the most difference comes up in the assessment of long-term supply-side impacts (Bradley et al. 2005), (Bradley, Untiedt 2007). Most models used for

[28] Macromodels in particular.

ex ante estimations apply macroapproaches, and – in line with the intentions of the customer – in many cases, focus is laid on examining supply-side impacts on the medium term at least.

Impact assessment methods that are aimed at the *ex post* mapping and assessment of the impacts of funds are in one sense in a simpler situation than *ex ante* models as in their case, we do not need to rely on guesswork and estimations. Empirical data are available, the task is *merely* to assess them and thereby draw conclusions either general or relating to the specific cases. Nevertheless, the exact determination of impacts is already a hard task as it implies the establishment of the *what would have happened without the funds* scenario as a condition. In addition, the subsequent assessment and drawing of conclusions is often extremely complicated.

One of the simplest methods applied for the posterior presentation of the impacts of assistance from the structural funds is a *case study* (Trón 2008). Plenty of such studies is available discussing the cases of each country that have joined the EU since 2004 but also of those who had been main beneficiaries of EU regional policy earlier – Greece, Ireland, Portugal and Spain (Banai 2010), (Barry, Bradley, Hannan 2001), (Churski 2008), (Tatar 2010). Case studies provide profound analysis through particular examples; therefore, in many cases, they serve as a good starting point if we would like to get to know a certain phenomenon.

Nevertheless, the nature of case studies is such that most of them stop at the level of presenting and analysing phenomena; neither the quantification of the assessment, nor model creation is typical (Trón 2008). Therefore, the general opinion on them is that case studies only allow for drawing conclusions of limited relevance; thus, it is often suggested only to use them as a starting point or part of a complex model (Nagy 2008). However, taking into account that funds are used within the framework of a complex set of different public policy instruments, which takes place at many levels starting from that of individual projects, measure and priority level to operational programmes, it is no wonder that we find no simple method to measure the impacts (Bradley, Untiedt 2007). If we aim at setting conditions no less than our tool measuring structural policy impacts to orientate in a complex system and at the same time to produce quantifiable and comparable results; then, most probably, we will opt for an *econometric model or study*. Let us now have a

look at some of these instruments, starting from macromethods going towards instruments applying a microapproach – which are more relevant from our research perspective.

Another reason why the option to apply econometric methods is interesting is that their results – being based on a solid mathematical basis – quite often contradict arguments implied by the political will lying behind the idea of the use of funds, and prove that the critics of the general theories presented in Chapters 2.3.2 and 2.3.3 are right. Knowing the regional policy objectives, for instance, it might seem to be a surprising conclusion at the first sight that the biggest winners of the part of structural funds spent on infrastructural investments are not the least developed regions but the richer regions of Objective 1 countries (Trón 2008), (Dall'erba 2007).

In other words, within a country, e.g. in terms of regions, β-convergence does not work, just as the Williamson-hypothesis assumes (Cappelen et al. 2003), (Lóránd 2009). Due to their conclusions of the same or a similar kind, econometric methods seem to verify alternative economic theories – i.e. those contradicting the neoclassical approach –, which at the same time largely rely on econometric instruments. In order to illustrate the above approach, in Chapter 2.3.5, I demonstrate the purpose of criticism through an analysis of macroindicators taking Hungarian regions as an example.

One of the biggest innovations implied by studies carried out using the methods relying on spatial statistical instruments inter alia is that they break with the idea of handling the units of observation – no matter if these be states, regions or smaller territorial units – as entities that are independent from each other, and take into account that regions affect each other in accordance with their proximity in space[29]. (Cappelen et al. 2003), (Dall'erba 2005) (Cooke 2009) In this way, they make it possible to study impacts within each country e.g. at regional level while opening the door for us to assess the impacts of funds in an economic sectoral breakdown, and consider the effects of which operational programme or thematic element is the most advantageous for beneficiary countries (e.g. instead of infrastructural developments, it would be worth focusing on human resource trainings, etc.). (Dall'erba 2007)

[29] This autocorrelation among territorial units both in terms of social and economic phenomena is what József Nemes Nagy calls *neighbourhood assimilation* (Nemes Nagy 2007).

Based on the above principles, in particular, on assumptions of new economic geography, the so called *Geographic Macro and Regional* (GMR) *model* was elaborated in Hungary as well, for the purposes of the impact assessment of the 2007-2013 EU budgetary period. The model operates with a system of descriptions of different short- and long-term states of equilibrium, primarily, starting from the equality of the demand and supply in different – input and output – markets, broken down by regions and economic sectors. (Járosi et al. 2009)

A defect of the idea and models presented above is that they primarily work in the case of methods examining macroindicators; and often, they are only suitable for *ex ante* estimations (just like the Hungarian GMR model mentioned above). If we want to assess the impact of structural funds on municipalities in the 2004-2006 period, a method applying a microapproach, which allows for the posterior evaluation of the decisions made by each beneficiary and other actor of the system, would suit are analysis better.

A possible bridging solution could be if we use some approach integrating different macro- and microaspects. (Bradley et al. 2005) in: (Trón 2008)

Being aware of the shortcomings listed above, numerous attempts have already been made to eliminate negative characteristics: research is carried out in respect of the possible ways of developing the methodology and of the applicability of statistical and econometric instruments for microapproaches in particular. As a result, the quantifiable econometric analysis of impacts is already made possible.

One of the fundamental questions to be answered during our analysis is "What would have happened without the structural funds?" This is what the method of *matching*[30] provides a solution for, the application of which in practice in Hungary is presented in Attila Béres"s impact study of 2008 using the example of the Economic Competitiveness Operational Programme of the National Development Plan (NDP) (Béres 2008). The method of matching is based on the idea of examining two groups simultaneously: the members of one of the observed groups can be for instance the beneficiaries of structural funds[31]; while the other, so called control group could consist of entities that did not receive funding. In the course of the impact assessment, we compare the state of the

[30] The exact wording is *propensity score matching.*
[31] Or, going further, those municipalities who received structural funding in the framework of the NDP between 2004 and 2006.

entities that received funds with the state of those that did not. The difficulty is that for an entity-level comparison, we need to identify pairs – so called statistical twins – among the entities, one of the members of which belongs to the target group and the other to the control group, while they share as many other characteristics[32] as possible (Béres 2008); (Nagy 2006).

The method of examining statistical twins may be nuanced by the *difference in differences* method applied in econometrics, using which, we compare our target group observed not only to a control group but also to the state of entities in the target group prior to the receipt of funds (Béres 2008).

2.3.5. The shift of macroeconomic indicators in Hungary between 2004 and 2008

In the previous chapters, I presented the instruments set up in order to meet the objectives lying behind regional policy, and I mentioned some critics of the methods, according to whom, the tools applied at present are not or are only partially suitable for meeting the regional policy objectives (Trón 2008), (Dall'erba 2007), (Cappelen et al. 2003), (Lóránd 2009). To illustrate these concerns, I carried out a brief analysis on the impacts of regional policy instruments in Hungary in respect of the 2004-2008 period, using macroeconomic indicators.

The final eligibility deadline of the 2004-2006 programming period was 31 December 2008; therefore, when analysing per capita GDP and unemployment data – the indicators most commonly used for measuring of the regional policy instruments –, I take the 2004-2008 period into account. In the period under examination, per capita GDP in Hungary evolved as follows:

GDP per capita (th HUF)

Territorial unit	2004	2005	2006	2007	2008	Difference (2008-2004)
Central Hungary	3291	3563	3924	4182	4424	+1133
Western Transdanubia	2139	2157	2353	2455	2594	+455
Central Transdanubia	1948	2041	2121	2319	2398	+450
Southern Transdanubia	1462	1508	1587	1711	1825	+363
Southern Great Plain	1430	1476	1559	1652	1783	+353
Northern Hungary	1358	1429	1501	1599	1643	+285
Northern Great Plain	1343	1383	1483	1572	1657	+314

Source: Central Statistical Office (CSO) (www.ksh.hu; accessed: 7 July 2012.)

[32] Examples include: geographical location, size, wealth situation or sector in the case of companies. The more of these we define as conditions, the fewer pairs we find that meet our criteria.

When examining the per capita GDP value, we can conclude that this indicator was on the increase in the case of all regions; however, the growth is predominant in the case of the region with the highest per capita GDP value at the beginning of the programming period (Central Hungary).

In addition, we find that the higher a region"s per capita GDP value at the beginning of the programming period was, the higher was the per capita GDP increase it could achieve. The only exception from this is the case of Northern Great Plain and Northern Hungary where the per capita GDP increase of Northern Hungary – starting from a more favoured position – ended up less than that of the less favoured Northern Great Plain. On the whole, we can conclude that regions in a more favoured position at the beginning of the programming period could further increase their advantage; thus, the development gap had widened further.

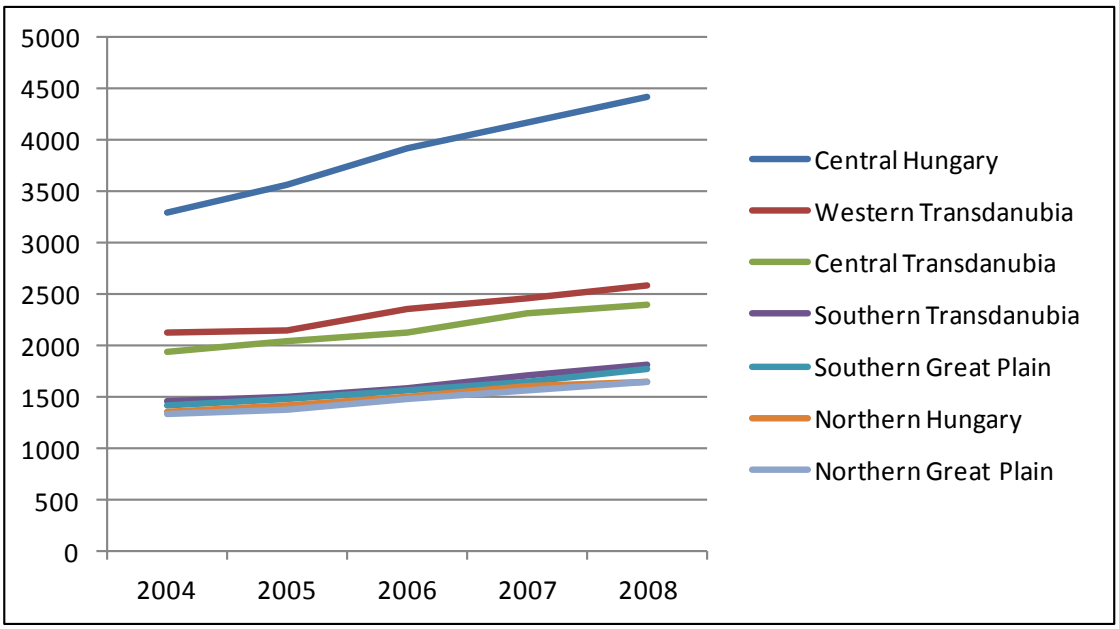

Figure 2: Shift of per capita GDP between 2004 and 2008, by region
(figure by the Author based on CSO data)

We may get a more nuanced picture if we do not regard per capita GDP but its growth expressed in percentages, taking 2004 as the base year. This way, we get the following results:

GDP per capita growth in percentages (base year 2004)

Territorial unit	2005	2006	2007	2008
Central Hungary	8.26%	19.23%	27.07%	34.43%
Western Transdanubia	0.84%	10.00%	14.77%	21.27%
Central Transdanubia	4.77%	8.88%	19.05%	23.10%
Southern Transdanubia	3.15%	8.55%	17.03%	24.83%
Southern Great Plain	3.22%	9.02%	15.52%	24.69%
Northern Hungary	5.23%	10.53%	17.75%	20.99%
Northern Great Plain	2.98%	10.42%	17.05%	23.38%

Source: Author's own calculations based on CSO data

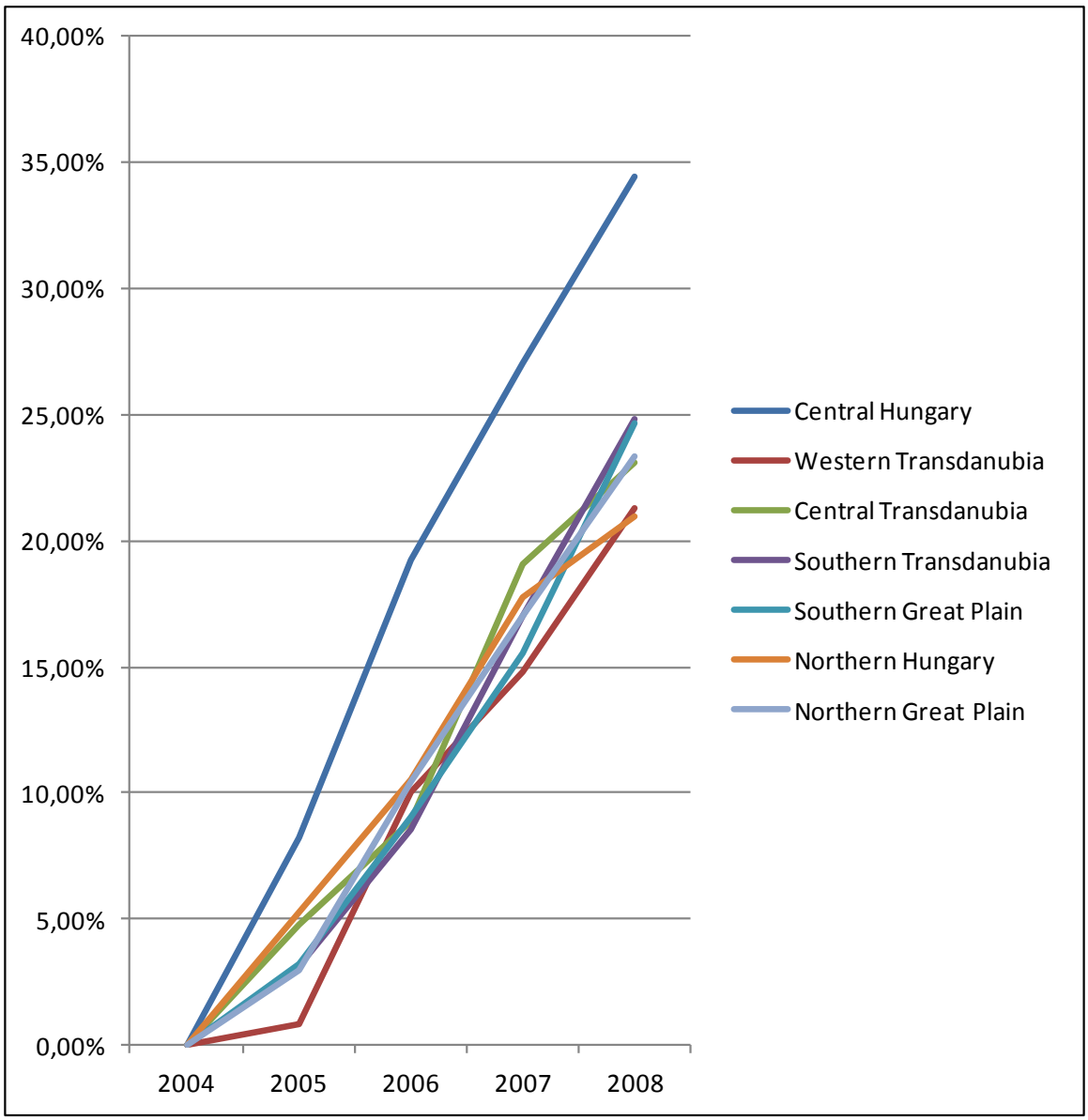

Figure 3: Per capita GDP growth in percentages, regarding 2004 as base year
(figure by the Author based on CSO data)

From the above figure, we can draw the conclusion that most developed region (Central Hungary) achieved by far the highest growth rate, while the rate of development of the

other six regions did not even get close to it. Accordingly, development differences between Central Hungary and the other six regions did not decrease but increase.

If we exclude Central Hungary from the scope of our analysis, we can get to the conclusion that, in the case of the other six regions, the shift of per capita GDP in percentages shows a more balanced growth and lower standard deviation; accordingly, in respect of these six regions, development disparities have decreased– even though to a rather small extent.
This is also supported by the fact that the development of Western Transdanubia[33] cannot be considered as an outlier, but in fact, it is one of the regions with the lowest development rate.

Beside per capita GDP, we should also examine the other macroeconomic indicator used when discussing regional policy: the rate of unemployment. Unemployment data are summarised in the following table:

Unemployment rate, %

Territorial unit	2004	2005	2006	2007	2008	Difference (2008-2004)
Northern Hungary	9.68	10.61	11.01	12.28	13.37	3.69
Southern Transdanubia	7.27	8.80	8.99	9.99	10.30	3.03
Northern Great Plain	7.20	9.07	10.95	10.81	11.96	4.76
Southern Great Plain	6.27	8.17	7.85	7.92	8.70	2.43
Central Transdanubia	5.60	6.30	6.06	5.01	5.82	0.23
Western Transdanubia	4.63	5.93	5.75	4.99	4.93	0.31
Central Hungary	4.54	5.16	5.10	4.74	4.61	0.07

Source: Central Statistical Office (www.ksh.hu; *accessed: 7 July 2012.)*

When examining the unemployment rate, we can conclude – unfortunately – that its value increased in the research period in the case of all regions. If we rank the regions according to the rate of unemployment, we find that the there is only one case (that of Northern Great Plain) where 2004 data differ from those of 2008. The state of Northern Great Plain can be considered as particularly distressing in respect of the extent of the increase of unemployment, while Central Hungary and Western Transdanubia can be considered as the regions in the most favoured position in this respect. The shift of

[33] Second most developed region in respect of per capita GDP.

unemployment between 2004 and 2008 broken down by region is shown in the figure below.

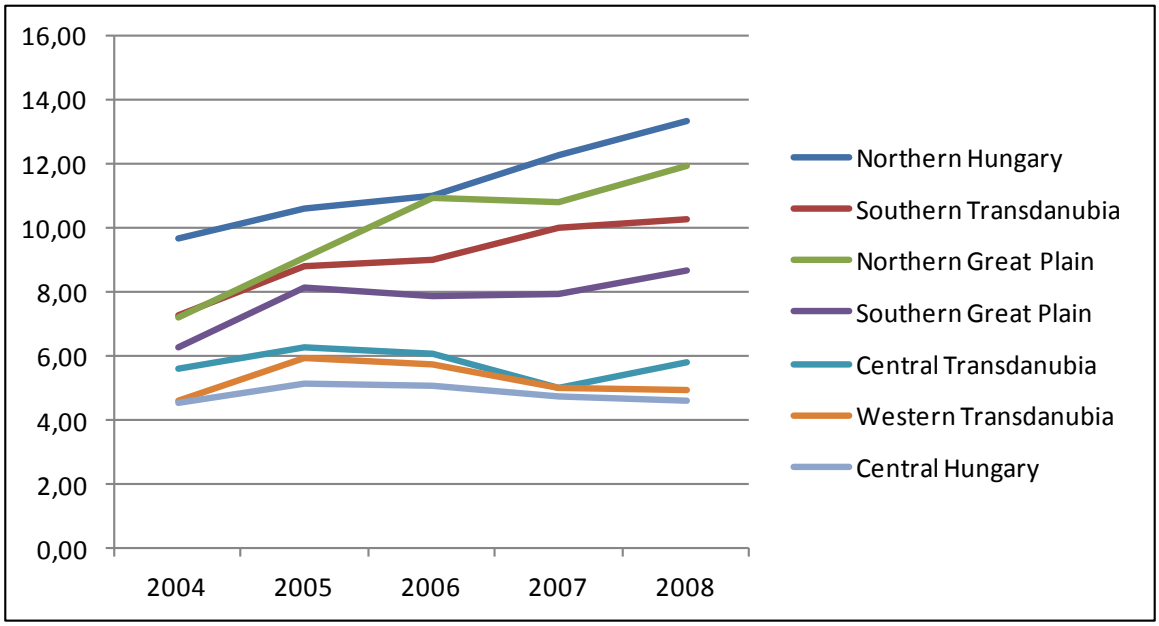

Figure 4: Shift of the unemployment rate between 2004 and 2008, by region
(figure by the Author based on CSO data)

2.3.6. Evaluation and applicability of methods, possibilities

The assessment of the results and the drawing of conclusions may be the most difficult stage of every impact assessment. If we used a research method applying a microapproach, the following relevant question might arise: To what extent would the beneficiary have realised the project or development if it had not received structural funds? In light of the answers received for this question, we may distinguish three different cases:

- perhaps, the development would have been realised anyway, as part some regional or local development plan, from state or private resources (full substitution);
- the beneficiary could have implemented some part of the development from own resources[34] (partial substitution);
- without structural funds, no single part of the development would have been realised (zero substitution). (Bradley, Untiedt 2007); (Lóránd 2009)

[34] In this case, by own resources, we mean any resources from the local or state budget or from the private sector available for the beneficiary (e.g. municipality) other than structural funds.

If we regard Hungarian projects, the third option is relevant for most cases, since the national development policy practically solely relies on EU resources and the completion of Community funds from national co-financing (Nagy 2006).

Taking into account that our research subject is exclusively constituted by assistance financed from the structural funds, used by municipalities in Hungary in the 2004-2006 programming period, we shall assess the measuring of the impacts of funds from the point of view whether they are suitable for measuring the indicators we would like to observe.

In the previous chapters, we have progressed gradually towards methods which are suitable for the purposes of the research on the subject of our paper. In this way, we have come to the conclusion that our goals would be best suited by a method which allows for the posterior microlevel analysis of the impacts of structural funds, possibly assessing the results shown in respect of the change in municipal property.

Following the theoretical introduction – focusing on the research scope and in order to understand each research component – we shall go on presenting in details, applying an approach focusing on practice, the processes applied in Hungary in the 2004-2006 programming period, which serve as basis for the fund management system. However, before we come to that, let us take an overview on the other EU member states – how are the aspects of additionality examined in my paper applied elsewhere?

2.4. Application of additionality aspects in other member states

2.4.1. Municipalities' possibilities to use EU funds

Through the policy of its different institutions, the European Union affects the state of the member states‟ municipalities[35] in numerous ways. One of the most concrete and direct form of this influence – already presented in details in the previous sections of this paper – is when municipalities receive assistance from structural funds. (Fleurke 2007) Nevertheless, throughout Europe, we can observe a wide variety of different patterns both

[35] Throughout Chapter 2.4 and 4.4, under the term *municipality*, I mean local governments located in the territory of the European Union.

in respect of the opportunities of municipalities to use EU funds and regarding the actual use of funds.

This alone might not be a surprising fact since the use of funds is determined by numerous factors – which, from a municipal perspective, can be considered as exogenous. Hereunder, from among these factors, I attempt to highlight the elements that are the most important and relevant for the case of municipalities in Hungary.

Referring back to the phenomenon mentioned in Chapter 2.3 of my paper, according to which, entitlement to structural assistance is judged on a regional basis, Objective 1 comprising the majority of funds only provides assistance for regions – and municipalities located in these –, the GDP of which is relatively low; i.e. it does not exceed a given proportion of the EU average. As a consequence, in old member states[36] such as the Netherlands, a municipality can hardly count on EU assistance when compiling its development plan. (De Rooij 2002) The other end of the spectrum is constituted by East-Central European countries that have newly acceded to the EU, where nearly the entire territory of the state is made up of Objective 1 regions – like in Estonia or Hungary.[37] (Churski 2008; Dall'erba 2005) Then, in these countries, we often find that the country"s development plan is practically the same as the concept set up for the use of EU funds, the reason for which, however, is not exclusively to be found in economic political decisions – we should not forget that a state"s own resources destined for development are in many cases used up by the compliance with the requirement of co-financing. (Tatar 2010)

At the same time, looking at it from the other side, the positive effects of the structural funds are perceptible in the most concrete form in exactly the same countries. Direct investments realised by subnational public institutions produced a rapid growth – of 8.1% yearly average – in East-Central Europe in the decade after the millennium, which is largely due to the strong capital injection provided from EU resources. In countries of the area, EU assistance has a measurable leverage effect. (DEXIA 2011) Before the 2000-2006 period, then poorer regions of the EU had had a similar experience – for these

[36] Under the term *old member states*, I mean countries that joined the EU before 2004, while I use the term *new member states* to refer to countries that have acceded to the Union in 2004 or after.
[37] The map included in Annex 3 presents the regions entitled to funding under Objective 1 and those receiving transitional support.

regions now it seems that entitlement has ceased due to the Eastern European enlargement, as I have referred to it in Chapter 2.2 of my paper.

In these areas, the process is associated with painful consequences, with the negative aspects of EU membership prevailing and eurosceptic views advancing in public opinion. (Kinnunen 2004; Fleurke 2007)

It also follows from the above that while in Western Europe, in line with the purpose of cohesion policy, exclusively the municipalities in the worst economic-social circumstances can get EU assistance; in East-Central Europe it is only the "wealthier" municipalities with better resources that can afford the developments realised using the assistance – these are the ones who can meet additionality as a requirement and raise the necessary co-financing –, while those facing the gravest social-economic problems are left without cohesion resources. (De Rooij 2002; Tatar 2010)

Beside the phenomena mentioned above, naturally, the national political, economic and legal regulatory context also plays a key role in the municipalities" use of assistance. The relevant national regulations substantially determine the decision options for municipalities. East-Central European countries – including Hungary – are usually characterised by a more centralised territorial structure than in Western Europe; not only local authorities but also the other subnational actors have limited powers. (Salamun 2007; Tabără 2010; Tatar 2010)

Even if the EU and national political-economic-regulatory context would allow for a municipality to use the assistance, it is not sure that the possibilities available for the municipality make it feasible to actually draw the funds. Studies dealing with the absorption capacities of beneficiaries present fairly the obstacles in the way of the actual use of the assistance. Applying these factors for municipal beneficiaries, basically, we can set up two groups: one can be connected to the narrowness of financial resources, i.e. when a municipal budget cannot afford necessary own contribution for the implementation of EU projects; while the other is basically related to the lack of administrative capacities at municipalities (e.g. if the personnel, technical knowledge or experience necessary for the use of funds is not available at a municipality). The latter is a challenge of a relatively recent origin in the history of the European Union since before

the Eastern European enlargement, the availability of necessary human resources and administrative capacity was not a question in the case of the then member states.

From the above, we may also draw the conclusion that municipalities do not have the same prospects, not even within the same country. (Oplotnik 2007) Numerous studies on the impacts of EU funds discuss exactly which factors may increase the impact of funds on municipal beneficiaries. A conclusion they share is that – beside the basic criterion of eligibility which is, in line with the above, determined by the development level of the region – the size of the municipality (the number of residents) is the most important influencing factor: the larger a number of residents a municipality has, the better the resources it disposes of. At larger municipalities, capacities needed for the use of funds are usually available: human resources, technical skills and knowledge, entrepreneurship and material goods as well as the – also indispensable – contacts and information; as a result of which, municipalities possessing better resources, i.e. better financial and administrative capacities are at an advantage when drawing EU funds. (De Rooij 2002; Tatar 2010)

3. Hungary in the European Union

The primary goal of this chapter of my paper is to make financial processes easy to overview through presenting the basic elements of the Hungarian funding system and determining the actors in the institutional system, moreover, to make the act of assessing the impacts of funds meaningful in the case of each actor in the institutional system. Without the demonstration of less scientific elements, the connections between each one of my hypotheses would only be meaningful in a restricted sense; therefore, the present – primarily descriptive – section aims at presenting how processes rely on each other.[38] When writing the chapter, I strongly drew on my earlier publications in the subject.

Objectives of European Union regional policy and those of the domestic regional policy are necessarily in compliance with each other – in order to allow for the use of the assistance. In the 2004-2006 period, Hungary was entitled to use regional assistance in an amount of EUR 2.8 billion altogether which comprised 1.2% of the GDP; this is in absolute terms as well as when expressed in proportion to GDP or population less than – about one third of – the assistance provided to earlier main beneficiaries of regional policy (Greece, Portugal). The relatively low assistance level can be regarded as fair enough since it can be considered as a preparatory period – both in terms of institutions and financing – for the 2007-2013 programming period when Hungary is entitled to use EUR 22.4 billion. (Kengyel 2007b)

In the case of structural funds, the primary legal sources for the use of funds and the establishment of the institutional system are comprised by EU regulations[39]. Council regulations set up rules for the conditions of the use of funds and for the range of eligible measures, while Commission regulations determine the implementation order of programmes, requirements regarding the management and control system, the order of financial control and the certification of expenditure and general rules regarding evaluation and information.

Beside EU legal sources – applied as a regulatory framework – the way of the use of funds as well as the institutional system structure and the tasks and responsibilities of

[38] Since the assessment of the 2007-2013 programming period is not subject of my paper, the presentation of the institutions and processes is exclusively limited to the 2004-2006 programming period.
[39] Council Regulation (EC) No. 1260/1999; Commission Regulation (EC) No. 438/2001; Commission Regulation (EC) No. 448/2001.

each organisation participating in implementation shall be regulated within each member state‟s scope of authority.[40]

3.1. The institutional system in Hungary in the 2004-2006 programming period

3.1.1. Programming and the National Development Plan

In the 2004-2006 programming period, member states were required to set up a Community Support Framework for Objective 1[41] regions and a so called Single Programming Document for Objective 2 and 3 regions. Since the per capita GDP of Hungary did not reach 75% of the EU average in any of the regions, the entire territory of the country fell under Objective 1. The Community Support Framework which is also a financial commitment between the European Union and the member state was agreed on – based on the National Development Plan – through negotiations between the European Commission and Hungary. (Kengyel 2007a)

The National Development Plan is a national strategic document containing the member state‟s development objectives and priorities. In the case of Hungary, it also included a comprehensive *ex ante* evaluation, macroeconomic analysis and assessment by sector; it demonstrated the coherence between the strategy and the priorities and the principal financial data; in addition, it contained a brief description of each operational programme and of the planned implementation processes. (Nemzeti Fejlesztési Ügynökség 2007b)

Unless the National Development Plan was prepared, assistance from the structural funds was not available; therefore, elaborating it was an essential task. (Kengyel 2007b) The strategic goal of the National Development Plan was improving the quality of life and reducing the lag compared to the EU average, which could be achieved through three specific objectives[42] – competitive economy, improving human resources and raising employment, preserving national resources and environmental protection.

[40] In Hungary, in the period covered by my research, the basic regulations were included in Gov. Decree No. 360/2004 (XII. 26.).
[41] See also Chapter 2.2. of the thesis.
[42] The specific goals comprise four priorities: improving the productive sector‟s competitiveness, increasing employment and human resource development, providing better infrastructure and cleaner environment and

In order to achieve the strategic goals and priorities, five operational programmes[43] were named in the National Development Plan, which could though be linked to several priorities but were typically specialised in the objectives of one priority. Beside the four sectoral operational programmes, the objectives of the regional operational programme were more closely related to territorial development; however, it was also related to the entire territory of the country. (Kengyel 2007b) Within each operational programme, priorities, measures and sub-measures[44] were determined – taking into account the state of development of the different areas and aspects for catching-up –, to which, appropriations were defined for the 2004-2006 programming period.

3.1.2. The institutional framework for implementation between 2004 and 2006

In my thesis, I present the institutional system set up for the structural funds, taking into account that the empirical part of my research relates to assistance from the structural funds. The institutional system established for the implementation of the National Development Plan and the system of connections and dependence is presented in the figures included in Annex 5 of the paper.

Community Support Framework Managing Authority

The body responsible for strategic and management functions in respect of the use of structural funds was the *Community Support Framework Managing Authority* set up in the National Development Office, which institution had an overall, full responsibility regarding the implementation of the National Development Plan, in connection with each operational programme. Functions of this organisational unit stood above those of the other managing authorities, since this body was responsible for the establishment, development and continuous operation of the institutional system managing the funds. Since the 2004-2006 period can be considered as a learning period both in respect of the preparedness of the institutional system and in financial terms (Pitti 2005), (Kengyel 2007b), it was an essential stage in respect of the setting-up of national regulations and maintaining contacts with the competent Directorates General of the European Commission.

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strengthening regional and local potential. Technical Assistance is listed as the last component (of not a professional nature), which is aimed at using the maximum amount of assistance.

[43] Basic data regarding the operational programmes are included in Annex 4.

[44] Calls for applications were published according to sub-measures.

A basic requirement for the use of funds is that the member state can meet its obligations regarding the provision of – statistical and financial – data towards the European Commission. The development of the Unified Monitoring Information System (UMIS) had already started in the preparation phase for the accession in order to fulfil the obligation to provide data, ensure that data are up-to-date, and promote monitoring activities as well as the management of assistance; the data stored in it serves as the basis for the empirical part of my research, since it contains all kinds of financial data related to the funds.

Monitoring committee

In line with EU legislation, the managing authority operated a monitoring committee in relation to the entire technical and implementation process, the tasks of which included the monitoring of the implementation of approved projects, the regular assessment of the progress made, the review of results in relation to the objectives set up, and the analysis and approval of the implementation reports to be submitted to the European Commission. Accordingly, the monitoring committee – involving representatives of non-governmental organisations – was the highest level coordination and strategic decision-making body of each operational programme.

Managing authorities and intermediate bodies

In the institutional system set up in Hungary, managing authorities – operating under the portfolio of the competent minister – had strategic functions. Their main tasks included the elaboration of the operational programme and the programme complements, the implementation of the operational programme, the elaboration of necessary rules of procedure, the evaluation of progress made, and the fulfilment of information and publicity requirements. The level of the settlement of accounts with the European Commission was not that of each project but that of operational programmes.

The managing authority delegated operating functions[45] related to project management to an intermediate body. The distribution of functions between the managing authority and the intermediate body varied by operational programme; measuring the performance of

[45] Receipt of applications, check of form and content, evaluation, operation of an evaluation committee, preparation of grant contracts, control, payment and validation of invoices, provision of statistical and financial data, preparation of ad hoc reports, performance of first level control activities, etc.

intermediate bodies as well as monitoring their operation was task and responsibility of the managing authority.

Paying authority

The paying authority can be considered as a financial link between the European Union and the member state. It is responsible for the settlement of accounts in respect of payments on account of funds, for the receipt of payments from the European Commission to the member state, and for the compilation and submission of payment applications – based on expenditure actually incurred at beneficiaries. Financial flows in the reverse direction, i.e. the application of corrections and financial recovery is also responsibility of the paying authority.

3.2. Financial implementation processes related to operational programmes financed from the structural funds

In the entire course of the implementation of operational programmes, the financial settlement of accounts with the European Commission has a central role; as it largely influences the extent of advance payments in order to implement the projects, and, this way, has an impact on the state of the central budget.

Financial settlements related to the implementation of the programmes can be classified into two main groups that are largely different from each other. It is worth distinguishing between the flow of funds between the member state and the European Commission and the settlement of accounts within the member state – between beneficiary, supplier, national authorities – both in respect of content and techniques.

3.2.1. Financial connections within the member state

In the case of projects realised in connection with the structural funds, as construction work progresses, suppliers submit their invoices to the beneficiaries since it is only them who they are in a contractual connection with. Neither beneficiaries, nor suppliers get resources directly from either the European Commission or the paying authority.

The settlement of accounts between the supplier and the beneficiary can take place in two ways. The beneficiary has an option to pay the entire amount on the supplier‟s invoice or, using the other option, to directly settle with the supplier the own contribution only. The reason for this is that e.g. in the case of major projects of an infrastructural nature, the

obligation to pay the entire amount of the invoice could bring about liquidity problems at the beneficiary. The detailed description of the payment process is included in Annex 6 of the thesis.

3.2.2. Settlement of accounts with the European Commission

For the receipt and transfer of assistance from the European Commission, the paying authority opens a euro bank account at the Hungarian State Treasury separately for each operational programme and each fund, of which it disposes until the closure of the operational programme and the transfer of the final balance. When the operational programmes are approved, the member state is entitled to an advance payment which is used by the paying authority for paying the Community contributions. In this way, the national budget of the member state does not or does only partially need to pre-finance the EU contribution allocated for each operational programme. The bank accounts opened at the Hungarian State Treasury bear interest, and interests earned belong to the member state; however, they are to be used for co-financing assistance, in line with the principle of additionality.

In the case of operational programmes financed from the structural funds, the member state is entitled to draw down advance payments. The advances drawn down shall be used by the paying authority to cover Community contributions. As the programmes progress, taking certified and actually paid eligible expenditure into account, the paying authority initiates interim payments up to 95% of the assistance in the case of operational programmes financed from the structural funds. The processes of the settlement of accounts and the application for payment to the European Commission are illustrated by the following figure – in particular, its points 3 and 4.

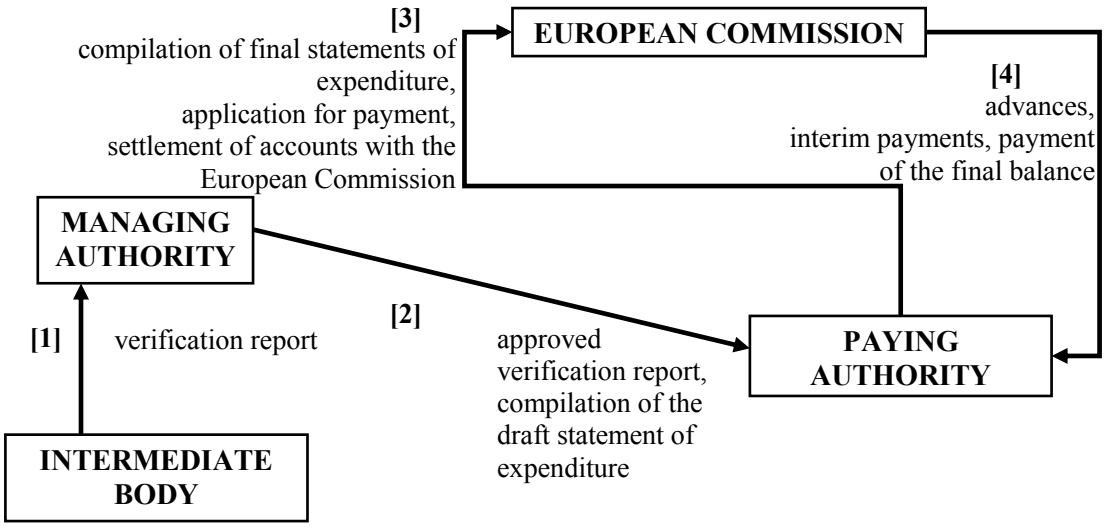

Figure 5 on the processes related to the settlement of accounts and the request for reimbursement
(figure by the Author)

1: The intermediate body prepares the draft verification reports and then submit them to the managing authority.

2: The managing authority approves the verification reports – by priority in the case of operational programmes – and compiles the draft statement of expenditure and transmits it to the paying authority.

3: The paying authority compiles the final statement of expenditure and certifies that statements of expenditure are based on actually incurred costs, are accurate and adequate, and that the management and control systems of the intermediate bodies and the managing authority are in line with relevant legislation. After this, the paying authority submits the application for payment to the European Commission.

4: The European Commission transfers the assistance requested in the application for payment to the paying authority.

The final balance (remaining 5%) is only paid by the European Commission after the operational programme is successfully closed both in a physical and a financial sense, and after the winding-up declaration[46] is issued and approved by the European Commission.

3.2.3. Budgetary connections between Hungary and the European Union when using EU funds

EU assistance does not directly improve the budgetary situation of member states as funds flow through the intermediary institutional system. The benefits of the assistance – economic development, the decrease of unemployment, the catching-up of less favoured regions, the promotion of social cohesion – may appear in the central budget in an indirect or direct way years after the payment of funds. For instance, in the form of increased tax revenues, i.e. indirectly, they contribute to the improvement of the balance of the state budget.

However, to receive assistance, it is needed in all cases that the necessary national co-financing is available – in line with the principles of subsidiarity and additionality. These resources might either come from the central budget or be regional or local level contribution or own contribution of the beneficiary. The contribution at the regional level or that of local municipalities can be considered as additional costs – regarding public finances as a whole –, i.e. the reallocation of national contribution between each level (central budget, regional and local level) does not change the balance of the state budget on the whole. The involvement of the private sector might mitigate the immediate burdens on the state budget, and spread the burden arising due to the developments in time. (Szemlér 2007) Nevertheless, this is partially contradicted by the fact that the value of the coefficient of determination between the state budget deficit and public development expenses in Hungary was close to 0.8; i.e., the level of additionality expenses largely influences the extent of the deficit. At the same time, the burdens of the state are further raised by the fact that in order to achieve the highest level of absorption possible, the member state has to overbook: make commitments towards beneficiaries higher than the resources it can expect. This is due to the fact that the implementation of certain projects is unsuccessful; thus, to achieve an absorption rate of 100%, member states have to calculate with commitments over 100%. Nevertheless, tax revenues may

[46] The issuance of the winding-up declaration is the responsibility of the winding-up body, in which it declares that the settlement of accounts related to the implemented programme is adequate, transactions underlying costs are legal and regular.

increase due to the effect of Community funds to boost the economy, which eventually may improve the budgetary deficit. (Banai 2008) On the other hand, according to other domestic authors, the supplementary state intervention leads to resorting to debt, since “the increase of state aid paid due to the state budget naturally brings about a surge in indebtedness as a result of budgetary deficits and then the accumulation of these” (Pitti 2010) ; while, as an advantage of the 7-year financial planning, appropriations to be used for development can be calculated with certainty in advance.

4. The opportunities of municipalities in Hungary and providing additionality

In this chapter, I give a summary of the risks that have been present in the management of municipal economies in Hungary in the period since the end of the socialist regime. In order to set up a logical framework, I sum up the evolution of local governance, the changes that have occurred in municipal management and their impacts. Even though the process of resorting to debt has only become intense in the municipal system after our accession to the European Union, I deal with the theoretical context of this phenomenon in details, considering the provision of financial instruments necessary for the use of EU funds in line with the additionality requirement. The reason for my focusing on the demonstration of the accounting processes is that the detailed knowledge of the movements behind each item is needed for the understanding of data applied in the course of empirical testing.

4.1. Evolution of local governance in Hungary

4.1.1. The European Charter of Local Self-Government

In compliance with the principle of subsidiarity, the European Charter of Local Self-Government (1985)[47] sets out that *"public responsibilities shall generally be exercised, in preference, by those authorities which are closest to the citizen. Allocation of responsibility to another authority should weigh up the extent and nature of the task and requirements of efficiency and economy"*. The principles laid down in the Charter[48] appear in the legal system of nearly all EU member states as fundamental municipal values. (Lóránt 2008a)

The Charter sets out the principles of the relationship between the central government and the municipalities; in addition – taking into account that the establishment of the financial base is one of the preconditions for the applicability of the subsidiarity principle (Gyulai 2000) – it also lays down framework principles regarding the ways of financing; accordingly, a part of the financial resources shall be constituted by revenues from taxes and charges which are levied under municipal authority, and of which, the municipality

[47] Published in Hungary by Act No. XV of 1997.

[48] Beside the European Charter of Local Self-Government, the European Charter of Regional Self-Government (1997) should also be mentioned here; however, since our research is not aimed at regions, I do not go in details in this respect. See (Forgácsné Orosz 2000); (Szegvári 2004) in the domestic literature.

disposes freely within its scope of authority. The autonomy of municipal financial management includes the free spending of received resources, while *"conditions for use may be associated with financial instruments distributed by the state government"*. (Lóránt 2008a) According to the Charter, it shall be preferred to use local taxes as opposed to conditional or partly conditional grants, and sets out that the grant of funds shall not restrict the municipalities" right to make independent decisions within their scope of authority. The application of local taxes promotes municipal accountability; while conditional grants weaken it and encourage municipalities to increase spending; in addition, they loosen up the budget constraint of municipalities. (Lotz 2009)

In countries of the European Union, we find that the revenue structure of municipalities is in a lot of aspects similar to each other. The three main sources of financing – intergovernmental grants on a normative basis or with conditions for use, taxes shared or left by the central government to municipalities and own source revenues[49] – are present in all countries; however, significant differences can be outlined between the revenue structures and the proportion of sources to each other; based on which, a Northern European and a Southern European model is distinguished in literature.[50] (Kusztosné Nyitrai, Barabás 1998), (Lóránt 2008a)

The weight and extent of local taxes is different in each member state and shows a mixed picture. We can distinguish a horizontal and a vertical model of mitigating municipal income differences. In the case of the vertical model, it is the state that narrows the negative difference between the resources available for municipalities; while, in the horizontal model, there is a balancing mechanism working among municipalities, i.e. resources are flowing from the financially stronger municipalities to the financially weaker ones. (Csipai, Vigvári 2009)

[49] Local taxes, charges, revenues from municipal property, borrowing, etc.

[50] In the Northern European or Scandinavian model, local municipalities of large size are typical with a great extent of financial-economic autonomy and responsibility; while in the Southern European model, the size of municipalities mainly depends on historical traditions and the financial system id centralised and there is a significant control by the state. For a detailed description of the French, Swedish and German municipal models, see (Kusztosné Nyitrai, Barabás 1998).

4.1.2. The period following the change of regime

In the period of the regime change and of the transition to market economy, the evolution of local governance formed an integral part of the transition, both in the political and the social sense. (Pickvance 2002), (Straussman, Fábián 1994) In the period preceding the transition, people expressed their choice of certain values; accordingly – laying it down in the Constitution and applying it through Act No. LXV. of 1990 (hereinafter: Act on Local Governments[51]) –, each settlement regardless of its size or location got the right to local governance and to the regulation of local public affairs, beside the freedom to form partnerships as an option. (Fürcht 2009) The new local governance system provided for an exceptionally high level of municipal autonomy and freedom in respect of making decisions (Jenei, Szalai 2002), thus orientating the state structure towards decentralisation as opposed to the traditional centralised model. *"Local governments are one of the principal areas of establishing a democratic institutional system and [...] implementing democracy"* (Gyulai 2000), which is confirmed by the European Charter of Local Self-Government.

In the system that was established, there was no hierarchical relationship between the local and the central level; local municipalities were autonomous legal entities with property and equal rights regardless of their size, which were free to form partnerships. (Jenei, Szalai 2002) (Straussman, Fábián 1994) (Goglio 2007) Since the right of local governance belonged to the level of settlements and was thus fragmented, a disintegrated system evolved instead of municipal integration; the *one settlement one local government* model had evolved. (Vigvári 2009a) (Fürcht 2009) (Bágert and Vigvári 2007) (Vigvári 2011a)

In parallel with this, the Act on local taxes created the possibility and the regulatory framework[52] for municipalities to levy local taxes (Lóránt 2008a). The unrestricted freedom the make decisions had already implied the possibility of financial imbalance from the beginning, including the possibility that development differences between settlements would increase. (Jókay et al. 2004), (Homolya-Szigel, 2008)

[51] Act No. CLXXXIX. of 2011 has provided a new basis for regulations regarding local governments. However, since in the period subject to my research, it was the 1990 Act and its amendments that were in force, in my paper I refer to the latter as Act on Local Governments.

[52] Act No. C. of 1990 on local taxes, on the basis of which, municipalities define the detailed rules of local taxation, determine the extent of taxes as well as exemptions and control the process of taxation; however, levying local taxes is not an obligation. Local taxes may be classified into three groups: taxes on property, communal taxes and local business tax.

4.2. The financial background of municipalities

4.2.1. Theoretical approaches to local taxes

After the legal sovereignty of municipalities had been created, Hungary had to develop a financial system that allows for the freedom of municipal management.

"It is an eternal verity that we can only talk about real municipal management if it is decided locally how much to spend on what." (Péteri 2005) The introduction of local taxes was justified by the requirement to establish a financial system of wide range which on one hand is based on the municipalities" own decisions, and, on the other hand, creates the connection between services provided by the municipality and the residents" needs. Already in the first studies on the regulatory context (Pitti, László, Pálné Kovács, Straussman), two basic groups of questions were outlined: firstly, how much freedom do the legal rules on municipal taxation provide; and secondly, to what extent can newly established municipalities take advantage of the possibility of local taxation, at what quality can they perform their administrative and technical functions related to taxation, how do the human resource and technical criteria of tax administration influence taxation?

In the period directly following the change of regime, the collection of tax revenues was not a simple task either for the central budget or in the case of municipalities. On one hand, the legal and administrative context of taxation – combined with political and economic dilemmas – had to be created; on the other hand, there were frequent cases of bankruptcy at companies and the quality of life depressed due to the unemployment and the decrease in social benefits. (Kornai 1992)

Numerous arguments were listed both pro and contra the introduction of local taxation: the need to create a replacement for missing resources and the implementation of different development programmes were arguments for introducing it; while numerous other factors[53] supported the postponement of the introduction of taxes. The transition to market economy was associated with a high level of unemployment and inflation and the social network had weakened; thus, it became essential to revive local communities.

[53] Altered life conditions of the residents, election promises, lack of technical skills.

(Straussman, Fábián 1994) According to the critics ((Pitti 1992) (László, Pálné Kovács 1993)), the introduction of local taxation was actually not a possibility but rather a must for municipalities since while levying the taxes was a possibility only, the performance of functions – determining costs at the local level – was a municipality"s obligation; and thus, expenses were shared by the central budget and the municipal subsystem.

However, at the time of the introduction of local taxation, it was already seen that *"areas with very small villages can take advantage of local taxation to a lesser and (economically stronger) areas with settlements of a bigger size to a larger extent"*, since it was primarily bigger settlements that profited from the benefits of the local business tax, while the standard deviation of the weight of tax revenues according to territorial location was significant. In this way, local taxes – the business tax in particular – differentiated the revenues of municipalities. (Pitti 1992) (Hetényi 2004), (Péteri 2008) in (Sevic et al. 2008) According to a rather unsurprising fact, in the revenue structure of smaller settlements, revenues from local taxes constituted a larger proportion than in the case of big cities. It is also remarkable that in the mid-2000s, the building tax was levied on houses with a lower degree of comfort typically located in villages instead of the more valuable stock of city apartments (Lóránt 2008a), since while in areas of greater industrial development the levy of taxes laying burdens on companies was an option for municipalities, in smaller settlements and those industrially less developed the local government usually laid the burden on the residents. The above are not uniformly evaluated in the literature, since according to the critical approach, *"the local taxation system is unable to efficiently deal with territorial disparities and social political problems"* (László, Pálné Kovács 1993); while the differences in the revenue structure were based on problems related to economies of scale. (Bird, Wallich, Péteri 1995) A piece of criticism regarding municipal taxation was that the introduction of local taxes had not been preceded by exploratory analysis, and local characteristics were not applied. (Pitti 1992)

Local business tax

The trend in the period between the introduction of local taxes in 1990 and the period covered by my research was that the number of types of local taxes and the tax rate continuously grew and own source revenues took over a predominant role in the revenue structure of municipalities. From among local taxes, the management of the local business

tax is of special relevance for my paper; on one hand because it represents a significant proportion of municipal own source revenues[54]; and on the other hand because it is typically concentrated in economically more developed areas. (Lóránt 2008a) At the same time, local business tax is sensitive to cyclical change; therefore, it brings about *"vulnerability of the sector"s own revenue potential"* (Vigvári 2009a), which is an important factor also in respect of borrowing[55] – in line with the necessity to provide for budgetary balance – from my research perspective.

Municipalities earned a high income on local business tax already in the early transition period; however, collecting the tax exceeded municipal administrative and control capacities. (Straussman, Fábián 1994), (Bird, Wallich, Péteri 1995) Local business tax indicates the imbalances in the country"s spatial structure; therefore, it has become the basis for calculating the indicator of municipal tax power capacity (Bende-Szabó, Gábor 2004) in (Horváth et al. 2004), (Lóránt 2008a); thus, as an indicator closely related to economic development, I put special focus on it in the empirical part of my research.

4.2.2. Municipal management in Hungary in the 1991-2000 period

The hierarchical order between municipalities ceased, while rules on resources were completed in full at the same time, and the economic conditions were established which ensured autonomous local community management[56]; on one hand, to perform the functions that are enumerated in legislation as mandatory tasks[57] of municipalities; on the other hand, to accomplish the functions that are performed by the municipality in line with local needs and performance capacities. Equal rights also emerged in respect of the delegation of authority and tasks, regardless of the size and administrative capacities of settlements. (Pálné Kovács 1997)

Municipal revenue structure underwent a significant change between 1990 and 2000: while own source revenues increased tenfold, shared revenues ninefold and grants from

[54] Nearly 80-85% of total local tax revenues. (Jenei, Szalai 2002), (Goglio 2007), (Vigvári 2009a)
[55] In the theoretical introduction of my thesis, I use the term *debt* to relate not only to actual borrowing but including the issuance of bonds, which is more typical in the Hungarian municipal system than applying for long-term loans taking into account that, in the case of the former, it is not required to perform a public procurement procedure, while, in the case of the latter, it is.
[56] At the same time, *"the role of the central budget to centralise and redistribute income was reconsidered"*. (Pitti 2003)
[57] Provision of healthy drinking water and sewerage, kindergarten education, elementary school education and training, basic health and social care, public lighting, maintenance of public roads and cemeteries and protection of the rights of national and ethnic minorities.

the central budget – calculated in nominal value – fourfold, normative grants barely doubled amidst frequent changes in the financial conditions. In this way, on the revenue side, own source revenues, i.e. local taxes and the sale of movable municipal assets became an essential factor. The number of municipalities levying local taxes as well as the amount of local tax revenues grew significantly due to the 2006 amendment[58] of the Act on local taxes and the increase of functions to be performed. (Lóránt 2008a) Loans did not play a considerable role in municipal finance – due to the high charges of interest –; thus, the level of indebtedness was not high. (Goglio 2007) Since *"more than four fifths of grants from the central budget were intended for operating purposes, and grants aimed at development represent only one fifth"* (Pitti 2003), municipalities either charged the realisation of developments to own source revenues – primarily – accumulated in the first two years of the political cycle or postponed them. (Kopányi, Vigvári 2003)

Municipal cost structure showed a different picture according to types of settlement: while in the case of counties and cities, the weight of personnel costs was above the average[59], capital investment costs had an above-average proportion in smaller settlements. Investments were typically aimed at developing public utilities, waste water management and modernising the public lighting system or the heating network. It was typical for all types of settlement that capital expenditure varied cyclically – in respect of the years preceding municipal elections –; and the proportion of debt service was inconsiderable. (Pitti 2003), (Kopányi, Vigvári 2003), (Vigvári 2009b)

The process of the evolution of municipal property can be divided into three main stages that are, however, not balanced in respect of their length – acquisition of goods[60], listing assets[61] and forming companies, and privatisation. The privatisation or involvement as collateral of unclaimed assets threw back the establishment of the managerial approach. (Péteri 2008) in (Sevic et al. 2008)

According to the results of a survey covering 14 countries[62] performed on behalf of the European Council, the importance of revenues from local taxes had gradually increased, which indicates the strengthening of decentralisation; however, due to the expanding

[58] The range of central exemptions was reduced and the applicable extent of taxes raised. (Lóránt 2008)
[59] Probably due to the fact that a significant proportion of public functions is performed by cities; and for this, adequate human resources are needed.
[60] I.e. the municipality gains possession of the assets.
[61] In Hungarian called: *"vagyontárgyak nevesítése"*.
[62] Including Hungary.

functions of municipalities, the importance of conditional grants financed from central resources had also increased. The study did not confirm the assumption that the settlements would not get resources necessary for the performance of new functions from the central budget; nevertheless, attention was drawn to the threat that an inappropriate selection of the indicators serving as basis for the compensation for additional functions leaded to an inaccurate distribution of resources, regardless of whether the grants are conditional or aimed at general purposes. (Lotz 2009)

Conditional compensatory grants often – though not exclusively – incur in relation to investment purposes. The study classifies Hungary as a country with a municipal financing system of a high level of conditional grants, which is justified by the support for a distribution of tasks promoting microregional cooperation and the performance of public services that are required to be provided for residents.

According to the study, the enhancement of local taxation in Hungary brought about an increase in decentralisation; however, the proportion of local taxes compared to municipal own source revenues is considered low. (Csipai, Vigvári 2009) A similar conclusion is drawn by László when assessing the experience of the twenty years following the regime change; according to whom, the local taxation policy of municipalities was determined by economic emergencies and not by development needs. (László, Szebényi 2010)

The right to municipal autonomy was enforced, local communities acquired property and resource-oriented regulations prevailed. Nevertheless, it can be considered as a drawback of the financing system that, focus being put on normative regulations, the regional approach became neglected; in addition, municipalities‟ interest in raising own source revenues did not increase. These factors did not encourage the development of settlements and the establishment of a consistent territorial policy which would have required a far-seeing attitude. (Pitti 2003) Even though, the legislation made it possible for municipalities to form partnerships, economies of scale were typically not achieved due to the lack of cooperation among settlements. (Jenei, Szalai 2002), (Pálné Kovács 2004) in (Kopányi, Wetzel, El 2004), (László, Szebényi 2010) Due to the small size[63] of settlements and the wide range of functions they were to perform, Hungarian municipalities often faced problems with economies of scale, which influenced the

[63] According to some empirical studies, the minimum requirement to achieve efficiency in terms of the number of residents is 5000. Fox, W.F. (2004) in (Kopányi, Wetzel, El 2004)

efficiency of public services (Bird, Wallich, Péteri 1995), (Péteri 2008) in (Sevic et al. 2008); however, Hungarian legislation made it possible to form municipal associations, and lifted the obligation to perform certain functions from the municipal to the county government level. (Goglio 2007)

Conclusions of domestic studies differ in respect of the independence and necessity of local taxation as well as of the freedom to make municipal decisions; nevertheless, they seem to agree that development costs were put aside and municipalities could not build connections between each of their functions and local taxes. (Pitti 1992) (László, Pálné Kovács 1993)

4.2.3. Municipal management in Hungary between 2000 and 2006

No significant change occurred in the revenue structure of municipal budgets, in the sense that the largest proportion of resources still came from the central budget.

Increasing the intensity of local taxation or significantly cutting back the costs would be rather unpopular measures; thus, they were hardly ever used. (Jenei, Szalai 2002) Municipal resource regulations were characterised by an intensive income centralisation, in which, state grants and contributions, and revenues left by the central government to municipalities continued to play a central role. (Kovács, 2005)

By the early 2000s, measures aimed at raising external funds[64] diminished, and the local taxation system was put to the limits of its performance capacities; since it became a carrier of disparities due to the different economic structure of certain regions in the country; moreover, an increasing focus was laid on the central qualification of tax capacity in regulations, which raised concerns both in the legal and the professional sense. The resource needs of public functions exceeded the local resources available; thus, in the mid-2000s, numerous studies were issued in the domestic literature that dealt with the municipal fundraising capacity. (Kusztosné Nyitrai, Barabás 1998), (Pitti 2003), (Vigvári 2005) (Halmosi 2005)

Domestic authors (Pálné Kovács 2008), (Pitti 2005), (Fürcht 2009), (Vigvári 2009a) agree that while the range of functions to be performed by municipalities gradually expanded, necessary resources were not or only partially available, which might lead to

[64] Possibilities for fundraising are discussed in Chapter 4.3 of the paper.

indebtedness. *"The de jure constitutional autonomy of municipalities has de facto largely been restricted by sectoral-technical regulations which – setting out perfectionist and impossible requirements – constantly encourage / force municipalities to infringe legislation."* (Állami Számvevőszék 2007)

Since economies of scale were not applied, and the general regulatory context provided for an extended freedom in municipal financial management; this necessarily led to an inefficient performance of tasks and a hardly sustainable system in the financial sense; thus, municipalities were forced to resort to additional resources.

4.2.3.1. At the doorway of EU accession

The period preceding EU accession was of crucial importance for municipalities. Community legislation affects them both in a direct and an indirect way; thus, due to the extent of the *aquis communitaire*, preparations for accession had to be started in due time, which included the review and revision of municipal regulations – as pieces of legislation – was necessary in order to ensure compliance with Community rules. (Barna 2003)

The state budgetary reform as well as the revision of the scope of municipal functions and authority, the improvement of regulations, available technical experience and altering the operation of municipalities were all considered as possibilities opened by EU accession. At the same time, the threats and risks implied by the requirement to provide for co-financing were also envisaged; accordingly, the Hungarian government had to prepare for co-financing, and municipalities for raising own contributions, which could only be achieved through multiannual financial planning (up to 2006) and commitment. Related proposals included the handling of current and capital expenditure in separate budgetary systems using multiannual budgetary planning instruments. (Goglio 2007) (Kovács 2007) Another threat mentioned was that municipalities might loose property as a consequence of careless borrowing.

As a possible approach to change – beside an overall reform of large care systems –, Pitti suggests to diminish the state"s redistribution function and central withdrawals, to extend local tax bases within certain limits, and to revise the scope of functions and authority and of the financing system and the establishment of the conditions of cost-efficient operations both at the central and at the municipal level. In is opinion, the amendment of the Act on Local Governments should serve as the basis for reconsidering the care service

functions of municipalities; in addition, the extent of resources related to the each function shall be guaranteed by legislation. (Pitti 2003), (Pitti 2005) in (Vigvári et al. 2005)

Providing the adequate conditions for operation is a basic criterion to be met in order to ensure that municipalities are able to provide the own contribution needed for the use of EU funds – either through borrowing or with guarantees granted by the state government –, and that the regional approach is enhanced at the same time. As a concrete proposal regarding financing techniques, Pitti suggests to increase the range and total amount of own source revenues in addition to the extension of local taxation rights and making local taxation practices transparent[65]. At the same time, he argued for the establishment of an interest-based regulatory practice aimed at modifying the ratio between tax burdens levied at the central and at the local level and at increasing the range of shared revenues, instead of normative state grants and those based on tax power capacity. (Pitti 2003) According to others, the decentralisation of the scope of authority increases the indebtedness of the municipal sector; and the crisis of municipalities is caused by the stern budgetary regulations and the poor fiscal policy applied at the local level. (Benczes, István 2003) in (Lenkei et al. 2003), (Pálné Kovács 2004) in (Kopányi, Wetzel, El 2004), (Davey, Péteri 2004), (Halmosi 2005)

Following Hungary‟s EU accession, structural fund resources were opened up for municipalities as beneficiaries. The possibility to modernise local infrastructure and, at the same time, the requirement to reduce costs – in order to implement structural reforms – imposed a complex set of challenges to the municipal sector, particularly in less developed areas of the country, where boosting development through investments was crucial – in order to decrease development disparities. To be able to draw down Community resources, municipalities in settlements needed to cooperate with each other as well as with the central budget. (Goglio 2007)

Cooperation at the *regional* level does not have historical roots in Hungary; before the regime change, both counties and settlements were more of a rival to each other than cooperating actors. (László, Szebényi 2010) (Jenei, Szalai 2002) Several foreign authors (Pickvance 2002), (Bennett 1997) point out that, after the regime change, local governments were typically underfinanced as compared to their extended functions; in

[65] I.e. the calculation method shall be made transparent and available for the public.

addition, due to the *one settlement one local government* model, economies of scale aspects could not be applied to the full, especially in the case of investments with large capital needs; and investments were dependent on external factors and resource opportunities, which on one hand led to the differentiation of resources, and on the other hand, it made the dependence of smaller municipalities from the central budget stronger. (Pickvance 2002) (László, Szebényi 2010) In order to ensure the efficient provision of public services, the reduction of administrative costs and the realisation of investments, cooperation between the small settlements and the large cities shall be enhanced: grants are in many cases conditional on a certain number of residents (Goglio 2007); while *"rejecting the pressure to form associations imposes a severe burden on the system."* (Vigvári 2009a)

Nevertheless, due to the financing deficiencies at regional level, municipalities typically did not stay in associations in the long term but rather for the implementation period of individual projects, and then they opted for the much more expensive but independent form of local governance. This goes counter to the EU approach which would require a transparent regional level development policy. (László, Szebényi 2010)

4.3. The processes of resorting to debt

Studies analysing the period following the regime change (Straussman, Fábián 1994) do not even mention borrowing as a possible way of raising funds, since at that time, privatisation revenues were included in own source revenues, which were made even more intensive by the economic pressure on municipalities; nevertheless, they draw attention to the threats implied by the rather loose regulations on municipal borrowing even though indebtedness was not typical yet. (Bird, Wallich, Péteri 1995)

Also in an international comparison did municipalities perform more and more public service functions in the early 2000s; as a consequence, current budgetary revenues were not sufficient any more to cover the expenditure needed for the investments. (Jenei, Szalai 2002), (László, Szebényi 2010) Budgetary balance could only be ensured through additional resources, which typically resulted in borrowing to finance the deficit in either the current or the capital budget. (Vigvári 2009a) On one hand, borrowing made it possible to keep the temporary (!) balance in local budgets; on the other hand, it had an

indirect impact on the central budget both in the period of borrowing and of servicing the debt.

4.3.1. Possibilities for raising funds

A threat implied by borrowing is that its benefits are immediately realised, while the burdens only emerge later. It can be considered as a moral risk that a municipality might launch an investment that is larger than its capacities[66], while the creditor does not prevent this, and both parties rely on state intervention in case the debt service is unpaid. (Kopányi, Vigvári 2003) (Vigvári 2009a) At the same time, municipal indebtedness raises regulatory dilemmas: enhanced control is needed to determine the extent of indebtedness between the different governmental levels. (Vigvári 2005)

For this reason, according to the so called *golden rule*, budgetary deficit should only be brought about by investment costs. I.e. *long-term loans* should not be sought only to cover current expenses because early consumption and borrowing is only acceptable in the case of investment costs, the concentrated resource needs of which would lay overly large burdens on the generation implementing the investment, or would prevent the investment from being realised. (Vigvári 2011a) (Gál 2010) On the other hand, under the term *investment costs*, we do not only mean the increase of the stock of tangible assets but human capital investments which are *"considered in statistics not as capital but as current expenditure"*. (Romhányi 2007) Regulations on municipal borrowing are rather diverse; in some countries it is forbidden, in others it is subject to authorisation, and in some it is conditional on meeting different parameters[67]. (Kopányi, Vigvári 2003) (Halmosi 2005) (Kassó 2006a) (Gál 2010) The case when a municipality borrows funds for liquidity purposes cannot be considered as deviation from the golden rule, since in some cases – e.g. due to regional disparities or structural difficulties – a municipality would go bankrupt without a liquidity loan. The *financial architecture* of domestic municipalities can be considered as *semi-firm* since it does not exclude financing the current deficit from capital revenues or loans (Vigvári 2009a), i.e. regulations – in force in the research period – do not enforce the application of the golden rule[68], and neither is

[66] Which, then, induces borrowing. (Vigvári 2005)

[67] Reallocation between the financing of current and capital expenses is not or only partially allowed, a loan rate allowing for prudent operation is determined, or the upper limit of borrowing is conditional on financial capacities; for a detailed comparison, see (Halmosi 2005).

[68] In the collection of theses of the State Audit Office (Állami Számvevőszék 2007), it is suggested to include the requirement of a balanced current budget for municipalities – i.e. the golden rule – in

the planning of current and investment expenses separated in the course of budgeting. On the other hand, keeping a balanced budget promotes efficiency since it prevents the harmful impacts brought about by deficit, and thus, by excessive borrowing (collapse of the budgetary balance, excessive interest burdens, insolvency).

Investment-related borrowing increases municipal independence (Vigvári 2005) (Vigvári 2011a) and makes it possible to realise investments that have previously been cancelled. In municipal budgets, loan appears as revenue charged with a later liability, which can be spent rather freely by the borrowing municipality; on the whole, a loan is an opportunity on one hand, and a threat on the other hand for municipal financial management. (Halmosi 2005) We shall not forget, however, that the efficiency of state / municipal intervention cannot be merely judged based on the change in the stock of property. The growth / decrease of property can be qualified *"in relation to the set of objectives adjusted to the current situation"* and is connected to the change in the extent of indebtedness and the change in the quality of public services. (Kassó 2006a)

In respect of the fundraising capacities of municipalities, we may differentiate two models. According to the *free market* model, municipalities as borrowers are not different from any other market actors[69], and there is no central commitment in respect of debt. The model assumes that the flow of information is adequately ensured and both creditors and borrowers behave in a rational way.[70] (Kopányi, Vigvári 2003) (Vigvári 2002), (Vigvári 2005) According to the *model distinguishing* municipalities, borrowing is subject to authorisation, i.e. there are control functions[71] existing behind the restrictions; however, central (state) guarantee is not automatic. (Kopányi, Vigvári 2003) Municipal economic independence is shown by the extent of regulations; i.e. the – non-automatic – guarantees undertaken by the central budget in case of non-payment of a municipality and how this decreases the creditors" risk. (Vigvári 2005) (Peterson 2000)

In Hungary, the difference between the two models is revealed in respect of regulations on one hand; on the other hand, we should note that a significant part of municipal

regulations; in addition, to take guarantees and supplier payables into account when calculating the stock of credit.

[69] I.e. borrowers behave in a rational way; economic actors are provided with adequate information.

[70] In the theoretical sense, the model is based on the Tibout model, presenting which can be omitted with respect to the research subject.

[71] Active functions: approval of borrowing by central government or residents; passive function: limiting the amount to be borrowed, supervising the use of loans.

revenues comes from the central budget – in the form of some kind of transfer. (Vigvári 2005) However, regardless of the model chosen and of regulations – due to the fact of borrowing – a credit risk exists, no matter what kind of economic actor the borrower is.

Risks of municipal borrowing are primarily related to moral risks. Firstly, the benefits of borrowing are conferred upon the body in power at the time of borrowing, while the burdens – especially in the case of major investments – are laid on the coming bodies[72]; in this way, the financial opportunities of later governments are restricted.

Secondly, there is a hazard that the municipality will not be able to adhere to the cash-flow plan needed to service the debt. (Vigvári 2005) (Kovács 2008a)

Parallels can be drawn between international trends and the situation in Hungary: municipalities must involve significant additional resources in order to realise investments since the public functions to be performed use up most of their revenues; thus, off-budget revenues play a significant part. (Vigvári 2005)

4.3.2. Fundraising and related regulations in Hungary

Meeting the investment needs accumulated by the mid-2000s became crucial in respect of attracting capital and investments in order to increase competitiveness. Funds had been opened with Hungary"s EU accession; however, there was a hazard that *"the co-financing requirement of EU funding available through applications would also mean that no resources would be left for developments ranked high on the municipality"s scale of preference, which were not supported"*. It should be considered as an advantage regarding municipal fundraising capacities that regulations were already existent for the cases of both borrowing and insolvency; moreover, municipal indebtedness was not typical yet in the mid-2000s. Nevertheless, in the case of a significant part of municipalities, there were no further possibilities to increase own source revenues, tax revenues and reserves; thus, it was necessary to involve the municipal sector in the money and capital market. (Kovács 2007), (Csiszárik 2008) At the same time, there was a hazard of careless borrowing by municipalities resulting in a loss of property – due to the enforcement of collateral agreements – and also that the liquidity risk in the sector would

[72] *"A financially unsustainable performance of functions and a borrowing policy that passes on current costs to the coming generations indicate the lack of prudence."* (Vigvári 2011a)

increase due to EU projects to be implemented using an *ex-post* financing logic. (Kopányi, Vigvári 2003)

In addition, significant investment needs – imposing severe additional burdens on municipalities – were accumulated in the Hungarian municipal system (Csiszárik 2008), (László, Szebényi 2010), causing additional operating costs on one hand; and on the other hand, meaning that the capital needs of investments could not or could only be limitedly financed from current revenues. (Bende-Szabó, Gábor 2004) in (Horváth et al. 2004), (Vigvári 2005) To finance the incurred investment needs from EU funds, in order to provide additionality, the proportion of investment expenses should be increased by 6 to 8 percentage points. Increasing own source revenues and borrowing were used as the principal tools for improving the absorption capacities. (Kopányi, Vigvári 2003) (Pitti 2003)

The results of modelling the municipal demand for loans showed that a political cyclicality was typical in municipal borrowing: while in the first two years of the cycle, municipalities set up reserves, in the second half of the cycle, investments were realised – typically using some loans – with indebtedness surging at the same time. (Báger and Vigvári, 2007) (Vigvári 2009a) Nevertheless, the sharp increase in municipal borrowing[73] dates back to 2005 only. (Vigvári 2005) (Vigvári 2009a) Research presenting similar trends can also be found in international literature; accordingly, the change in political leadership brings about a modification in the budgetary structure in order to gain the trust of electors, which might lead to municipal expenses exceeding revenues. (Pinkowski 2004)

Municipal borrowing in Hungary in the research period might be restricted – in the theoretical sense, *de jure*[74] in line with the model of regulated debt management – by the fact that the upper limit of the yearly commitments giving rise to debt of a municipality (borrowing and contributions, issuance of bonds, guarantees, leasing) was 70% of the corrected amount of current own source revenues.[75] However, in fact, this did not impose any actual restrictions on borrowing; municipal borrowing – and accordingly, the indebtedness of the sector – was primarily determined by the supply of banks. (Vigvári

[73] Including the issuance of bonds.
[74] *"Domestic regulations on municipal indebtedness are principally adjusted to the regulation-based approach."* (Gál 2010)
[75] The regulations are based on the version of the Act on Local Governments in force as of 1 January 1996.

2009a), (Jókay et al. 2004), (Homolya-Szigel, 2008) It is a conspicuous trend that, from 2006 already, *"the stock of long-term loans meant to cover operating expenses increased"*; moreover, many municipalities could only remain solvent through increasing the credit line of the current account and through obtaining liquidity loans, while the issuance of bonds was used to repay earlier debts. (Kovács 2007) (Kovács 2008b)

4.3.3. Assessment and risks of borrowing

When analysing the risks of borrowing, we should take into account that borrowing and the involvement of private capital might contribute to the extension of the development potential and to the distribution of burdens among generations, and also that investments increase municipal property. (Romhányi 2007), (Vigvári 2009a)

The stock of credit of municipalities increased significantly – almost doubled – between 2005 and 2008. 87% of the stock of debt accumulated comprised long-term liabilities, 63% of which was made up by bond issuance. (László, Szebényi 2010) According to a study on the composition of municipal revenues (Lóránt 2008a), bond issuance have had a predominant role from 2005 on; since, while in 2005, the municipal sector was characterised by bond issuance in an amount of HUF 4.5 billion, in 2007, this value amounted to HUF 180 billion.[76] Indebtedness of the municipal subsystem continued to increase in 2008 – both in terms of the number of municipalities issuing bonds and of the sum of bonds issued[77] – (Kovács 2008b), and through an accelerated resorting to debt, *"the local government sector became a carrier of increasing fiscal risks"*. (Vigvári 2009b) According to Lóránt – in line with the golden rule – the only way to avoid that the significant increase in bond issuance brings about financial problems in the long run is to use them for developments and not to finance operating expenses or substitute earlier loans.

In the process of Hungarian municipalities resorting to debt, a significant part is played by banks in the future. While earlier, banks typically qualified municipalities as "good debtors" and provided favourable decisions on municipal loan requests, in the period after 2010, it is questionable whether the market self-regulation mechanism intervenes; i.e. in

[76] Issued bonds were usually calculated with a principal repayment moratorium of 3 to 5 years and a maturity period of 15 to 18 years, and were mostly subscribed by organising banks. (Lóránt 2008), (Vigvári 2009a)

[77] Through subscribing the bonds, banks became *"dominant actors in providing liquidity"*; however, there is no secondary market of bonds. (Gál 2010)

case the supply of loans is reduced due to the increased credit risks, the sector‟s resorting to debt may decelerate; on the other hand, if the supply of loans is sustained and no strict rules are applied – partly due to the requirement of own contribution to be raised to use EU funds –, municipal indebtedness may increase. Borrowing risks may be reduced by the introduction of central controls which put limitations on borrowing taking different criteria – such as credit ceilings, determination of the maturity and purpose of loans – into account. (Vigvári 2009a)

According to Vigvári, municipal indebtedness is atypical (Vigvári 2009a), since loans acquired after 2006 are partly used by municipalities as reserves[78] (Homolya-Szigel 2008), (Kovács 2008a) (Vigvári 2009b) or for arbitrage transactions which produce interest revenues (Vigvári 2011a); however, a growing component of deficit is current deficit. Financial risks are based on a shortfall in funds[79], liquidity risks and a lack of creditworthiness. In the case of municipalities of smaller settlements, the fiscal risk usually appears as a shortfall in funds, which can usually be managed *"by the government using discretionary instruments"*; while the lack of liquidity can be managed with the help of credit institutions. Large cities, on the other hand, resorted to debt at an accelerated pace, primarily in the form of issuing bonds denominated in foreign currencies, which not only imposed long-term liabilities but also exchange risks on municipalities. (Vigvári 2010b) According to Vigvári, part of the bonds issued was used to cover the operating deficit, another part was accumulated as reserves – to be used for realising later investments –, and only a smaller part was actually used for investment purposes. (Vigvári 2009b), (Dankó and Lóránt, 2010) According to the study, *"the indebtedness process so far does not seem to be related to the absorption of EU funds"* and there is no direct relationship between approved projects and the issuance of bonds. (Vigvári 2009b) According to another study by Vigvári of the same year, municipalities issuing bonds *"could get independent from the central budget and partly from EU resources as well",* (Vigvári 2009a) and those issuing bonds typically did not apply for EU funds. Based on this argument, the golden rule does not or only applies in a restricted sense.

[78] deposit, government securities
[79] Shortfall in funds: inadequate budgetary resources are allocated for functions required by legislation; lack of creditworthiness: the municipality is unable to perform its voluntary tasks. (Vigvári 2009a)

In contrast with the above, studying the macroeconomic relationship between indebtedness and the use of EU funds, Banai came to the conclusion that the coefficient of determination between the level of state budgetary deficit and development expenses takes on a high value (0.8); i.e. *"the deficit level is fundamentally affected by the level of additionality expenses"*. (Banai 2008) In their study[80] providing an overall analysis of the risks of municipal borrowing taking the bank perspective into account, Homolya and Szigel partly confirm Vigvári"s theory on atypical municipal indebtedness. The studies agree that indebtedness concerns a relatively small group and that borrowing was primarily aimed at reserve purposes, without any actual financing needs. While Vigvári states that municipalities did not borrow for investment purposes; according to Homolya and Szigel, *"the change in indebtedness did not show any relationship to the increase of the operating expenses of each municipality"*, and *"municipal investments were not boosted by EU funds; thus, we can conclude that EU funded projects did not create an additional financing need for municipalities, as compared to earlier"*. (Homolya-Szigel, 2008)

Between 2007 and 2008, there was a surge in the stock of credit, while the sector"s level of indebtedness was still relatively low as compared to Western European countries; however, there were several reasons for which, risks were implied: the typical currency of loans acquired was Swiss Franc while of deposits was HUF[81]; thus, the municipality was in an open currency position (Homolya-Szigel, 2008); and on the other hand, there was an illusion of money abundance. (Vigvári 2010b) The spread of bond issuance is not only because it is not subject to public procurement but also because, while bank loans are typically related to investment projects, in the case of bonds, no definite purpose shall be defined; thus, they van be used more freely. (Csiszárik 2008)

The study assesses the risks not only from the debtor"s but also from the creditor"s perspective. Based on an estimation by the banks, 10 to 30% of loans are aimed at operating purposes; risks are implied by the lack of transparency of the sector"s financing and planning difficulties of future flows of money; however – according to survey results

[80] The study also discusses the liabilities related to the indebtedness of companies with a municipality as the majority shareholder. To this topic, see also: Hegedűs József-Tönkő Andrea (2006): *The role of companies owned by municipalities in municipal wealth management: conditional commitments* in (Vigvári et al. 2007)

[81] For arbitrage transactions, it seemed reasonable to invest in deposits in HUF that would yield high interests.

–, banks keep financing the municipal sector relying on the continuity of the operation of municipalities (and in this way, on a continuous cash-flow). (Homolya-Szigel, 2008) *"In the case of borrowing, creditors regard municipal tax revenues as one of the most important guarantees of repayment."* (Vigvári 2011a)

As a consequence of the above, the following questions arise. What did cause the surge in borrowing if it can neither be connected with investments, nor with operating costs? To what extent can borrowing be regarded as rational behaviour on the part of a municipality if no actual financing needs are underlying it? How does this behaviour match with the golden rule? Can it be connected to the fact that the funds available for use by Hungary will surge in the 2007-2013 programming period as compared to the previous programming period, and this raises additionality needs?

The nine cases in the below table present what impacts can be brought about by the change in capital expenditure on indebtedness if we assume that indebtedness is not influenced by the primary budgetary deficit, i.e. the operating budget is balanced.

Property	**Indebtedness**	**Impact**	**Financing of capital expenditure**	**Financing of public services**	**Applicability of the golden rule of borrowing**
unchanged	unchanged	equilibrium	Property is maintained and public services financed from current expenditure.		–
	increases	resorting to debt	Property is not maintained from current expenditure but from loans and / or	excessive amounts are spent on public services.	does not apply
	decreases	stabilisation	Property is maintained from current expenditure	against public services.	–
increases	unchanged	development	Investments are financed from current expenditure	against public services.	–
	increases	resorting to debt	Investments are financed from loans and / or	excessive amounts are spent on public services.	needs to be investigated

Property	Indebtedness	Impact	Financing of capital expenditure	Financing of public services	Applicability of the golden rule of borrowing
increases	decreases	stabilisation	Investments are realised from current expenditure	against public services.	–
decreases	unchanged	gradual worsening	Property is not maintained from any resources.	Public services stay at the level they were.	–
	increases	impoverishment		The amount spent on public services is financed from loans.	does not apply
	decreases	stabilisation		Public services stay at the level they were or decrease.	–

Table by the Author

The process of municipalities resorting to debt is undisputable (Vigvári 2009a), (Homolya-Szigel, 2008); however, it is questioned whether the increase of indebtedness entails an increase in property, and whether indebtedness is in any kind of relationship with the use of EU funds.

None of the basic cases presented in the table should be considered as to be rejected or to be followed; however, they can be assessed in respect of the golden rule.

4.3.4. Criticism concerning the regulations on municipal resources

Many domestic and foreign studies have dealt with the economic management, resource regulations, and operation of municipalities as well as with the amendments to the related regulatory context.

No differentiation between the scope of functions and authority of the different types of settlements was done; which resulted in the weakening of the medium level and, at the same time, the municipal system working as a *"container of conflicts"* due to *"the excessive constitutional independence of local authorities, the intensive decentralisation of public functions, and the confusion between the different frameworks set up for the right to local governance, local public administration and the performance of local public functions"*. (Vigvári 2009a) (Vigvári 2009b) (Báger and Vigvári, 2007) This impact was made even more intensive by the fact that the municipal budgetary structure moved along together with the central budget due to the system of normative grants;

according to some authors – in an economic sense –, the dependent relationship between the central and the local level continued to exist. (Straussman, Fábián 1994), (Goglio 2007), (Fürcht 2009), (László, Szebényi 2010)

In other words, the criticism is not primarily related to the financing method but to the fact that some of the social functions previously managed centrally were to be performed by local municipalities. While sovereignty was ensured in the legal sense, *"municipal economic dependence became more and more intensive in the material and economic sense"*. In this respect, local taxation was an economic must, and the right to levy taxes did not provide actual independence. This is also supported by the fact that municipalities applied taxes that were in line with social tolerance and that taxes were based on natural – that is, hardly disputable – indicators; in addition, revenues from selling property played a significant role. (László, Pálné Kovács 1993) (Straussman, Fábián 1994)

According to critics (László, Szebényi 2010), (Pálné Kovács 2004) in (Kopányi, Wetzel, El 2004), (Pitti 2005), the distribution of functions between the central government and local municipalities and the set of related resources is still not clear twenty years after the regime change, which affects the economic situation of municipalities. While the Act on Local Governments defines local level functions taking the needs and financial possibilities of local residents into account, numerous sectoral regulations set up functions to be performed by municipalities.

According to Lóránt, the trend typical since the regime change is that there is a decentralisation of functions between the central level and local municipalities, which reduces the local councils‟ freedom to make actual budgetary decisions even if the proportion of local taxes have gradually increased in the municipal budgetary structure. (Lóránt 2008a)

In respect of the improvement of regulatory mechanisms, alternative solutions were elaborated by (Kopányi, Vigvári 2003), (Pitti 2005), (Kassó 2006b), (Kassó 2006a), (Vigvári 2005), (Romhányi 2007), (Vigvári 2009a) (Nagy 2002) as part of the planned reform of public administration – to manage revealed risks – in the mid-2000s in order to establish the financial stability and improve the borrowing capacities of the municipal sector. Beyond plannability, the update of planning practices, the controllability of

budgetary items[82] and economies of scale aspects, the proposal regarding the regulation of primary and secondary securities in order to reduce credit risks was raised; moreover, it was suggested to possibly include passive control functions (differentiation of the borrowing limit, municipal debt register).

In order to increase fundraising capacities, proposals providing for a prudent operation of municipalities were raised, which were based firstly on the reform of the reporting system, and accordingly, on providing information to creditors; on the application of function-financed and zero-based budgeting; secondly, on the introduction of controlling functions; and thirdly, on establishing a transparent and centrally managed municipal debt register promoting the assessment of the creditworthiness of each municipality.[83] The above proposals are aimed at increasing municipal fundraising capacities on one hand; and on the other hand, at laying the basis for sound financial management through reconsidering the distribution of tasks between governmental levels, setting up a differentiated scope of functions and authority, and reorganising the financing system. (Kopányi, Vigvári 2003), (Halmosi 2005), (Pitti 2005) in (Vigvári et al. 2005), (Kassó 2006b), (Kassó 2006a), (Goglio 2007), (Péteri 2008) in (Sevic et al. 2008), (Kovács 2008b), (Vigvári 2009a), (Vigvári 2009b)

The Hungarian State Audit Office have dealt with the problems raised in connection with the regulations on public finance in several studies, partly building on practical audit experience, and partly on research results. The study *"Theses of the regulations on public finance"* and another paper *"State reform, public finance reform – International trends and domestic challenges"* serving as scientific substantiation for the former demonstrate the concept of an overall modernisation in public finance, partly drawing up the establishment of an institutional system supporting budgetary discipline. It goes back to the fact that in the period following the regime change, legislators could not pay attention to *"establishing the mechanisms providing for effectiveness and transparency of the public sector"* (Báger and Vigvári 2007); therefore, a comprehensive regulatory renewal is needed. According to the theses, new regulations shall be aimed at *"finding technical solutions which will make public financial management more transparent, more*

[82] This can be assessed from at least three aspects: the institutional decision level, the nature of risk factors and the minimum time required to eliminate the item. (Romhányi 2007)
[83] An example for this is the possibility of voluntary credit rating for – primarily larger – municipalities.

predictable and more efficient both at the level of the national economy and at the municipal and institutional level". (Állami Számvevőszék 2007)

Beside the presentation of the principles of the new regulatory framework, the need for stable and transparent regulations on relationships between the central and the local level as well as budgetary balance as a basic requirement of sustainable development is expressed in the theses. Reforming regulations is not sufficient for an overall reform of the system; it is also necessary to define quantifiable objectives and establish the institutional consistency of financial planning through the establishment of a *"comprehensive, modern, well-coordinated planning system for the national economy"*. (Kovács 2009b)

We can approach to municipal reform from the aspects of the reallocation of functions between the central and the local level (allocation of functions, service organisation methods), and of the amendment of the financial context, i.e. from the aspects of centralisation-decentralisation-economies of scale. (Báger and Vigvári 2007) It is considered a progressive approach that the study makes suggestions regarding the maintenance of municipal financial balance and medium-term planning as well.

4.3.5. Present-day changes in the regulatory context

Due to the limits of the research period, present-day processes and the implementation of the overall public finance reform are not subject to my paper; nevertheless, I consider it justified to present at least a non exhaustive outline[84] of the regulatory changes that make up the regulatory context of Hungarian municipalities today, taking indebtedness processes into account.

Due to the extensive autonomy of municipalities, until 2010, the state did not practically apply any instruments to impose limitations on voluntary functions, financial management or undertakings of municipalities. In the context of the global economic crisis and in order to avoid further indebtedness, the Fundamental Law of Hungary provides clear regulations in this respect: on one hand, the Parliament shall not adopt a state budget act that would allow state debt to exceed 50% of GDP; and on the other hand, as long as the above indicator exceeds 50%, only state budget acts containing the

[84] In my present paper, I do not aim at an overall assessment of legal regulations introduced in 2010 and 2012, sine this would go beyond the limits of my thesis; and on the other hand, the impacts of the legislative changes cannot or can only limitedly be assessed yet – due to the shortness of the time that has elapsed.

reduction of state debt[85] may be adopted. (Fundamental Law of Hungary, Article 36) At this point, we shall highlight the role of the Fiscal Council which is a body that supports the activity of the Parliament and investigates whether the budget is substantiated. It is a right and function of the Fiscal Council laid down in the Fundamental Law to control whether rules on state debt are complied with, for which purpose, a preliminary agreement of the Fiscal Council[86] is needed before the central budget could be approved.

Beside the indebtedness of the central government and of other governmental bodies, municipal indebtedness is also involved when calculating the state debt; accordingly, maintaining municipal financial stability as well as establishing a transparent economic environment and financial system is a national economic objective.

Due to the principle of municipal independence, the strict provisions of the Fundamental Law on state debt and to the changes in public law functions, rules of municipal financial management are laid down in a series of cardinal acts.

In accordance with the Act on economic stability, indebtedness is conditional on preliminary agreement by the government both in the central and in the municipal sector in order to make sure that government control over state debt reduction is applied; however, it is possible to make commitments necessary to provide the own contribution and pre-financing for EU projects without an approval by the government. In order to avoid further municipal indebtedness, rules were made stricter: on one hand, only liquid loans may be obtained to cover operating expenses and no operating deficit shall be planned; and on the other hand, the upper limit of financial obligations to be paid as debt service shall not exceed 50% of own source revenues throughout the entire life of each transaction.[87]

The new act on local governments and also the act on public finance promote the establishment of transparent financial management. While the act on local governments

[85] Deviation from these provisions are possible if there is a significant and enduring national economic recession, to the extent required for redressing the balance of the national economy. According to the Act on economic stability, we can talk about a significant and enduring recession if the GDP is negative.

[86] In order to eliminate the excessive budgetary deficit in Hungary, the European Council suggested to extend the scope of authority of the Fiscal Council in respect of analysing the situation (Európai Tanács, 2012), Accessed: 1 August 2012. Available at: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2012:0104:FIN:HU:HTML

[87] The active and passive control of municipal borrowing (Gál 2010) also appears in the regulations; since on one hand, borrowing is conditional on preliminary government agreement; and on the other hand, the maximum amount of loans is also determined.

regulates central and local resources[88] as well as the basis for the distribution of functions and the scope of authority in a differentiated manner, in accordance with local performance capacities, the act on public finance and its implementing decree contains specifications promoting transparency and regularity.[89]

4.4. Application of the additionality principle in other member states

In East-Central Europe, it is often the municipalities most in need of EU development assistance that find it difficult to raise the own contribution needed to use EU funds, as it is already presented in Chapter 2.3. Even if own resources of a municipality are not sufficient for this purpose, it can choose from a variety of fundraising options; however, these instruments may differ in respect of their price as well as of the extent of benefits. Municipalities are often discouraged from the most obvious solution, i.e. from obtaining a bank loan, by the threat of indebtedness. In this section of my paper, I assess the resources available for municipalities – together with their benefits and drawbacks.

East-Central European countries – including Hungary – can be generally characterised by a shift towards the application of Western European standards also in respect of local public administration, in line with the transition process and the fulfilment of the Copenhagen criterion. A summary of these local administration-related principles is provided by the European Charter of Local Self-Government established under the auspices of the Council of Europe, the contents of which are summed up in previous chapters of the present thesis. Nevertheless, when analysing additionality, we have to refer back to the fact that the Charter clearly sets out the requirement of decentralisation of functions and responsibilities, in line with the subsidiarity principle. In practice, however, this kind of decentralisation is not always followed by the delegation of power or resources to the lower levels of public administration. As a consequence, most East-Central European municipalities face the problem that – in line with the legislation in force – their budget largely depends on state transfers. (Council of Europe 1985; Bilan 2008; Oplotnik 2007) In the worst case, the lack of local financial autonomy is accompanied by a lack of budgetary discipline: systems where the collection of taxes is mostly a central government function, while municipalities only have to spend money

[88] based on function financing

[89] An example is that the revenues and expenses of budgetary organisations governed by a local government shall be included in the municipal budget in a breakdown by appropriations; or that obligatory and voluntary functions shall appear under separate parts in the budget.

often end up in a subnational debt crisis, the consequences of which will be discussed later. (Blankart 2006)

Regular sources of revenue available for municipalities are the same in most East-Central European countries as in Hungary; i.e. they can generally be classified into two or three categories. We shall distinguish between own resources collected under sovereign municipal authority and transfers from the central budget; and in many countries – such as in Hungary – there is a third group of *"revenues shared or left by the central government to municipalities",* which are either collected by the local governments or by the central administration and are then shared between the two administrational levels. (Municipum Magyarország Alapítvány 2003; Bilan 2008)

In practice – both in Hungary and elsewhere –, *borrowing* as an extraordinary source of revenue is often added to the revenue categories listed above. (Oplotnik 2007; Bilan 2008) In the East-Central European practice, municipalities only resort to this instrument in a pinch because they are rather cautious due to the threat of indebtedness. However, some financial experts point out that the consistent rejection of borrowing is not always the most effective policy. Although it is true that financing the operating expenses of a municipality from loans implies serious risks, loans are particularly suitable for covering certain other types of expenses – primarily infrastructural and other investments.

Investments realised with borrowing may seem an even more attractive option if we consider the criteria for the use of available EU assistance as an alternative; specifically, the requirements of co-financing and *ex post* financing, which reduce the investment potential of a municipality to the resources actually available at a given moment. (Dafflon 2009) In East-Central European practice, we even find examples when a local municipality borrows precisely in order to receive EU funds – i.e. to provide for co-financing –, hoping that it will be able to service the debt from the return of the leverage effect stemming from the investment. (Oplotnik 2007) Whether a given municipality opts for the one or the other option in its development policy always depends on its individual decisions; in the present paper, my purpose is to draw attention to the importance of a responsible budgetary and economic policy; which, however, can only be achieved with transparent regulations making clear distinctions between responsibilities of the different levels of public administration. (Blankart 2006)

Knowing the values of the resources listed above, we may set up numerous indicators to give us a picture of the budgetary situation of a given municipality, either looking at it from the revenue or from the expense side. The most frequently used are the indicators which compare one of the above categories (e.g. state transfers or local public revenues) to some cumulated value (e.g. total state revenues or even GDP). We get interesting results if we examine the proportion of own resources to total local revenues, the value of which expressed in terms of percentages is referred to as the *level of local financial autonomy*. In Europe, this indicator reaches its highest value in the Scandinavian welfare states: in some countries it exceeds four fifths of the total revenues. (Rusu 2008; Municipum Magyarország Alapítvány 2003) In Hungary, right before EU accession, the two main categories (own source revenues and central transfers) almost had an equal share (42 and 43% respectively) within the municipal budget. (Kovács 2004) However, not all states in the East-Central European area can boast about results so close to Western norms.

Municipalities in Romania, for instance, are largely dependent on the state both in respect of budget and of political decision making; whereas in Estonia as a former Soviet republic, the issue of municipal independence also raises difficulties. (Tabără 2010; Tatar 2010)

4.5. Criticism on the reporting system and accounting settlements in the EU funding process

4.5.1. Criticism on the information content of municipal reports

Studies urging a reform of the system of municipal financial reporting already appeared in domestic literature in the mid-2000s. These studies dealt with the relationships between the lack of information needed for making decisions and the accounting systems; according to them, the financial reporting system of the sector should be regulated in the act on public finance instead of the act on accounting in a way to establish a partly accrual based reporting system in order to make financial management as well as processes related to wealth and finance more transparent; and thus to make it simpler to assess creditworthiness. (Kopányi, Vigvári 2003) (Vigvári 2005)

In parallel to analysing indebtedness processes, Vigvári (Vigvári 2009b) (Vigvári 2011b) made proposals for the management of municipal financial risks, one of which is the

modernisation of the information system. As a critical remark regarding the reporting system, he pointed out that reports do not allow for a review of the financial state of the sector, the records are not transparent and are not suitable for measuring the financial impacts of decisions, the burdens implied by investments cannot be identified, and that the maintenance of the information system is costly; therefore, he proposed to introduce accrual based accounting. (Vigvári 2009b) Jókay also demonstrated the deficiencies of the cash flow based accounting approach (Jókay et al. 2004), when he was examining cases of municipal bankruptcy and drew the conclusion that the cash flow based accounting approach does not calculate with burdens implied by future repayments.

Although it cannot be considered as criticism regarding the reporting system, Homolya and Szigel draw the attention to information deficiencies in their study (Homolya-Szigel, 2008), pointing out that a complete set of data regarding future commitments of municipalities is not available, which makes it impossible to assess their actual financial position. According to Kassó, *"institutions put a considerable amount of money and effort"* in meeting reporting requirements; i.e. a vast amount of information is created with the reports. Accordingly, comparison and assessment do not depend on the accounting system but on the clear definition of objectives. (Kassó 2006a)

In the collection of theses of the State Audit Office (Állami Számvevőszék 2007), the accounting and reporting system is criticised: on one hand, because items not included in budgetary financial management[90] and future commitments typically do not appear in accounting records, which contradicts to the principle of completeness and hinders making important decisions; and on the other hand because the excessively detailed data make it impossible to have a full picture on the actual financial state.[91]

(Goglio 2007) made rather sharp criticism regarding the budgetary and reporting rules in the Hungarian municipal system; pointing out that the elaboration of the budget was more of a legal task and not of *budgeting* nature, and because of that, the determination of medium- and long-term objectives was neglected and no differentiation was made in the budget between operating and investment costs. The lack of resources at the local level led to a situation where municipalities only undertook the implementation of projects

[90] e.g. data on the commitments made by companies owned by local municipalities
[91] *"This is the current situation; it is presented in a way that one finds it hard see the forest for the trees."* (Állami Számvevőszék 2007) Vigvári draws attention to the same anomaly. (Vigvári 2010)

which were partly financed from some kind of – typically EU – assistance. (László, Szebényi 2010) Therefore, the study promoted the introduction of multiannual budgetary planning instead of the extended budgetary documentation of rather low information content.

4.5.2. The voting unit theory

Kassó (Kassó 2006b) (Kassó 2006a) approaches to the reform of public budgetary accounting from the exercise of power and governance perspective. She defines a voting unit as *"the decision on the commitment to perform a function, to which, the text of objectives and expected results can be assigned, while on the financial side, the cost ceiling that could be spent for implementation is determined"*; i.e. the fulfilment of a task set out in the budget act is mandatory within the appropriation defined. Accordingly, she proposed to introduce performance based budgeting which may be the basis for a reform of the accounting system.

In her approach, the accounting system should be suitable tool for the Parliament and tax payers to call the government to account. This can only be achieved if the accounting system does not only demonstrate revenues and the money spent, but also *"those commitments and long-term liabilities which have been legally undertaken by governments but which are not present yet in the cash flow of the accounting period concerned"*. She considers the requirements regarding the accounting system as an *information base*[92] which is considerably broader than the comparison of planned and actual data. Accordingly, the accounting system should handle transactions so that it is ensured that each event occurring in connection with a given voting unit appears in the records in a way to allow for the comparison and control of used resources also in a natural sense. This is based on the idea that when approving the budget act, the Parliament opens a possibility for the public administration to spend money, with the purpose that it will perform the functions it is obliged to. In this way, reporting according to voting units cannot merely rely on information from the accounting system; while accounting would get an assessment function. In Kassó‟s interpretation, the accounting system supports budgetary planning and provides information for decision makers, going beyond processing events in a closed system and the comparison of data. (Kassó 2006a)

[92] In parallel to this – in accordance with what Vigvári says – she points out that generating the reports and accounting data is rather expensive, while the information available – a heap of data actually – is a bit "chaotic". (Kassó 2006a; 2006b)

The underfinanced and lavish operation of the public sector is caused on one hand by the lack of a strategic approach, the cost management culture, the lack of consideration for cost efficiency aspects and the lack of the separation of technical and financial planning; and on the other hand, by the fact that *"the accounting and the information system do not support preparations for a decision; and thus, the government has to govern lacking objective information"*. Changing the accounting system is not a solution on its own; we should look at the financial reporting system of public finance in a complex way. Thus, the reform of the public finance reporting system cannot be considered on its own: the first step of revising it would be setting up a new regulatory framework for public finance, establishing an approach focusing on public services and creating a common institutional system linking the budgetary, the planning and the accounting dimensions. (Kassó 2006b), (Kassó 2006a) This argument is confirmed by the collection of theses of the State Audit Office (Állami Számvevőszék 2007), pointing out that well established information systems are needed in order to reveal the risks in off-balance-sheet items and to promote transparency.

The public finance accounting and reporting system primarily demonstrates whether appropriations are complied with, the actual flow of planned revenues and expenses and the change in public property. While the gain or loss of property and effectiveness are indicators related to the activity of companies, the benefits and results of the operation of public administration cannot be interpreted using numerical indicators exclusively; results *"can be revealed in changes affecting"* the society and *"economy as a whole"*. A proportion of public funds does not materialize as property, since it is reproduced in every period through the state providing public services from revenues; moreover, some budgetary items are used for human resource development, which has a significant impact on economic growth but is not realized as an asset. (Franco, Balassone, Francese 2003), (Kassó 2006b)

In the public finance theses of the State Audit Office (Állami Számvevőszék 2007) (Báger and Vigvári, 2007) the need for a reform of state accounting is proclaimed – as part of the comprehensive public finance regulations – as the transparency of the use of the budget and public funds could (also) be ensured through records kept using the accrual based approach beside the cash flow based approach. In the study – partly on the basis of the voting unit theory but going beyond it – (partly) accrual based public finance

accounting is regarded as an efficient tool of clarity (meaning the determination of actual costs, accrual based approach)[93] and the transparency of public finance; however, due to the difficulties encountered when introducing it in practice, no proposal is made for its immediate introduction but for the initiation of discussions with experts and for the mapping of the options for modifying the accounting system[94]. This is in line with the thesis"s concept, according to which, state accounting should not focus on the accounting content in the narrow sense but incorporate public financial management as an information base.

Authors agree that the reform of the information system – i.e. not of the accounting-reporting system in the narrow sense – is a crucial issue at all fields of budgetary financial management; therefore, in order to measure costs and performance, a shift from the cash flow based to the accrual based approach is needed. (Győrffi et al. 2009)

4.6. Account settlement of EU funds

The empirical data I intend to use in my research are partly coming from municipal reports and partly from the records of the National Development Agency; therefore, I take an overview of the domestic regulations on the account settlement of EU fund in order to allow for an adequate understanding later.

The accounting regulations were developed in line with the financial mechanisms related to each fund. (Lilliné Fecz 2004) I confine the presentation of account settlement to the examination of operational programmes of the National Development Plan[95] – as it is required by my research subject.

We saw already when the financial processes were presented that the three main levels of managing the funds can be clearly distinguished from each other. Also in the accounting

[93] In order to comply with the principle of completeness, off-balance-sheet items should be presented in reports; in addition, consolidation in the accounting sense should be applied e.g. in respect of a municipality and a company owned by it.

[94] e.g. preliminary cost-benefit analysis in respect of the options for introducing the new system and mapping the human resource and time needs of introduction

[95] Due to the volume of assistance and to the different regulations, pre-accession instruments (PHARE, SAPARD and Transition Facility), Community initiatives, Cohesion Fund projects and operational programmes of the New Hungary Development Plan are not involved in my assessment on accounting processes.

sense, we have to differentiate between beneficiary level (1), the national level of fund management through the central budget (2) and the settlement of accounts with the European Union (3).

Reporting on the use of EU funds shall be done not only towards domestic stakeholders but also towards the European Commission; thus, the accounting requirement emerges in two directions throughout the entire process: on one hand, it has to meet the information needs of the central budget, and on the other hand, those of the European Commission.

The two recording systems use different approaches. While budgetary planning and the information system of the State Treasury requires carrying out accounting and reporting in a modified performance based approach for the provision of data in the member state; towards the European Commission, accrual based accounting and reporting criteria shall be met (Lilliné Fecz 2004), which implies that the data in the two recording systems kept in two different approaches shall be matched.

Keeping the records in two separated systems necessarily brings about additional work, to support which, I present an outline of the basic connections and the Hungarian legislative context of both the modified performance based and the accrual based records for comparative purposes in order to demonstrate at how many stakeholders and in what forms the recording of each economic event appears in a relatively simple but multilevel funding system.

4.6.1. Recording funds in an accrual based approach

As it is required by the European Commission, the flow of funds shall be followed from the member state transfer to the beneficiary level, one of the possible instruments of which is to support it with accounting records.[96] Accordingly, the primary stakeholder[97] here is the European Commission whose information needs (annual provision of data and annual financial reports) can be met if accounting data is kept in an accrual based approach.

[96] Detailed regulations are set up under each member state"s authority – in Hungary in the 2004-2006 programming period, these were laid down in Gov. Decrees No. 233/2003. (XII. 16.) and 360/2004. (XII. 26.) and Information Notes No. 8017/2005., 8018/2005., 8008/2007. and 8009/2007 of the Minister of Finance.

[97] For a summary overview of stakeholder theories, see (Baricz, Budapesti Közgazdaságtudományi Egyetem 1999).

In the 2004-2006 programming period, Hungary fulfilled its reporting and data provision obligations through accounting records on one hand; and on the other hand, through the financial information kept in the Unified Monitoring Information System (UMIS). The accrual based separated accounting records system related to EU funds was developed and operated by the paying authority, separately from the records related to its own operation[98].

The purpose of keeping accrual based accounting records was, on one hand, to meet the data provision requirements towards the European Commission, and on the other hand, to provide a reliable and true picture on the implementation of co-financed projects and an audit trail.

Accounting records are not a separate system but and integral part of UMIS; however, while the other modules collect data related to the project lifecycle (contracting, received invoices, control activity, etc.), the accounting module follows up the actually approved and transferred funds as well as recoveries and their financial execution in a closed system.

In Chapter 3 of my paper and in the related Annex No. 6, I presented the financial process in details; concluding that the institutional system of the funds is rather complex; however – disregarding the case when the beneficiary is one of these institutions – the funds flow through the intermediary system, and are realised at the beneficiary. The accounting records applied were set up in line with the principles of the Hungarian act on accounting, using an accrual based double-entry bookkeeping approach. Accounting was carried out on balance sheet accounts and accrual accounts; however, taking the logic of the funding system into account, the accounting records related to the settlement of funds contain four sections[99] only. While the operations related to Sections 3 and 4 are completely in accordance with the financial process and reflect some kind of cash flow based approach,

[98] Accordingly, data kept in the accounting records for EU funds were not mixed with accounting records of the Ministry of Finance as a budget chapter.

[99] Section 3) liabilities and liquid assets; Section 4) liabilities, accrued expenses and deferred income; Section 8) expenses, records of use of funds shown under expenses; and Section 9) income, subsidies accounted for as income and settlement of recoverable amounts. [according to the act on accounting]

the inclusion of accrued expenses and deferred income[100] and the system of the management of extraordinary expenses and income refer to an accrual based approach.

In order to ensure that the accounting records kept in different approaches (cash flow based vs. accrual based approach) correspond to each other, data was regularly matched, as part of which – inter alia – the accounting of all transactions on transaction accounts was reviewed in both recording systems, and the income records kept by measures on the transfer of EU funds to the state budget was compared to the accrual based accounting records kept by the paying authority.

4.6.2. Recording funds in the modified performance based approach

In order to allow for the transparency of the payment of funds, the accounting settlement and reporting system was drawn up in a way to allow for a detailed observation of funds. Accordingly, in the case of the structural funds, *"the public administrative body paying out the assistance has to meet its reporting obligations as well as settle the funds in the ledger account in a breakdown by measures within priorities of each operational programme"* (Lilliné Fecz 2004) Transparency is further provided by the chart of accounts included in Annex 9 of Gov. Decree No. 249/2000. (XII. 24.) that is mandatory to be used, and based on which, the separate handling of each assistance programme is ensured in the accounting system.

Account settlement of EU financial instruments of financing organisations

In the course of the implementation of National Development Plan operational programmes,[101] it was required by national legislation that the use of appropriations related to EU funds shall be settled in all cases through a transfer of financial instruments, which brought about an accumulation of income and expenses during the year. Accounting records are necessarily in compliance with the budget act since *"project owners shall separately settle and keep a record of the impact of cash-flow-related economic events connected with EU Community assistance and related national resources (central budgetary grants) from among its chapter-managed appropriations, in*

[100] The accounting system established handled amounts already transferred by the European Commission but not retransferred yet to the institutional system managing the funds as accrued expenses / deferred income.
[101] Based on Article 46 (6)(d) of Gov. Decree No. 217/1998. (XII. 30.) in force in the start-up phase of the National Development Plan.

line with the breakdown by chapter-managed appropriations approved as part of the budget act, both in the ledger and in the analytic records". (Lilliné Fecz 2004)

The financial processes set up and the related accounting procedures ensure that the resource owner as well as the managing authorities and intermediate bodies can handle priorities within each operational programme and the extent of national and Community assistance in a closed and separated way in the accounting system. Expenses related to EU funds shall be settled according to both an economic and a functional classification.

Account settlement of assistance from the structural funds (post-rata)

Settlement of advance payments with the benefactor

In order to implement the projects – in line with what is presented at the financial processes – the benefactor may provide an advance payment to the beneficiary on the condition that it is settled. Advances may only be charged to national resources, the paying authority can only initiate a drawdown of EU assistance if the beneficiary can verify that the grant is used in line with the grant contract.

Accordingly, on the benefactor"s side, the advances paid appear as budgetary expenses and at the same time as receivable against the adjustment of equity. The settlement period of the advance – in the current or the following year – has an influence on its settlement in the benefactor"s books. If the advance is settled in the current year, *"it shall appear as definitive recognised cost through a transfer between the relevant financial-instrument-transfer and appropriation-offset accounts"*, obviously eliminating other receivables against adjustments of equity at the same time. If the advance is not settled in the current year, the financial instrument transfer appropriation cannot be offset through transfer without the movement of funds from one account to another; thus, it is only the receivables that have to be settled against the adjustments of equity. If the beneficiary cannot or can only partially settle advances (e.g. the project fails or recovery due to an irregularity is needed), the difference shall be *"taken into account as a refund of assistance programme advances and as an offset of financial instrument receipt appropriations".* (Nemzeti Fejlesztési Ügynökség 2007b)

Financial account settlement of assistance at the financing organisations

When the funding decision is made, the grant as a liability is recorded as an off-balance-sheet item; then, the national co-financing part is recorded – after approval by the Hungarian State Treasury – as an offset of grant appropriation from the supervisory body.

Following the submission of supplier invoices, the intermediate body provides for the drawdown of funds, which are to be settled as contingent costs after their receipt on the transaction account. After the total amount of assistance is received on the transaction account, book entries related to the derived assets of assistance programmes and the contingent and running income have to be settled. After the funds were paid to the beneficiary, the resource owner settles previously contingent costs as budgetary expenses. (Nemzeti Fejlesztési Ügynökség 2007b)

The receipt of EU funds from the paying authority is recorded by the resource owner as grant equivalent income, recording transaction items at the same time.

Payments declared as irregular are recorded by the resource owner as receivables – and by the beneficiary as liabilities – right until they are financially settled. If the irregularity is financially settled within the current year, the resource owner regards it as a reduction in the costs of transferred financial instruments, and after financial settlement is done, the receivable is eliminated. At the same time, the resource owner provides for the recovery of irregularly used EU funds, which it records as a decrease in the grant equivalent income. If the irregularity is financially settled in the following year, it is recorded by the resource owner as grant equivalent income, while the part of grants recovered by the resource owner to the paying authority shall be recorded as definitive cost of the transfer of financial instruments. (Nemzeti Fejlesztési Ügynökség 2007b)

The processes described above make it possible to follow each step in the financial process in a transparent way, and the principle is met, which requires to settle the use of EU fund appropriations through a transfer of financial instruments in all cases; in addition, the separated management of funds is ensured.

4.7. Account settlement of municipalities as beneficiaries

A part of the empirical data for the research is provided by the Hungarian State Treasury, and is based on municipal reports. In order to allow for a single understanding of data – taking into account that the government decree on the accounting rules for municipalities in force in the research period is not presented – I consider it justified to demonstrate in my paper those items in the reports[102], which are indirectly or directly affected by the use of EU funds.

Settlement of structural funds assistance in the case of municipal beneficiaries

In line with what is written at the financial processes, structural funds projects are financed in a *post-rata* system.

Handling advances from the accounting perspective

The calls for proposals of some operational programmes allow for the payment of advances to beneficiaries, exclusively against national budgetary resources, since EU funds can in no case be used for financing the budgetary deficit – not even in an indirect way. This justifies the focused and separated observation and recording of advances. (Lilliné Fecz 2004)

Advances are managed by the beneficiary on a separate *target settlement account* in order to make sure that it is not used for purposes other than the project purpose (Antalóczy et al. 2010), and recorded at the same time as short-term liability.

Costs incurring in the course of project implementation are paid by the beneficiary directly from the target settlement account until it meets its obligation to settle the entire amount of advances. Obviously, the beneficiary may only eliminate the advance as liability from its books if the financial implementation management body (intermediate body or managing authority) approves the settlement of the advance. *"From financial instruments of the final beneficiary, the amount equal to unaccepted supplier invoices shall be shown under the separate target settlement account – which always refers to the implementation of the grant contract and shows the amount of unused grants – as soon as the beneficiary is informed."* (Lilliné Fecz 2004)

[102] Primarily balance sheet groups.

Account settlement of the funds during project implementation

Following the acceptance of an invoice, the beneficiary records the commitment and pays the supplier‟s invoice.[103] Then, it decreases the supplier‟s liabilities, and provides for the takeover of the purchased assets in case the procurement involves tangible assets. If the beneficiary received grants to cover operating costs – such as the development of some skills or competences or precisely to finance operation – it has to be settled accordingly; however, this typically does not involve a change in the equity. Having paid the supplier‟s invoice, the grant amount is not considered settled yet; it has to be temporarily recorded as running cost and after it is received, it shall be regarded as income from received financial instruments. (Lilliné Fecz 2009) Should the intermediate body regard the submitted settlement as not regular, it does not transfer the grant amount for the rejected items; thus the beneficiary has to settle it against its own appropriations. (Nemzeti Fejlesztési Ügynökség 2007b)

In the case of payments declared as irregular, the beneficiary has a liability towards the benefactor. If the irregularity is financially settled in the current year, it appears as a decrease in the income from received financial instruments in the municipal accounting system; while, if the financial settlement is done beyond the current year, the beneficiary records it as grant equivalent cost.

Due to the posterior settlement of funds, the beneficiary pays the total amount of the supplier‟s invoice in advance; even liquidity loans may be used to cover pre-financing. In this case, the receipt of the liquidity loan is recorded as financial income while at the same time the liquidity loan is recorded. After the assistance is financially settled, loan servicing is regarded as financial cost while eliminating the loan at the same time. (Antalóczy et al. 2010)

[103] For the sake of simplification, in my paper, I do not present the case when the beneficiary only pays the own contribution part of the invoice directly to the supplier.

5. Setting-up of hypotheses and the empirical support for the research

5.1. Distinction of the empirical research

As it is indicated in the introductory part of my paper, I regard the description of the diverse theoretical context as an integrated part of my research, since I sought a new approach when analysing the literature: through connecting scientific disciplines that are rather far from each other, I have drawn the attention to connections which would remain hidden if we examined each subdiscipline separately.

In the theoretical introduction of my research, I analysed the relationship between EU funds and municipalities from different perspectives. On one hand, the issue of measurability of the impacts of funds is raised; and on the other hand, there are the additionality aspects, providing which is a basic condition for the drawdown of funds. In the domestic literature, there seems to be a contradiction regarding the relationships between development and indebtedness. While Banai‟s examination of the state budgetary deficit led to the conclusion that *"the deficit level is essentially affected by the level of additionality expenses"* (Banai 2008); according to Vigvári‟s model of atypical municipal indebtedness, municipalities issuing bonds – and thus resorting to debt – typically do not apply for EU funds. (Vigvári 2009a)

During my research, I did not aim at eliminating the above apparent contradiction; I believe relevant measures can only be carried out after the 2007-2013 programming period; since currently, although we may theoretically be able to measure the impacts of indebtedness, the investment side – forming the basis for comparison – cannot be investigated due to the projects being implemented.

One of the options for measuring development disparities is the *bottom-up* or micro approach, as the analytical unit of which, I chose local municipalities. Although, in the literature processed, there is a lot of reference to what makes a settlement most progressive in respect of the use of EU funds, this is not substantiated yet.

As the analytical field, I chose a period that can be considered as closed; and therefore, in respect of its results, quantifiable data are available. Since the eligibility period of the National Development Plan‟s 2004-2006 programming period was extended – with the

consent of the European Commission – until 31 December 2008, my empirical testing is limited to the 2004-2008 period, in respect of EU funds to operational programmes financed from the structural funds, and in respect of units of observation to local municipalities. Due to their massive distortion effect, municipalities with county authority[104] as well as the capital and its districts were excluded from the empirical research.

5.2. Setting-up of hypotheses

The link between the use of EU funds and municipal financial management is provided by the additionality requirement meaning that municipalities as potential beneficiaries shall possess adequate own resources. Accordingly, we shall examine what kind of resources serve as basis for own contribution, and what kind of relationships can be drawn up among borrowing, indebtedness, own source revenues and EU funds.

H1: The golden rule is not applied in Hungary: municipal borrowing is not exclusively used for covering investment expenses but partly for financing current (operating) costs.

Accordingly, my first hypothesis exclusively focuses on the application of the golden rule; it does not affect EU funding or its relationship to borrowing. The hypothesis on its own cannot be considered as novel since it is clearly stated and confirmed by the previous theoretical assumptions presented in Chapter 4; however, I have not found any empirical substantiation of full scope in the literature. In the second group of hypotheses, my main objective was testing investment expenses, EU funds and additionality.

H2: EU funds have a determinant role in municipal investments: a positive correlation exists between renovation and investment expenses and EU funds received.

If Hypothesis H2 turns out to be approved, I will have to find an answer to the question how municipalities meet the additionality requirement. The relationship between development, financing and the own source revenues of municipalities is to be studied.

[104] In Hungary, 23 of the cities (all county seats except Budapest and 5 other cities having more than 50 thousand population) are "cities with county authority". These cities have equal rights with the 19 counties of Hungary. (Note by Translator)

H3: The additionality rule applies for municipalities: the sum of own source revenues and the financial balance is in a positive correlation with the EU funds received.

Hypothesis H3 primarily focuses on testing additionality; however, it does not provide an answer for the question whether there are relationships existing between EU funds and the increase in the liabilities of municipalities and if yes, what kind of relationships these are. Nevertheless, based on what is written in Chapter 4 of my thesis, Hungarian municipalities are clearly characterised by a trend of resorting to debt; therefore, I narrowed this hypothesis to the increase in liabilities.

H3.1. The use of EU funds leads to indebtedness: a positive correlation exists between the increase in municipal liabilities and EU funds paid.

My intention is to perform multidisciplinary research; however, if I end my reasoning with setting up hypotheses H1 to H3, it would raise the question why I devoted nearly half of the theoretical introduction to regional policy issues and to presenting models measuring the efficiency of funds. The third – narrow but quite complex – group of my hypotheses is constituted by concepts aimed at finding the causes underlying the receipt of funds and relationships among them.

H4: The size, location and revenue structure of municipalities are factors which together determine the use of EU funds.

H5: There is a group of municipalities defined according to size, geographical location and revenue structure in which the use of EU funds is not typical.

Operationalisation of definitions

Operationalisation is complete if the empirical research is performed and variables to be examined clearly defined; nevertheless, I consider it justified including a brief operationalisation of definitions used in my hypotheses, since in some cases, I deviate from the approaches generally used both in literature and in the standard language.

The definitions of the principal concepts in my hypotheses are included in Annex 7, in Annex 8 and at the description of the detailed testing of each hypothesis.

6. Research methodology and testing the hypotheses

6.1. Empirical grounding of the research

In my research, I applied an inductive → deductive → inductive approach; i.e., as a first step, I mapped the databases which are available in this domain, thoroughly reviewed their data content and attempted – based on a more restricted data set[105] – to assess the relationships in them. However, lacking the necessary theoretical knowledge, my attempt had little success. Then, I started my own theoretical research with a thorough study of international and domestic literature, which is included in the theoretical introduction of my thesis. My hypotheses are set up on the basis of the theoretical part of my research. Nevertheless, solely based on the theoretical introduction and without empirical testing, the hypotheses cannot or can only disputably be approved; thus, as the final part of my research, I examine them through testing databases.

Before setting up my hypothesis just like when planning the empirical research, I conducted deep interviews with economic experts employed in municipalities, auditors, and staff members of the Hungarian State Treasury and the National Development Agency. These interviews were primarily aimed at revealing relationships and understanding in practice the variables in the databases, and cannot be considered as structured deep interviews: we primarily had a look at the fields which can be considered as the narrow-sense professional field of each interviewee. Therefore, the results of these deep interviews are rather limited; thus, I refrain from presenting them, and primarily turn to mathematical-statistical methods of multivariate data analysis to support my hypotheses.

In the course of my research, I did not consider it justified creating my own survey, taking into account that the range of information needed to support my hypotheses empirically is included in the databases of uniform structure on their own, described above. The data provided by the Central Statistical Office as well as those by the National Development Agency and the Hungarian State Treasury are checked several times – in respect of coherence and completeness –; thus, I regard them as a reliable and complete data source.

[105] In the framework of the course entitled *Mathematical-statistical methods of multivariate data analysis* of the Doctoral School, I studied the budgetary reports of municipalities of 2004.

I usually performed the analysis of data and the test of my hypotheses in two steps. In order to reveal the internal structure of a database, I determined the basic statistical parameters[106] of each variable as a first step, which is not presented in details one by one for each hypothesis but the primary connections are summarised in a separate annex (Annex 10). Multivariate data analysis and statistical procedures applied for testing the hypotheses were planned and conducted using the SPSS18 software. The figures and charts in the paper are also outputs of this computer programme since the research was documented and presented in tables and on charts, and the results were assessed using SPSS.

6.1.1. Source of data and the method of data collection

In connection with my research, I studied three Hungarian databases, the data contained in which separately are not, but together are sufficient for the empirical testing of my hypotheses. Before combining the three databases, I studied each part separately in order to set aside variables irrelevant for my research – already before the databases are combined. In this way I avoided the further unjustified extension of the database – which contained thousands of variables anyway.

Database of the Central Statistical Office

On the whole, the database uses more than a thousand variables, a significant number of which is not directly related to the property, financial and income conditions of municipalities or to their indebtedness, or to the extent of EU funds received. Bearing in mind the research objective, a significant restriction of the range of variables seemed necessary. Natural indicators regarding trade, education, health and social care or culture would be interesting for a research with a social perspective; therefore, I excluded these indicators as variables from my research even though we could probably find some connections with municipal development.

The greatest advantage of the settlement statistical database of the Central Statistical Office is that units of observation for the purposes of the research are fully identifiable since the number of units of observation equals to the number of settlements with local government[107]; furthermore, data related to each year concerned (2004-2008) are

[106] average, standard deviation, distribution

[107] The database also contains data related to county governments and to the capital; however, due to the narrowed scope of my research, these are considered irrelevant.

available in a uniform structure. The database is considered complete since it includes data related to each settlement in Hungary. The information content of the database allows us to follow where – in which county – each settlement is located in. Access to these data was provided via the Central Statistical Office website.[108] (http://statinfo.ksh.hu/Statinfo, accessed: 13 October 2011.)

Unified Monitoring Information System (UMIS) of the National Development Agency

Data related to each project co-financed from structural funds are available in UMIS. Since the system monitors the entire lifecycle of projects from the submission of the application to the end of the maintenance period, sufficient information related to both the project content and financial processes is available.

Following a discussion with the National Development Agency, the entire database was made available for my research, with data content fitting the research objectives. The database contains all projects in relation to which payments were carried out in the 2004-2006 programming period – between 2004 and 2008 –; thus, it is considered complete. The database contains numerous variables[109] from which, the payments carried out in the period between 2004 and 2008 in relation to each municipal project are the ones primarily relevant for my research.

As a first phase of processing the database – using a simple Excel software – I structured data according to the research objectives, the initial step of which was to interpret the variables and narrow the range of data to municipalities. In the case of project-related data, I primarily took the location of the project seat into account. For 7 projects,[110] no seat was indicated; here I regarded the settlement each project is implemented in. The variable „economic form" of the database allowed for narrowing the scope to municipalities.

Database of the Hungarian State Treasury

In line with the Hungarian legislation in force in the research period (2004-2008), municipalities are obliged to submit their reports every year to the competent body of the

[108] The range of variables downloaded from the CSO website are included in Annex 9.a) of the thesis.
[109] Variables of the UMIS database of the National Development Agency that are relevant for my research are listed in Annex 9.b) of the thesis.
[110] The complete UMIS NDP database contains data related to 42 858 projects altogether; thus, the number of 7 can be considered rather low (0.02%).

Hungarian State Treasury in whose territory they are located. The report consists of 80 forms altogether, which describe the property, financial and income conditions of municipalities. In the period covered by the research, the Hungarian State Treasury collected the information yearly, which makes it possible to study the relationships between years as well as to examine each year separately or even together. The database is complete and contains information related to all municipalities in a uniform structure.

In accordance with the criticism regarding the accounting and recording systems presented in the theoretical introduction of the paper, the scope of the research is limited by the fact that *no information is available on the quasi-fiscal sector of municipalities* (Vigvári 2010), meaning that reports of municipalities do not cover – either in a consolidated way or separately – the property of companies owned by municipalities and related requirements on the ownership of these.[111] Off-balance-sheet items – e.g. long-term liabilities related to public-private partnerships or lease charges with a liability lasting several years, which play a significant role in municipal financial management – typically do not appear as liabilities in the balance sheet but are summarised in the *„current operating expenses"* line in the budgetary report.

Bearing in mind the intention to reduce the above risk, as a first step, from among the 80 forms, I had to select those which are relevant for my research. Taking my hypotheses into account, I selected the Accounting balance (form No. 01) and the Budgetary report (form No. 80), since the variables included in these forms provide consolidated information regarding municipal property and – if we have a look at multiannual data – its development on one hand, and on the other hand on the revenues and expenses structure of municipalities. The research was made more difficult by the fact that the structure and information content of both forms was – though slightly – modified and extended in the research period. The content of the forms, i.e. the range and coding of variables are included in Annex No. 8.

The overly high number of variables would have made the empirical research significantly more difficult; therefore – in the case of the data provided by the Hungarian State Treasury, prior to combining the three databases –, the number of variables was reduced, partly based on professional arguments and partly using mathematical methods, as follows:

[111] e.g. guarantees, liabilities towards a third party

1. In the case of the accounting balance (form No. 01), as a first step, I tested whether the principle of continuity is met in the research period, i.e. whether the opening value in a given year equals to the closing value of the preceding year. I could also have omitted this analysis taking into account that consistence was necessarily ensured if the accounting rules in force were complied with.

   I randomly selected 50 variables[112] from the accounting balance, in the case of which I performed a correlation test in respect of each year under examination (2004-2008). Based on the correlation values (1-1), we can conclude that the continuity principle has most likely been met in practice; thus it is not necessary to include variables causing redundancy in the database, since it would unnecessarily distort the analysis. Taking this into account, it is only the opening and closing data of 2004 and the closing balance data of the years 2005-2008 which are included in the database applied for testing the hypotheses.

2. In the case of the budgetary report (form No. 80), each variable has three values – initial appropriation, modified appropriation and actual performance – related to it. Taking into account that the scope of my research does not include the examination of the difference between planned and actual values, I exclusively focused on actual performance. With this step, the number of variables related to the budgetary report was reduced to one third.

After I removed unnecessary variables irrelevant for my research from each of the three databases separately, I got a dataset suitable for my hypotheses to be tested on.

6.1.2. Exploratory analysis of the dataset

Combining the three databases, I had variables to be interpreted either on a nominal, or on an ordinal or on a ratio scale.

As a first step, I thoroughly examined the average number of residents and settlement structure. As a result,[113] I learnt that the standard deviation of the number of residents is high, the positive skew indicates that distribution is skewed right with a high positive value of kurtosis, which led me to the conclusion that the population contains extreme observations. Calculating with adjusted mean values (M-estimator), the average value

[112] nearly half of the total number of variables
[113] For detailed results see Section a) of Annex 10.

decreased, which is the consequence of the fact that there were much fewer large cities than small villages in the population; however, some cities with an extremely high number of residents moved the average strongly upward.[114] This finding is also substantiated by the relationships between other variables, showing that some variables were not typical at all for certain types of settlements.[115]

Based on the exploratory data analysis, we can conclude that the analysis of all units of observation at the same time as part of the empirical research cannot or can hardly turn out to be effective, since there are significant differences between settlements in respect of certain variables.

Accordingly, as a first step, I had to identify the group selection criteria, which allow for handling municipalities as entities. These group selection criteria may comprise geographical location on one hand and the number of residents on the other. However, based on the exploratory analysis, values characterising the economic structure are largely dependent on the number of residents; thus, I decided to apply my own classification, which is based on geographical location on one hand, and on economic structural characteristics on the other.

Geographical location

During the examinations, taking the regional policy part of my paper into consideration, it seems reasonable to work with regions defined according to the NUTS classification, of which, the detailed descriptive statistical data and location on the map is presented in Annex 10.

Considering the number of settlements in each region and county, statistical stability during the multivariate data analysis is ensured in the case of NUTS1 and NUTS2 level testing; however, if we apply a breakdown by NUTS3 units (counties), it might be limited (see Section o) of Annex 10). On the other hand, this is mitigated by the fact that the database is complete, and no sampling is applied.

Since statistical stability is already questioned in the case of a NUTS3 level breakdown, I do not use NUTS4 (microregional) level analyses for testing the hypotheses.

[114] See also (Hunyadi et al. 2001).
[115] These included the receipt of EU funds in some years; as it is presented in details later, when discussing Hypothesis H5.

As part of the exploratory analysis, I examined the relationships between EU funds and the geographical location of settlements in several steps, in a breakdown by counties.[116]

In this context, I observed Hungary‟s settlement structure focusing on the question: settlements of what size (i.e. what number of residents) are typical in each county and region. Based on the data and charts included in Annex 10, it seems to be clear that there are significant disparities in the settlement structure of the country, which shall be taken into account during the analyses and their interpretation.[117]

In the Western counties of Hungary, settlements of a lower number of residents prevail, while in the Eastern counties, settlements with several thousand inhabitants are typical. It is also remarkable that more than three fourths (75.8%) of the smallest settlements with under 500 inhabitants are located in the NUTS1 large region of Transdanubia;[118] the small-settlement structure is particularly typical in the counties of Baranya, Győr-Moson-Sopron, Somogy, Vas, Veszprém and Zala (Sections d to e of Annex 10). While the number of settlements with 500 to 5000 inhabitants is distributed proportionally according to NUTS1 large regions, most of the settlements with 5000 to 50000 inhabitants are concentrated in the Great Plain and North. The distribution of large cities with more than 50000 inhabitants can be considered equal. Nevertheless, it is remarkable that according to the NUTS1 classification, the number of settlements located in Central Hungary is much lower than in the other two large regions. Even though this classification based on technical criteria reflects a progressive approach, it would distort the results of the present research due to the number of settlements being disproportioned.

My objective with the exploratory analysis was to organise the counties into three groups taking their geographical location into account, regardless of their NUTS1 and NUTS2 classification, in a way that the groups on their own are as homogeneous as possible but show large differences when compared to each other according to their characteristics[119]. My own territorial classification and its presentation on the map are shown in Sections f1 and f2 of Annex 10. According to the exploratory analysis, counties classified into the

[116] See Sections m) to o) of Annex 10.
[117] See Sections e) and q) of Annex 10.
[118] while the value of this indicator is only 23.6% in the Great Plain and North large region
[119] One of the most dominant factors in this respect is the number of inhabitants, since it is strongly correlated with the other variables relevant for my research.

Western and the Eastern group show similarities, while counties[120] that cannot be classified into either group hardly have any common characteristics.

Based on my own classification, differences in the number of inhabitants among settlements of different size are especially sharp in the case of settlements with fewer than 500 residents, taking into account that the number of items in each category get closer and closer to each other.[121] This way, we can perform our analyses on a more homogeneous population on its own; while differences between each group appear more clearly. A further advantage of my own classification is that it shows a balanced picture in respect of municipalities that received EU funds, along the categories (West, Centre, and East). When testing the hypotheses empirically, I use both classifications (according to NUTS and my own categories) in respect of territorial breakdown.

6.2. Testing the hypotheses

6.2.1. Testing Hypothesis H1

H1: The golden rule is not applied in Hungary: municipal borrowing is not exclusively used for covering investment expenses but partly for financing current (operating) costs.

Based on what is presented in the theoretical part of my study, we can assume that there are many factors lying behind municipal borrowing in Hungary. From the literature I learnt that the revenues from borrowing were partly spent by municipalities on investments, partly regarded as savings and partly used to finance operating expenses.

When testing the hypothesis, I regard the 2004-2008 period as a whole, taking into account that borrowing and debt service across the years could distort the model; however, differences between years get smoothed when examining five years together and trends can be observed. The hypothesis can be approached through the movement of the variable values; thus, the basic indicators of testing are flow variables; accordingly, I take municipal budgetary reports as the basis of my examination. The applied method is

[120] We may as well call it a transitional set.
[121] This is partly due to the fact the Central Hungarian NUTS1 region had a disproportionately low number of items. The category "Centre" defined according to my own classification includes counties other than those in the Central Hungary region, which makes the inhabitant categories according to either classification more balanced. See also Sections g) and l) of Annex 10.

largely based on the CLF method used by the State Audit Office, presented in the summary of audits in 2011 on the financial situation and financial management system of municipalities (Állami Számvevőszék 2012). The method principally examines the financial position in a way so that the current and capital balances[122] are distinguished from each other as well as from the financial balance.[123]

My assumption is that – also taking the theoretical part of the research into account – the following relationships exist:

$$\Delta D \approx \Delta Sec + \Delta Cap + \Delta Opera$$

where:

ΔD: the change of debt, i.e. the difference between the revenues from borrowing and the expenses on debt service in the research period;

ΔSec: difference between securities – either short- or long-term – purchased and sold in the research period

$$\Delta Sec = \sum_{2004}^{2008} (purchase\ of\ heldfortrading\ sec. - sale\ of\ heldfortrading\ sec.) + \sum_{2004}^{2008} (purchase\ of\ longterm\ sec. - sale\ of\ longterm\ sec.)$$

ΔCap: difference of capital expenses and capital revenues

$$\Delta Cap = \sum_{2004}^{2008} (Capital\ expenses - Capital\ revenues)$$

$\Delta Opera$: difference of operating expenses and operating revenues

$$\Delta Opera = \sum_{2004}^{2008} (Operating\ expenses - Operating\ revenues)$$

[122] differences between revenues and expenses
[123] For a detailed description of the method see Appendix 1 of (Állami Számvevőszék 2012).

Reorganising the equation, we get the following results:

$$\frac{\Delta D}{\Delta Sec + \Delta Cap + \Delta Opera} \approx 1$$

However, in order accept the hypothesis as approved, it is not sufficient to verify the above equation; we shall also prove that the equation is not valid if we omit operating costs, i.e.

$$\frac{\Delta D}{\Delta Sec + \Delta Cap} \neq 1$$

Verifying both equations jointly, we prove that borrowing partly serves operating purposes.

I define the change of debt, i.e. ΔD, in two different ways: at first I exclude short-term and liquid loans from my definition; secondly I include these into the interpretation. Accordingly, the hypothesis is tested through two cases, in four steps altogether, using a one-sample t-test[124], assuming that the denominator is positive – taking the results of the theoretical research into account[125].

1. Short-term and liquid loans are excluded from the definition of debt

In this case, the term debt is defined to mean the difference between the difference of the receipt and service of long-term and foreign loans received by municipalities in the research period, the difference of the issuance[126] and cashing-in of held-for-trading and long-term securities, and the difference of other financial revenues and expenses altogether.

[124] to test whether the average equals to the hypothetical expected value
[125] See Chapter 4.3.3.
[126] i.e. the issuance of bonds

$$\Delta D_1$$
$$= \sum_{2004}^{2008} (receipt\ of\ longterm\ loans - service\ of\ longterm\ loans)$$
$$+ \sum_{2004}^{2008} (receipt\ of\ \ - service\ of\ )$$
$$+ \sum_{2004}^{2008} (issuance\ of\ heldfortrading\ sec. - cashingin\ of\ heldfortrading\ sec.)$$
$$+ \sum_{2004}^{2008} (issuance\ of\ long\ sec. - cashingin\ of\ long\ sec.)$$

According to the t-test results, with the involvement of 1122 items, an average of 0.929 and a significance level of 0.797, the statement described with the equations shall not be rejected.

Test Value = 1					
t	Degrees of Freedom	Significance	Mean Difference	90% Confidence Interval	
				Lower	Upper
-0.257	1121	0.797	-0.07095	-0.5249	0.3830

The above are necessary but not sufficient conditions for our hypothesis to be approved, since they do not allow for establishing causal relationships.

Since my objective with testing the hypothesis is to confute the golden rule, as a next step, I examine whether the relationship can be set up if we omit the difference of operating expenses and revenues, i.e. whether the following is true:

$$\frac{\Delta D_1}{\Delta\, Sec + \ \Delta\, Cap} \approx 1$$

Test Value = 1					
t	Degrees of Freedom	Significance	Mean Difference	90% Confidence Interval	
				Lower	Upper
-4.588	2992	0.000	-0.76638	-1.0412	-0.4915

According to the t-test results, with the involvement of 2993 items, an average of 0.23 and a significance level of 0.00, the statement described with the equations shall be rejected.

The above lead us to the conclusion that using a strict definition of debt – i.e. excluding short-term and liquid loans –, the golden rule is not applied in the case of Hungarian municipalities, since – based on the t-test results – the null hypothesis is only supported if the difference of operating costs and revenues is taken into account

2. Short-term and liquid loans are included in the definition of debt

The testing method is exactly the same as the one presented at Step 1, the only difference is in the interpretation of debt as a variable. This time, by debt (ΔD_2), I mean the following:

The difference between the receipt and service of ***liquid, short-term,*** long-term and foreign loans received by municipalities in the research period, the difference between the issuance and cashing-in of short-term and long-term securities, and the difference of other financial revenues and expenses altogether.

$$\Delta D_2 = \sum_{2004}^{2008}(receipt\ of\ shortterm\ and\ liquid\ loans - service\ of\ shortterm\ and\ liquid\ loans) + \sum_{2004}^{2008}(receipt\ of\ longterm\ loans - service\ of\ longterm\ loans) + \sum_{2004}^{2008}(receipt\ of\ \ - service\ of) + \sum_{2004}^{2008}(issuance\ of\ heldfortrading\ sec. - cashingin\ of\ heldfortrading\ sec.) + \sum_{2004}^{2008}(issuance\ of\ long\ sec. - cashingin\ of\ long\ sec.)$$

According to the t-test results for the equation $\frac{\Delta D_2}{\Delta\ Sec + \Delta\ Cap + \Delta\ Opera} \approx 1$, with the involvement of 1122 items, an average of 0.937 and a significance level of 0.838, the statement described with the equation can be accepted.

Test Value = 1					
t	Degrees of Freedom	Significance	Mean Difference	90% Confidence Interval	
				Lower	Lower
-0.205	1121	0.838	-0.06288	-0.5686	0.4429

The t-test results for the equation $\frac{\Delta D_2}{\Delta\, Sec + \Delta\, Cap} \approx 1$, with the involvement of 2993 items and an average of 0.22, are the following, on the basis of which, I reject the statement:

Test Value = 1					
t	Degrees of Freedom	Significance	Mean Difference	90% Confidence Interval	
				Lower	Lower
-4.383	2992	0.000	-0.77926	-1.0718	-0.4867

On the whole, we can conclude that both the strict and the more flexible interpretation of debt lead to the acceptance of the equation $\frac{\Delta\, D}{\Delta\, Sec + \Delta\, Cap + \Delta\, Opera} \approx 1$, and to the rejection of the equation $\frac{\Delta\, D}{\Delta\, Sec + \Delta\, Cap} \approx 1$; thus, the golden rule of borrowing did not apply for municipalities in Hungary, since loans were partly used to cover operating expenses. Based on the above, I **consider Hypothesis H1 approved.**

6.2.2. Testing Hypothesis H2

H2: EU funds have a determinant role in municipal investments: a positive correlation exists between renovation and investment expenses and EU funds received.

Due to the extended eligibility period, the payment of EU funds is relevant by December 2008; therefore, I test the hypothesis for the entire period as a whole and not in a breakdown by years. Taking into account the rules on renovation and investment expenses and on the settlement of VAT in the case of municipalities[127], I examine the amount of VAT related to investments, i.e. a flow variables, when testing my hypothesis,

[127] VAT is typically not deductable in municipal financial management.

in total in respect of EU funds regarding the years 2004 to 2008, based on the data in the budgetary report form of the Hungarian State Treasury.[128]

As a result of the exploratory analysis, we saw that the number of inhabitants has a determinant role in respect of our variables, which needs to be taken into account when testing the hypothesis. This is confirmed by the graphic figures presenting the relationships between variables, included in Sections a1-a3 of Annex 11.

As a first step, I study the Pearson-correlation between variables on a country level and by counties. (Sections b1 and b2 of Annex 11) The results lead us to the conclusion that there is a high correlation – of above 0.9 in the case of most counties with the only exception of two (Fejér and Pest) which have a lower value of still above 0.5. Since both variables under examination have a high Pearson-correlation with population, we can only draw conclusions regarding the positivity of the relationship. However, we cannot conclude that there is a causal relationship between renovation and investment expenses and EU funds.

Therefore, as a second step, I use partial correlation to study the relationship of the two variables considering population as a control variable both at a country and a county level. (Sections c1 and c2 of Annex 11) The results do not reflect a clear and strong positive relationship that would support the hypothesis.[129]

The extreme difference between the results of the two approaches is due to the fact that the approaches on their own are extreme. While the first approach is a little superficial, the other one does not consider the fact that larger settlements necessarily have a larger budget and more financial resources, and they may receive a higher amount of EU funds.

In order to resolve the above problem, we shall find a method that takes the number of residents into consideration but does not ignore the difference between settlements of significantly different sizes. In line with the methodology applied by the CSO, I stratified the settlements according to the number of inhabitants as follows: settlements with less than 200 inhabitants; 200 to 499; 500 to 4 999; 5 000 to 9 999; 10 000 to 49 999; and more than 50 000. The number of items in each stratum (see Section d of Annex 11) –

[128] Accordingly, as a first step, I set up the following new variable: $renovation\ and\ investment\ expenses = renov_{invest} =$
$\sum_{2004}^{2008}$(renovation + institutional investment expenses net of VAT + VAT on investmnets)
[129] Using a breakdown by NUTS1 or NUTS2, we get similar results – the hypothesis is not supported.

also considering the number of settlements that did and those that did not receive EU funds – seems appropriate in respect of statistical stability; however, the number of items does not allow for the application of further territorial breakdowns during testing my hypothesis.

I selected the following approach to test my hypothesis: I would like to support the assumption that EU funds have an influence on renovations and investments, which I can demonstrate if I carry out a comparative examination of municipalities that did receive and those that did not receive EU funds.

According to the results of the exploratory analysis, the extent of EU funds granted to municipalities is in a strong positive correlation with the population of settlements; thus, larger settlements receive more and higher funds. Nevertheless, in the case of settlements that received funds, per capita funds decrease with the increase of the number of inhabitants.[130] Taking the above into account and also considering the multiple differences in settlement size within each stratum, I regard per capita renovation and investment expenses as the test variable during testing my hypothesis.

In the course of testing my hypothesis, I compare by stratum the differences in per capita renovation and investment expenses between municipalities that did and those that did not receive funds. If there is a significant difference in renovation and investment expenses between municipalities that did and those that did not receive funds in favour of municipalities that received funds, this supports the assumption that there is a positive relationship between the fact of the receipt of funds and investment and development expenses. This is further supported by the fact that the extent of per capita funds decreases with the increase in the number of inhabitants, while total funds as well as investment and renovation expenses grow. (Sections e1 and e2 of Annex 11)

Average per capita investment and development expenses are higher in the case of settlements which received EU funds. (Section e1 of Annex 11) In the stratum of settlements with more than 50 000 inhabitants, every municipality received EU funds; thus, in this stratum, the examination is not relevant.

[130] This is not surprising on its own since economies of scale prevail above a certain settlement size, which has an influence on the structure of municipal revenues and expenses.

I use two-sample t-test and Welch‟s test to test the per capita investment expenses of settlements with and without EU funds, separately for each stratum according to settlement size. The tests are used to examine whether the difference of the averages of per capita investment and development expenses within each stratum is significant between municipalities that received and those that did not receive funds.

Based on the received results (Section e3 of Annex 11), we can conclude that the equality of the variable‟s standard deviation between settlements that received and those that did not receive funds is not approved in the stratum of settlements with 10 000 to 49 999 inhabitants, applying a significance level of 0.017 (Levene‟s test). Nevertheless, we can reject the idea that the difference in the average exists by mere chance; since the significance level for the t-test is 0.002. Thus, I consider the hypothesis approved for the stratum subject to examination.

In the case of settlements with 5 000 to 9 999 and 1 000 to 4 999 inhabitants (Section e3 of Annex 11) we do not reject the equality of standard deviations of settlements with and without funds, since the significance level is 0.281 and 0.133. The significance level for the t-test is 0.1 and 0.002. Taking into account that the 90% confidence interval does not contain the value of 0 in the case of any of the strata, I consider the hypothesis approved for the two strata under examination.

In the stratum of settlements with 500 to 999 inhabitants, we cannot approve the equality of the variable‟s standard deviation between settlements that received and those that did not receive funds, applying a significance level of 0.05. Nevertheless, we can reject the idea that the difference in the average exists by mere chance; since the significance level for the t-test is 0.09. Thus, I consider the hypothesis approved for the stratum subject to examination.

In the case of settlements with 200 to 500 inhabitants, we do not reject the equality of standard deviations of settlements with and without funds, since the significance level is 0.878. The significance level for the t-test is 0.58 and the 90% confidence interval does contain the 0 value, which would lead to the rejection of the hypothesis for the stratum under examination. However, the examination of the settlements (Section f of Annex 11) shows that there are outliers in the stratum under examination, for the handling of which, we cut off the upper 5%, i.e. 36 items, from the population. The results of the two-sample

t-test (Section g of Annex 11) lead us to the conclusion that the equality of standard deviations are rejected at a significance level of 0.00, and that the significance level for the t-test is 0.006. Since the 95% confidence interval does not contain the 0 value, I consider the hypothesis for the stratum under examination approved.

In the case of settlements with less than 200 inhabitants, we shall take into account that a significant part of the settlements did not receive EU funds.[131] We certainly conclude that per capita investment and renovation expenses are higher in the case of settlements that received EU funds. Based on results of the t-test, regardless of the approval of the equality of standard deviations, the hypothesis cannot be approved for the stratum under examination because the difference cannot be considered significant: the 90% confidence interval contains the 0 value.

On the whole, it is a telling result that per capita investment and renovation expenses are in all strata under examination higher in the case of settlements that received funds. The results of the t-test led us to the conclusion that this difference is significant in the case of settlements with more than 200 inhabitants. Accordingly, I consider **the hypothesis approved.**

6.2.3. Testing hypothesis H3

H3: The additionality rule applies for municipalities: the sum of own source revenues and the financial balance is in a positive correlation with the EU funds received.

I decided to test the hypothesis for the research period (2004-2008) as a whole, and not in a yearly breakdown. Beside the payment period of funds, this testing method is further supported by the fact that the provision of additionality and the payment of funds do not necessarily occur in the same calendar year; there may be discrepancies in time: the Community contribution cannot be paid if own resources are not provided; accordingly, for the successful implementation of a project, own resources shall be raised first.

The variables of own source revenues, financial revenues and financial expenses were available for testing for the years under examination since they are explicitly specified in

[131] In the research period, 39 settlements received EU funds while 294 did not.

the budgetary report form (form No. 80) of the Hungarian State Treasury. For the purposes of testing my hypothesis, as a first step, I created the variable *"own source revenues"* through adding the data regarding own source revenues in the years 2004-2008; then, as the difference of financial revenues and financial expenses, the variable financial balance was created, adding the data of which for the years 2004-2008 I got the variable *"financial balance"*.[132]

It is important to note that there is a difference in the magnitude of variables to be examined (own source revenues and financial balance); own source revenues are more than ten times the value of the financial balance. Taking this, inter alia, into account, the hypothesis is tested in several phases.

Firstly, I study the Pearson-correlation of each variable with the amount of EU funds granted to municipalities separately in a breakdown by country and by areas, at first regarding all municipalities and then only those that received funds. Following this, I study the correlation with the sum of the three variables; then I compare and assess the results.

The variables under examination and the sum of the funds paid are graphically presented in Sections a to d of Annex 12. If we take a look at the charts, we see that there is a range of settlements which do not receive EU funds even if the level of own source revenues is relatively high. In the case of settlements that received funds, it is clear based on the charts that there are no direct relationships but it can be regarded as a trend that there are positive relationships between the increase of own source revenues and the receipt of EU funds. The graphic presentation of the financial balance does not directly lead to any conclusions. (Section e of Annex 12)

I conducted a correlation analysis of the EU funds granted to municipalities with own source revenues as well as with the financial balance, the results of which are summarised in Section f of Annex 12. Regarding all municipalities at a country level, the correlation value is 0.757 in respect of own source revenues and 0.684 in respect of the financial balance, which indicates a strong positive correlation. If we examine the settlements that received funds, we get similar results; here, the correlation with own source revenues is

[132] $Financial\ balance = \sum_{2004}^{2008}(Financial\ revenues - Financial\ expenses)$; for the interpretation of variables see also Annex 7.

0.753 and that with the financial balance is 0.683. The reason for the slight weakening of correlation is that we exclude from the analysis a large number of settlements that did not receive funds.

In order to get a more accurate picture on correlation, I conducted the correlation study by NUTS1, NUTS2 and NUTS3 regions as well as those according to my own classification. The received results clearly support that there is a strong relationship between the examined variables: in the case of own source revenues, for more than half of the counties, the correlation value is above 0.9 both in respect of municipalities that received EU funds and regarding all local municipalities. Results are also reassuring if we examine the financial balance: the correlation value is above 0.85 in the case of nearly half of the counties. Surprising results arise primarily in the region of Central Hungary, i.e. in the county of Pest, and in Central Transdanubia, in Fejér County. In these areas, the value of the correlation between the examined variables is less than 0.5, which on one hand is rather distant from the rest of the areas, and on the other hand, I could not reveal any underlying theoretical reasons for this. A further research direction could be to conduct a comprehensive analysis of Fejér and Pest Counties both in respect of the municipal financial management structure and the EU funds received.

Since own source revenues and the financial balance on their own have a high correlation value with the amount of EU funds granted to municipalities, it would be rather surprising if this condition was not met in total, taking the difference in magnitude between the two variable into account. I tested this also with a correlation study. The graphic presentation is shown in Sections g to j and the results in Section k of Annex 12, in the same breakdown as the one applied when testing variables separately.

Examining the correlation between the sum of the total of the two variables and the EU funds granted to municipalities, we can conclude that there is no significant shift in the correlation value; it remains typically high.

Since there is a strong correlation in the case of own source revenues as well as in the case of the financial balance and the total of the two variables, also looking at it in a territorial breakdown, **I consider Hypothesis H3 approved**.

H3.1. The use of EU funds leads to indebtedness: a positive correlation exists between the increase in municipal liabilities and EU funds paid.

I limit the testing of my hypothesis to municipalities that received EU funds as this is the population in respect of which the relationships between indebtedness and the funds can be interpreted.

Based on the study of the literature, it can be regarded as a trend that municipalities have resorted to debt from 2004, resulting in a surge of indebtedness especially after 2006. One of the basic indicators of the processes of resorting to debt is the increase of both short- and long-term liabilities in the balance sheet. Based on descriptive statistical data, indebtedness is already typical in the research period; therefore, starting with balance sheet data, I created new variables for testing, in a way that I regarded the difference of the 2008 closing data and the 2004 opening data as a variable since this demonstrates the actual change in liabilities. If the value of the variables is positive, there is a trend of resorting to debt; if it is negative, the municipality services part of its debt. The created new variables are included in Section a of Annex 13.

It is important to note that I do not examine the lines *"Total long-term liabilities"* and *"Total short-term liabilities"* in the balance sheet as separate variables taking into account that this would lead to a distortion in the results due to the aggregate nature of these. Another aggregate line in the balance sheet is *"Other short-term liabilities"*, which I regard as a separate variable taking into account that from among the variables included in it, I exclusively focus on those related to debt service.[133]

As a first step of testing my hypothesis, I conducted a study of the Pearson-correlation between each variable and the EU funds granted to municipalities in a breakdown by areas, the results of which are included in Section b of Annex 13[134].

Correlation values calculated at the country level are typically under or close to 0.5. Looking at it in a breakdown by NUTS1 regions or according to my own classification, the analysis typically shows higher correlation values (except for Central Hungary) than

[133] The research does not include the analysis of bills payable, liabilities towards employees or towards the central budget, liabilities due to the upload of business taxes, and of the difference in liabilities due to local tax overpayments.

[134] The correlation value of the variable "instalments of the issuance of bonds for operating purposes due next year" is so low (at the country level as well as in a breakdown by NUTS1, NUTS2 or counties) that I do not include it in any further examinations during the factor and the cluster analysis.

at the country level in the case of several variables; however, this is not sufficient yet to support my hypothesis.

Examining the correlation values at the NUTS2 level, we can conclude that for most regions they are considerably higher than at the country level; however, based on the variability, we can assume that further differences arise if we examine smaller analytical units (counties). It is remarkable that several variables (issuance of bonds for development purposes, investment and development loans) show a correlation value of above 0.5 in the case of 4 or 5 regions.

If we study correlation according to counties, we get to surprising conclusions. (Section b of Annex 13) There are large differences between certain counties in respect of correlation. Some variables (e.g. supplier[135]) correlate with the funds in a value of between
-0.816 and 0.922. Accordingly, we can conclude that counties show completely different characteristics in respect of the provision of additionality.

Nevertheless, it can be stated that in the case of almost all counties,[136] there are several variables which strongly correlate (in a value of above 0.7) with the EU funds granted to municipalities; accordingly, we can assume that there is a relationship between indebtedness and EU funds. The correlation values for each county are assessed together with the results of the factor and cluster analysis for the sake of transparency.

Following the correlation study, I conducted a principal component analysis[137] in a way that I involved factors with an eigenvalue of above 1.[138] After the principal component analysis, I also applied varimax rotation in order to allow for a simpler separation and interpretation of explained variables. I conducted the examination at country level as well as in a breakdown by counties taking into account that the differences between counties are relevant (while those between NUTS1 and NUTS2 regions are not) based on the correlation study.

[135] short-term liabilities
[136] with the exception Pest and Nógrád
[137] My purpose was to decrease the number of dimensions in a way that the received components maximise the explained variance in a decreasing order. (Sajtos és Mitev, 2007 253. o.) (Füstös et al. 2004)
[138] "If the eigenvalue is under 1, we consider it negligible (since a factor explains less than an observed variable)." (Füstös et al. 2004, 256. o.)

Results are included in Section c of Annex 13. I assess them together with the results of the correlation study and the cluster analysis.

As the last step of testing the hypothesis, I conducted a hierarchical cluster analysis using average linkage clustering[139], standardising the Z value. The results at the country level as well as broken down by counties are included in Section d of Annex 13. The purpose of the cluster analysis was primarily to make the relationship of EU funds with the other variables identifiable. I also examine whether the results received at the correlation study and the factor analysis are in line with those of the cluster analysis, taking into account that in the case of factor analysis and cluster analysis, there is no favoured variable, while in the case of correlation study, EU funds were favoured.

I carried out the comparison of the results of the above three methods separately for each county, taking the differences and similarities of certain counties into consideration.

Joint interpretation of correlations, principal component analysis and cluster analysis

Country level

The correlation of variables under examination with the EU funds granted to municipalities is rather low at the country level; the highest value is shown in the case of investment and development loans (0.54) and the issuance of bonds for development purposes (0.53). The latter is supported by the results of the principal component analysis through the fact that the highest values related to the variables issuance of bonds for development purposes and EU funds granted to municipalities are included in a common factor. In addition, the results of the cluster analysis indicate that the variable investment and development loans is the one most similar to EU funds granted to local municipalities. The above does not yet lead to conclusions supporting the hypothesis since the results of the correlation study show that counties are very different.

[139] "In average linkage clustering, the distance of two clusters is defined by the average distance of all pairs of units of observation, where one member of the pair belongs to one and the other member to the other cluster." (Sajtos és Mitev 2007, 253., 295. o.)

Baranya County

There is a high correlation of a value typically above 0.9 between the variables issuance of bonds for development purposes, issuance of bonds for operating purposes, investment and development loans, suppliers, other short-term liabilities and the service of investment and development loans and the EU funds granted to municipalities; moreover, the factor analysis classifies these into a common factor indicated as the first factor. The above are also supported by the results of the cluster analysis, the variables belong to the same cluster. Accordingly, in Baranya County, the results of the correlation study, the factor analysis and the cluster analysis all lead to the conclusion that indebtedness is typical in the county and that it is related to the EU funds granted to local municipalities.

Bács-Kiskun County

The three different-type analyses bring practically the same results. There is a high correlation of a value typically between 0.5 and 0.9 between the issuance of bonds for development purposes, investment and development loans, long-term loans for operating purposes, other short-term liabilities and the service of long-term loans for operating purposes and the EU funds granted to local municipalities; in addition, the factor analysis classifies these all into a common first factor. Based on the dendrogram, the above variables constitute an independent branch.

Békés County

The issuance of bonds or development purposes, investment and development loans, other short-term liabilities and the service of investment and development loans has a correlation of a value of above 0.5 with the EEU funds granted to local municipalities. The results of the factor analysis and the dendrogram confirm this in the following way: the EU funds granted to local municipalities, the issuance of bonds for development purposes and investment and development loans are indicated as the first factor, whereas other short-term liabilities, the service of investment and development loans and other long-term liabilities form a separate group.[140] Based on the above, we can conclude that the issuance of bonds for development purposes and investment and development loans are particularly important in respect of EU funds.

[140] It is rather surprising that the factor analysis and the dendrogram include a variable that is practically uncorrelated.

Borsod-Abaúj-Zemplén County

The issuance of bonds for development purposes, investment and development loans and short-term loans are correlated with the EU funds granted to local municipalities in a value of above 0.88. The service of investment and development loans is correlated with EU funds in a value of -0.61; furthermore, it is also determined by the first factor in the factor analysis but oppositely to the former variables. This is probably due to the fact that the municipality started the debt service, which resulted in the commitment of available financial instruments. Based on the results of the cluster analysis, the issuance of bonds for development purposes, investment and development loans and short-term loans belong to the same group as EU funds, which leads us to the conclusion that these have a determinant role.

Csongrád County

There are several variables that are strongly correlated to EU funds. While investment and development loans, other long-term liabilities, short-term loans, other short-term liabilities and the service of investment and development loans and of other long-term liabilities are positively correlated with EU funds, the correlation value is -0.73 in the case of long-term loans. The results of the factor analysis confirm the relationship between the variables through classifying them all into a common first factor. Based on the dendrogram, EU funds belong to the same branch as other short-term liabilities, the service of other long-term liabilities, investment and development loans and the service of these and short-term loans.

Fejér County

There is a strong correlation of a value of 0.86 between EU funds and long-term loans for operating purposes and the service of these. In the case of the other variables there is no strong positive correlation. Unlike in the case of the above counties, the factor analysis only regards them as a second factor but still the three variables together.[141] On the whole, the results of the factor analysis and dendrogram confirm that the three above variables move together.

[141] The first principal factor includes investment and development loans and the service of these and other short-term liabilities with a positive sign as well as other long-term liabilities and the issuance of bonds for development purposes with a negative sign. Based on the theoretical part of the research, it is likely that loans were substituted.

Győr-Moson-Sopron County

There is a strong correlation of a value of 0.97 and 0.96 between EU funds and investment and development loans and the service of these respectively. In the case of the rest of the variables there is no strong positive correlation. The factor analysis regards EU funds granted to local municipalities as part of the second factor only but still together with investment and development loans. The same principal factor includes other short-term liabilities with a negative sign, which is also indicated by the correlation study with a result of -0.76. Nevertheless, the results of the dendrogram are reassuring since it classifies EU funds, investment and development loans and the service of these to the same branch.[142]

Hajdú-Bihar County

There is a strong correlation (of a value of above 0.9) between EU funds and investment and development loans and the service of these, the service of the issuance of bonds for development purposes and other short-term liabilities, and of a value of above 0.7 between EU funds and the supplier. At the same time, there is a strong negative correlation with long-term loans[143]. These results are also confirmed by the principal component analysis classifying all variables into the first principal factor with a high absolute value. Based on the dendrogram results, variables are on the same branch as EU funds – except for long-term loans.

Heves County

In respect of the variables concerned, Heves County bears a remarkable resemblance to Hajdú-Bihar County. The only relevant difference is that while supplier financing is typical in Hajdú-Bihar County, in Heves County short-term loans are more common. The principal component analysis and the dendrogram lead to the same conclusions as in the case of Hajdú-Bihar County, i.e. the variables are on the same branch as EU funds.

[142] Other short-term liabilities are not indicated on this branch of the dendrogram due its negative sign.
[143] Based on the theoretical part of the research, it is likely that long-term loans were substituted with investment and development loans, which is also confirmed by the correlation value of -0.986.

Komárom-Esztergom County

Correlation values are lower (around 0.8) than in the case of the counties examined earlier; however, the values related to investment and development loans and other short-term liabilities are preeminent. The results of the factor analysis do not show a clear picture in respect of EU funds since the variable is divided between the first two factors. Nevertheless, taking into account that the dendrogram results are in line with the variables in the second factor, and are on the same branch as EU funds, I do not reject the hypothesis for the case of the county.

Nógrád County

Correlation values are considerably lower than in the case of counties examined earlier. The role of short-term loans is preeminent, of which the correlation with EU funds is 0.66. Results of the factor analysis are different from earlier experience: EU funds only appear in the fourth factor but there with a high value (of 0.88); thus, the conclusions drawn only allow for a limited interpretation. Short-term loans are included in the same factor, with a weight of 0.77. In the dendrogram EU funds and short-term loans are on the same branch. Based on the above results, I cannot reject the hypothesis but cannot consider it as clearly approved either.

Pest County

Correlation values between the variables under examination and EU funds are very low. The highest correlation values are represented by the issuance of bonds for development purposes (0.39) and long-term loans for operating purposes (0.2). According to results of the factor analysis, EU funds are located in the fifth factor with a value of 0.76; thus, the conclusions drawn are rather unclear. Long-term loans for operating purposes are included in the same factor with a value of 0.71. Taking the above into account, the results of the dendrogram show that EU funds granted to local municipalities is independent; its relation to any of the variables under examination is not strong enough. As a consequence, I reject the hypothesis for Pest County.

Somogy County

There is a strong correlation (of a value of above 0.7) between EU funds and the issuance of bonds for development purposes, the issuance of bonds for operating purposes, investment and development loans, other long-term liabilities and the service of these and other short-term liabilities. These results are also confirmed by the principal component analysis through classifying all variables into the first principal factor with a high value (of above 0.8). Based on the dendrogram, each variable is on the same branch as EU funds.

Szabolcs-Szatmár-Bereg County

There is a strong correlation (of a value of above 0.85) between EU funds and the issuance of bonds for development purposes, short-term loans, and the service of supplier and other long-term liabilities. These results are also confirmed by the principal component analysis through putting all variables into the first principal factor with a high value (of above 0.93). Based on the dendrogram, each variable is on the same branch as EU funds.

Jász-Nagykun-Szolnok County

There is a strong correlation (of a value of above 0.7) between EU funds and the issuance of bonds for development purposes and the service of it as well as investment and development loans. Supplier and other short-term liabilities have a correlation value of above 0.6 with EU funds. A strong negative correlation exists in respect of long-term loans (-0.91) and the service of these (-0.83).[144] These results are also confirmed by the principal component analysis through putting all variables into the first principal factor with a typically high[145] absolute value. Based on the dendrogram, the variables are on the same branch as EU funds – with the exception of long-term loans and the service of these.

[144] Based on the theoretical part of the research, it is likely that long-term loans were substituted with either an issuance of bonds for development purposes or investment and development loans.
[145] The values are 0.65 and 0.54 for the service of supplier and investment and development loans respectively.

Tolna County

In the case of the observed variables, correlation values are weaker than in the case of most of the counties examined earlier. The issuance of bonds for operating purposes correlates with EU funds in a value of 0.71, while the same value is 0.57 for the issuance of bonds for development purposes and -0.68 for short-term loans.[146] The above are supported by the factor analysis results. Based on the results of the cluster analysis, EU funds are on a common branch with the issuance of bonds for operating purposes.

Vas County

There is a high correlation value between EU funds and investment and development loans and the service of these (0.91 and 0.92 respectively) and other short-term liabilities (0.87). Suppliers show a strong correlation with a negative sign (-0.82)[147]. The results of the factor analysis confirm the above through classifying all variables into the first principal factor with a high absolute value. Based on the dendrogram, investment and development loans and the service of these as well as other short-term liabilities are on the same branch as EU funds.

Veszprém County

Investment and development loans and short-term loans show a high correlation value (0.77 and 0.78) with the EU funds granted to local municipalities. According to the factor analysis results, these variables can be classified into the first principal factor with a high value (of around 0.9). Based on the dendrogram results, EU funds are on the same branch as investment and development loans and short-term loans.

Zala County

EU funds show strong correlation with several variables. While the correlation value is high for investment and development loans and the service of these (0.93 and 0.85), we should also take short-term liabilities (0.76) into consideration. Long-term loans for operating purposes and the service of these as well as the service of long-term loans and of other long-term liabilities also has a strong correlation value (0.66). The factor analysis classifies the above variables into two principal factors, which result is clearly shown on

[146] There is a strong negative correlation between short-term loans and bonds for operating purposes of a value of -0.946.

[147] Suppliers show a strong negative correlation with investment and development loans; however, I was not able to reveal the reasons for this during my research.

the dendrogram as well. Accordingly, it is beyond dispute that these have a considerable impact on EU funds but the research results do not indicate exactly how.

Conclusion

Taking into account that the hypothesis can be considered as clearly approved for the case of 16 counties, and should not be rejected in further 2 cases (Komárom-Esztergom, Nógrád), I consider it approved if narrowed for convergence regions while rejecting it for Pest County, i.e. the Central Hungarian region.

6.2.4. Testing Hypothesis H4

H4: The size, location and revenue structure of municipalities are factors which together determine the use of EU funds.

When testing the hypothesis, I regarded size, location and revenue structure as separate factors.

I regarded the period between 2004 and 2008 as a whole for the purposes of the testing since the EU funds paid to municipalities are not evenly spread among years. I created new variables based on the data included in the municipal budgetary report (form No. 80) taking the sum of the data for each year. Since the hypothesis aims at the examination of the revenue structure, I tested from the budgetary data only those related to the revenue structure.

To explore the database, I applied a Pearson-correlation study as a first step between the funds granted to municipalities and municipal revenues. Then I conducted a hierarchical cluster analysis on the variables with a correlation value of above 0.5, the results of which were taken into account when selecting the variables used for the linear regression applied for the actual testing of the hypothesis.

When selecting these, I also took into consideration what resources are the most likely to be used by a municipality for the provision of own resources necessary for getting funds. In line with the theoretical part of the research, these may include:

1. stock of cash
2. grants from the central budget
3. revenues shared or left by the central government to municipalities

4. sale of property
5. own source revenues, taxation
6. borrowing

Taking the above into account, the range of principal variables describing the revenue structure is the following:

1. stock of money at the end of the research period (Stock of money)
2. central budgetary grants to the municipality (Budgetary grants to a municipality)
3. revenues from personal income tax (Revenues from personal income taxes)
4. sale of tangible assets and immaterial goods (Sale of tangible assets and immaterial goods)
5. total own source revenues; local taxes; business tax; charges levied in connection with local taxes; revenues on interest (Municipal own soure revenues; Total local taxes; Total business taxes; Tax charge; Interest revenues)
6. receipt of short-term and liquid loans; issuance and sale of held-for-trading securities; receipt of long-term loans; sale and issuance of long-term securities; issuance of securities for investment purposes (Short-term and liquid loans; Long-term loans)

The selected variables include some that are in a subset-superset relationship such as total own source revenues including local taxes including the local business tax. This raises the question how these variables can be interpreted for the linear regression, and whether they deform the results of the model.

The question is particularly relevant if several of these variables are used for the estimation, i.e. at least two of them get into the model. In this case, we should interpret the superset as a complement of the subset which is taken into account by our linear regression model when establishing the final weights.[148]

Interpretation of size

Following the selection variables describing the revenue structure, based on a Pearson-correlation study, I concluded that the correlation value between the number of permanent

[148] E.g. if the model includes own source revenues with a weight of 2 including local taxes with a weight of 1.5; this means that local taxes are actually weighted 3.5 while own source revenues other than local taxes – i.e. the complement of the set – 2.

residents and the revenue structure is typically high at a country, regional or county level as well as in the territorial breakdown I created earlier. Calculations related to correlation are included in Sections a) and b) of Annex 14.

The above led me to the conclusion that the variables describing the revenue structure of a municipality are strongly determined by the number of residents; accordingly, it is unjustified to use the number of residents for the estimation since it is redundant. However, the statement is confirmed that if the empirical testing brings adequate results for the revenue structure, I can also consider those related to size approved.

Interpretation and testing of revenue structure and location
Using the above variables, I calculate linear regression for all units under observation in several ways, regarding the amount of EU funds granted to a municipality as a dependent variable in all cases. The applied method is stepwise linear regression[149]. During the analysis, I pay particular attention to the variables with the highest standardised coefficients which thus the most strongly determine the extent of funds.

Several options for a stratification according the location were raised. Testing can be interpreted in a breakdown by NUTS1 and NUTS2 regions as well as by my own classification based on the exploratory analysis; but I did not conduct the examination at the county, i.e. NUTS3 level due to its limitations: in the case of a population of 3151 items, stratifying it by counties and the receipt of funds, the number of items in each stratum would be so low that it would not ensure statistical stability.[150]

I. Examination of all municipalities in settlements disregarding geographical location

The model approximated (R^2=0.653) the amount of EU funds granted to municipalities with the involvement of six variables (Budgetary grants to a municipality, Revenues from personal income taxes, Sale of tangible assets and immaterial goods, Total local taxes, Long-term loans, Tax charge) of which central budgetary grants are the most determinative. Although this result supports the existence of the relationship, it is not sufficient yet to approve the hypothesis. Taking the results of the exploratory analysis into

[149] I applied the following during my research: the method makes the variable enter into the model if its significance level is below 0.05 and removes it from the model if its significance level is above 0.1.
[150] See also the table titled *"EU funds granted to municipalities in a NUTS3 county breakdown"* in Section o) of Annex 10.

account, it is likely that the results will improve or further relationships get revealed if we apply stratification according to geographical location. (Section cI. of Annex 14)

II. Examination of all municipalities in settlements taking geographical location into account

II. a) Breakdown by statistical large regions (NUTS1)

As a result of testing we see that results of the estimation get more accurate than at the country level for two regions (Central Hungary R^2=0.7; Great Plain and North R^2=0.761), while in the case of Transdanubia R^2=0.613, which result is weaker than at the country level. This is probably due to the heterogeneity of settlements. Nevertheless, we can conclude that the examination of the territorial breakdown is a relevant factor especially since it is only long-term borrowing that appears in all three regions from the variables involved in our country-level estimation but even this with different weights. In the case of Central Hungary, the extent of tax charges are determinative which is a rather surprising result compared the theoretical results of the research. In Transdanubia and the Great Plain and North region own source revenues and central budgetary grants are determinative. (Section cIIa. of Annex 14)

II. b) Breakdown by statistical regions (NUTS2)

Results of the model can be considered different for each region. Estimation accuracy improves with the exception of one region (Central Transdanubia where R^2=0.473). ($0.681 < R^2 < 0.929$) Estimation accuracy as well as the number and range of variables involved are rather diverse. The model involves different variables for each region; however, revenues from the sale of tangible assets and one of the variables own source revenues / local taxes / business tax can be considered recurring[151]. Regional differences appear, leading us to the conclusion that geographical location has a role in the distribution of the amount of funds. (Section cIIb. of Annex 14)

[151] appearing in all regions but Central Hungary

II. c) Breakdown by own classification

It is reasonable to compare this case to NUTS1 level results since they include 3 similar categories. Received results are in all cases more accurate than results of the NUTS1 level estimation.

According to the results, the category "Centre" defined by my own classification can be regarded as a transition area as compared to settlements in the "West" and in the "East" clearly separated from each other.

In the categories corresponding to each other R^2 results improve for "West" v. "Transdanubia" and "East" v. "Great Plain and North". (West R^2=0.895; Centre R^2=0.707; East R^2=0.781) (Section cIIc. of Annex 14)

III. Examination of municipalities that received funds disregarding geographical location

Results of the model are very similar to the previous case. The amount of EU funds is approximated (R^2=0.652) with the involvement of five variables (Revenues from personal income taxes, Sale of tangible assets and immaterial goods, Budgetary grants to a municipality, Total business taxes, Tax charge). In respect of the range of explaining variables, it is remarkable that the sale of tangible assets appears as a significant variable while central budgetary grants and revenues from personal income taxes continue to be determinative. Although this result supports the existence of the relationship, it is not sufficient to verify the hypothesis. Taking the results of the exploratory analysis into account, it is likely that the results will improve or further relationships get revealed if we apply stratification according to geographical location. (Section cIII. of Annex 14)

Nevertheless, it is also remarkable that the involvement of only the municipalities that received funds in the research scope brings about no significant changes in respect of the model results. Reducing the number of items would – in theory – necessarily improve the results; however, I exclude exactly those items (settlements that did not receive funds)[152] that can be well estimated probably. On the whole, this confirms that the variables used for estimation are adequate.

[152] See also results of testing Hypothesis H5.

IV. Examination of municipalities that received funds taking geographical location into account

IV. a) Breakdown by statistical large regions (NUTS1)

Model results are similar to those regarding the entire database. In the case of two regions, we get a more accurate estimation than at the country level (Central Hungary R^2=0.747; Great Plain and North R^2=0.757). For Transdanubia R^2=0.621, which is a slightly improved result.

There are hardly any changes in respect of the involved variables. Tax charges remain determinative for Central Hungary while in the Great Plain and North region central budgetary grants prevail. In the case of Transdanubia the sale of tangible assets becomes determinative. (Section cIVa. of Annex 14)

IV. b) Breakdown by statistical regions (NUTS2)

The model shows a more accurate picture than in the case of Section II. b). There are significant improvements in the R^2 values – except in the case of two regions –, and the range of involved variables is much narrower, which improves the transparency of the estimation and promotes understanding. One of the variables own source revenues / local taxes / business tax can be considered recurring, and long-term borrowing appears. It estimates with fewer variables compared to the NUTS1 breakdown and with the best results from among all models which demonstrates that it is justified to interpret results according to a territorial breakdown. (Section cIVb. of Annex 14)

IV. c) Breakdown by own classification

R^2 values generally improve both compared to case IV. a) and to II. c). From the variables, own source revenues and central budgetary grants have a determining role. There is a remarkable resemblance in the categories corresponding to each other, while the R^2 value improves in the "West" when compared to case IV. a) and in the "Centre" when compared to case II. c). Based on the results we can conclude that this can be considered one of the most accurate estimations, which also confirms that exploring the database was successful. (Section cIVc. of Annex 14)

Conclusion

Based on the revenue structure, the extent of funds granted to a municipality can be relatively accurately estimated using linear regression, as it is demonstrated by the high R^2 values. When we applied a territorial breakdown, results improved significantly in all cases, which indicates that geographical location is also determinative in respect of the use of EU funds. Taking the above analyses into account, I consider **Hypothesis H4 approved**.

6.2.5. Testing Hypothesis H5

H5: There is a group of municipalities defined according to size, geographical location and revenue structure in which the use of EU funds is not typical.

Taking the results of Hypotheses H1 to H4 into account, we have to assume that the revenue structure of municipalities that received funds differs from that of municipalities that did not. This has been supported by the testing of Hypothesis H4 where the linear regression results typically improved if we applied a territorial breakdown; furthermore, the variables involved in the model were also different when I examined the municipalities that received funds only.

I take the same variables as in the case of Hypothesis H4 to describe the revenue structure. I define each variable in terms of billion Forints in order to allow for an easier handling of coefficients and a more accurate interpretation of the results.

At the descriptive statistical analysis, I did not primarily focus on the extent of funds received but on the demonstration of whether a municipality received EU funds or not.

I examined it at the country level for each variable separately if there is a significant difference between municipalities that received funds and those that did not. This is included in details in Sections a and b of Annex 15 of my paper. Based on the t-tests, I rejected the assumption of equality of the variables among categories[153], which supports that they should be included in the model. (Sections c1 and c2 of Annex 15)

[153] i.e. municipalities that received funds and those that did not

Interpretation of size

We already observed during the examination of the hypotheses that the number of inhabitants strongly determines the variables describing the revenue structure of municipalities; therefore, it is unjustified to use the number of residents for the estimation since it is redundant. Thus, also for the testing of the present hypothesis, I consider the statement regarding size confirmed provided that the empirical testing brings adequate results in respect of revenue structure.

In the research period, only a little more than one third of municipalities received EU funds: the municipalities of 1108 out of the 3151 settlements under examination[154], which has a significant impact on the estimation. We should note, however, that in the case of funds under the New Hungary Development Plan in the 2007-2013 programming period, the proportion of municipalities that have received funds is considerably higher; thus, the results obtained from the examination of the present hypothesis cannot be generally accepted for the currently ongoing 2007-2013 programming period.[155]

I use binary logistic regression (logit model) for testing the part of the hypothesis regarding revenue structure, which method is suitable for estimating the value of binary variables. My objective is to define a range where the model estimates it with a high level of assurance that a settlement has not received EU funds. My aim is not to provide a forecast but to define groups of settlements where the fact of the receipt of funds by the municipality is typical or atypical.

Based on descriptive statistical results it is seen (Section i) of Annex 10) that the receipt of funds is atypical in the case of settlements with less than 500 inhabitants, while large cities with more than 50 000 inhabitants have all received EU funds. With the increase of settlement size, the proportion of municipalities that received funds grows in every region regarding the NUTS1 level, which statement is also valid for the NUST2 level – apart from some cases of a small number of items[156]. (Section i) of Annex 10)

[154] See also the data indicated in Annex 10.
[155] In the 2007-2013 programming period, the municipalities that receive funds can probably be more accurately estimated.
[156] In the case of Western Hungary the proportion is 40% for settlements with 5000-9999 inhabitants and 50% for settlements of 10 000-49 999 but the number of items is very low (2:3 and 4:5); In Southern Great Plain the proportion is 6.9% for settlements with 5000-9999 inhabitants and 15.8% for settlements of 10 000-49 999 but the number of items is very low (2:27 and 3:16).

The applied method is forward selection conditional logistic regression. The procedure involves and removes variables from the model one by one taking into account how significant each variable is for the given model as a whole[157], i.e. "the model is extended with significant variables step by step". (Kovács 2009) Nevertheless, it is important to note that I also run the logistic regression tests necessary for examining my hypothesis using the enter method and the results were almost the same as with the above method.

Logistic regression is a classification procedure classifying units of observation into mutually exclusive categories – received funds or did not – based on the values taken by a classification function. Classes are defined by the relation of a cutpoint determined freely in advance and the function value.[158] I performed the test in several steps from two different directions: on one hand, I approached from the direction of those that did not receive funds, and on the other hand, from the direction of those that did, in a way so that the accuracy for the class under examination exceeded 80%. To achieve this, I altered the cutpoint value so that maintaining the 80% accuracy, as many items as possible got into the class under examination.

When testing the hypothesis, I followed the same order as in the case of Hypothesis H4 because this makes results easier to be interpreted and compared both to each other and to Hypothesis H4.

As a first step, I performed the logistic regression study at the ***country*** level, the results of which are included in Sections d1 and d2 of Annex 15. In the tables included in the Annex, I used the term "Yes" to indicate the cases when I examined the class of those that received funds and the term "No" to refer to the cases when I examined the class of those who did not receive funds. Based on the results we can conclude that there is a group of settlements (of 1813 items) in which, based on the revenue structure, with 80% accuracy (1461 settlements) it is true that they did not receive funds. Similarly, we can also state that there is a range of settlements (294) where the receipt of funds is typical (238 settlements). Altogether, using the two estimations, we classify 1699 settlements correctly. As a next step, taking the results of Hypothesis H4 into account, I attempt to substantiate the territorial stratification where model results can be further improved.

[157] I applied the following during my research: the method makes the variable enter into the model if its significance level is below 0.05 and removes it from the model if its significance level is above 0.1.
[158] In this case, the model classifies the items with an estimation function value under the cutpoint into the class "did not receive funds" and the items above the cutpoint into the class "received funds".

As a second step, I conducted the analysis at the level of ***NUTS1 large regions***, the results of which are included in Sections e1 and e2 of Annex 15. Results improve if we apply a different estimation function for each large region: items in classes "did not receive funds" are correctly classified in 1476 cases and in classes "received funds" in 283 cases. Accordingly, we can conclude that, applying the same accuracy value (80%), more items are matched both in the "Yes" and the "No" category; thus, the stratification by large regions leads to a slight (3.5%) improvement.

Sections f1 and f2 of Annex 15 feature the results of the analysis at the level of ***NUTS2 statistical regions***. Previously, I expected a significant improvement from the test results taking into account that there are development disparities between each region. The results received are rather surprising since despite the fact that the function estimates the settlements that received funds[159] better (291), in the case of the "No" group, the proportion of matches declines significantly compared to the NUTS1 level, from 1476 to 1168. However, this may be due to the fact that for the Southern Great Plain region there is no cutpoint that would allow for reaching 80% accuracy in the "No" category. Accordingly, the model estimation for this class is rather uncertain. On the whole, we can conclude that the result declines from 1759 to 1459, i.e. by 17 percentage points, compared to the NUTS1 level.

Taking into account that the results of the NUTS1 level breakdown improved compared to the country level, I also performed the analysis according to my own classification, the results of which are included in Sections g1 and g2 of Annex 15. In the "Yes" class results improved from 238 to 288, while in the "No" class there was a decrease from 1461 to 1416. On the whole we see that this breakdown brings only slightly better results than the country level analysis and worse than the estimation at NUTS1 level.

The result of the different territorial breakdowns is not significantly different from those received at the country level; geographical location on its own does not have an obvious influence on the estimation results, i.e. whether a settlement received funds or not. Nevertheless, we should note that – based on the above – the differences among regions are due to the type – meaning the number of residents – of settlements that are typical for each area.

[159] i.e. items in the "Yes" group

The analysis according to territorial breakdown shows rather poor results; thus, is decided to test the hypothesis from a different perspective. Based on the descriptive statistics (Section i) of Annex 10) we saw that funding is atypical in the case of settlements with a low number of inhabitants while it is typical for large cities. Therefore, I reperformed the examination using a stratification according to the breakdown by the number of inhabitants of settlements, as follows:

1. settlements with less than 500 inhabitants;
2. settlements with 500-999 inhabitants;
3. settlements with 1 000 – 4 999 inhabitants;
4. settlements with 5 000 – 9 999 inhabitants;
5. settlements with 10 000 – 49 999 inhabitants;
6. settlements with more than 50 000 inhabitants.

In the case of settlements with less than 500 inhabitants, the logit model necessarily cannot bring additional results compared to those of descriptive statistics since more than 80% of settlements with less than 500 inhabitants did not receive funds. Similarly, no new information is provided by the logistic regression compared to descriptive statistics in strata 5 and 6, i.e. for settlements with more than 10 000 inhabitants, as these typically received funds. (Section h of Annex 15)

The logistic regression weakly estimates the fact of the receipt of funds in categories 2 and 3. (Section i of Annex 15) As part of my theoretical research, I also applied further breakdowns by size or geographical location but the results of these altogether do not reach the desired value of accuracy either.

On the whole we can conclude that the logistic regression does not bring significantly more accurate results if we apply breakdowns compared to the country level; geographical location is not determinative. The model does not provide any additional information compared to descriptive statistical results. **Taking this into account, I reject the hypothesis in its original form.**

Summary, conclusions and further research directions

Logical framework

I have multiple objectives with the last brief chapter of my thesis: firstly, I present the logical framework which the paper is based on in a synoptic approach; secondly, I briefly assess the results of my research using a critical perspective; and thirdly, I draw up the possible further research directions.

In line with the policies of the European Union, the objective of Hungary‟s EU accession was to promote the catching-up of the country, i.e. the reduction of regional disparities and the enhancement of social and economic cohesion. One of the instruments of achieving these objectives that has so to say proved to be working based on the experience of other member states is regional policy. In my thesis, I briefly presented the past and present of regional policy, and located Hungary as one of the newly acceding member states in 2004 within this framework. The funds provided by the EU can contribute to a region‟s takeoff on the way of spectacular development, which was previously lagging behind; and thus, to the reduction of development disparities.

The principles of the EU funding policy set up rather clear boundaries at the theoretical level to the possibilities of member states applying for funds. From among the numerous important principles, my paper focuses on additionality: contributions have to be added both at the governmental and at the local level in order to provide that the funds are used as a complement to the implementation of each project.

In line with the regionalism principle, decisions shall be made at an active local level in order to achieve development objectives, for which, adequate resources are also needed beyond creative ideas and plans. When studying additionality, the focus of my research is laid on the local level, in particular, on Hungarian municipalities.

“Grasp all, lose all” – as the old saying points out. Even though I perceived all the difficulties and threats implied in this during my research, I still intended it to be of a multidisciplinary nature: I examined additionality interpreting it in a rather narrow sense, through the range of Hungarian municipalities as beneficiaries. Nevertheless, even this narrow interpretation required a presentation of the related theoretical context of regional policy as well as of the specific features of municipalities in Hungary.

This duplex nature of the paper truly reveals in the theoretical introductory part since I attempt basically to combine several disciplines significantly different from each other, each of which may well constitute the subject of a separate research and thesis. Therefore, I could not aim at the thorough and profound analysis of every related piece of literature; however – through the presentation of the principal theoretical directions –, I tried to reveal the connections which allow for the combination of the different disciplines.

When studying municipalities in Hungary, following a brief presentation of the historical context, I focused on the ways in which municipalities are able to raise the resources needed for development and on what the price of this is. I could not spare the discussion of the indebtedness procedures strongly emphasized in domestic literature; nevertheless, the focus of the thesis and of the hypotheses established is not primarily laid on the discussion of indebtedness procedures but on the relationship between these and the provision of additionality.

Since I established the relationship between regional policy and municipalities using the field of EU funds as an area of practice, recapitulative approaches of the practical direction necessarily form an integral part of my paper.

The part of my paper preceding the setting up the hypotheses may seem excessively fragmented and each chapter separated from the others, which is not by mere chance but due to the specific technique of the construction of my message. While there has been numerous studies written in the fields of both regional policy and municipal financial management separately; there are unfortunately few examples in the literature of combining the two disciplines.

In parallel to my empirical research, I continued to work for the further extension of the theoretical context in order to present the transition between the two scientific fields as some kind of a bridge. From the very beginning of my research, I considered it risky that I may get to numerous analytical results during the empirical testing of my hypotheses, the reasons for which are not known yet.

Summary of research results

It is already stated in domestic literature (by Vigvári) – based on multidirectional theoretical analysis and descriptive statistical methods – that the golden rule is not applied in Hungary. Thus, in this respect, I do not consider ***Hypothesis H1*** of my thesis as an entirely novel theoretical result. However, in the course of the empirical testing – using a descriptive equation – I verified that the development of municipal borrowing is connected with changes in the stock of financial instruments, in the investment balance and in the operating balance. Accordingly, through empirical testing I confirmed the theoretical analysis according to which borrowing is aimed at three main objectives: promoting investments through capital expenditure, financing the operating balance deficit and, partly, savings. As a second step of empirical testing I verified that the estimation equation is not valid if we disregard operating balance; accordingly, municipalities do use part of the received loans for operating objectives. In the course of the empirical testing, I operationalised the term *borrowing* in two different ways: in a narrower and in a broader sense.

In connection with Hypothesis H1 a further research direction may be the disclosure of novel relationships in the case of borrowing defined in the narrower sense for settlements that are not part of the model. It is considered another research direction if we involve new variables in the estimation equation or interpret definitions in different ways – as in the case of borrowing.

Taking into account the results of testing the hypothesis – inter alia – I agree with domestic researchers (Vigvári) that resorting to debt of Hungarian municipalities is atypical and that a comprehensive state budgetary reform is needed in order to ensure that processes and financial management methods are transparent and accordingly, results are adequately measurable. Unfortunately, the empirical part of the research made me face the lack of consistence in the dataset available – in particular in respect of the reports prepared by municipalities – as well as the fact that available data is not complete; the reports do not provide us with a full picture of actual property, financial and income conditions, future liabilities and items not included in the balance sheet of municipalities.

With ***Hypothesis H2***, I verified in several steps that European Union funds play a determinant role in municipal investments. Pearson-correlation between the variables is

high; however, this alone does not yet substantiate the existence of causality between them. In order to substantiate the hypothesis, I examined the variable of average per capita investment in relation to settlements that received and settlements that did not receive EU funds. When testing the hypothesis, I selected the number of inhabitants as the criterion to define strata; through defining strata I mitigated the effect of the determination of the number of inhabitants as underlying variable[160]. Based on the results obtained, it can be clearly stated that per capita investment and development expenses are higher in the case of settlements with than in the case of municipalities without EU funding in each stratum. I tested the significance of the difference using the t-test and the Welch-test, as a result of which I concluded that – disregarding settlements with less than 200 inhabitants – difference is significant.

On the whole, this hypothesis could serve as basis for assumptions such as EU funds affect municipal development. Staying within the framework of my present research, I refrain from stating this taking into account that per capita investment and development expenses – presumably due to economies of scale – show a downward trend in the case of large cities. Nevertheless, the hypothesis verified as part of the present thesis – completed with macroeconomic analytical tools – may serve as basis for examining whether developments and investments are carried out in an economical way.

There are diverse possible further research directions, one of which is to define strata according to geographical location. This is limited primarily by the fact that using a territorial breakdown, the number of units of observation in each stratum would significantly decrease, which would already be a threat for statistical stability. On the other hand, it would be possible to compare Hungarian municipal investment and development expenses to those of regions of similar development conditions of other member states (e.g. to border regions of neighbouring countries).

Hypothesis H3 is aimed at testing the applicability of additionality in the case of municipalities. Using the Pearson-correlation test I verified that a strong positive correlation exists between the EU funds granted to municipalities and the municipalities‟ own source revenues and financial balance no matter if we break it down according to

[160] The following strata were defined: settlements with less than 200 inhabitants, 200-499, 500-4999, 5000-9999, 10 000-49 999, settlements with more than 50 000 inhabitants. Each of the settlements with more than 50 000 inhabitants received EU funds.

NUTS1 statistical large regions, NUTS2 regions or NUTS3 counties. Accordingly, the hypothesis verifies that the principle of additionality applies at the level of municipalities in Hungary. A further research direction related to the hypothesis would be to perform the correlation study not in a breakdown by geographical location but according to stratification by the number of residents or to involve further variables (e.g. the stock of money) in the scope of analysis.

Following the approval of Hypothesis H3, it became justified to examine ***Hypothesis H3.1***, according to which there are connections between the use of EU funds and municipal indebtedness. As the indicator of municipal indebtedness, I selected the increase in liabilities defined as the difference of the 2008 closing value and the 2004 opening value of stock-type data in the municipal balance. As part of the empirical research, I applied a threefold approach: firstly, using the Pearson-correlation test I examined the relationship between indicators related to liability and the EU funds granted; then, I used principal component analysis to find out which indicator belongs to the same factor as the EU funds granted. As a third step, I conducted a cluster analysis to review which indicator gets onto the same branch as EU funds. The analyses were carried out in a breakdown by counties because the exploratory analysis led me to the conclusion that the relationship differs by county. In the case of 16 counties, the hypothesis can be clearly approved, in the case of further 2, it cannot be clearly rejected; however in the case of Pest County, it does not apply.

The first step of further research could be of the theoretical kind: the reasons (e.g. disparities in economic development, industrialisation, urbanisation, political orientation) underlying the similarities and differences between counties should be mapped. After this, a new round of empirical tests could be performed, not only at a county level but also on larger units, using other parameters to define groups. Similarly to the other hypotheses, the examination of the increase in liabilities in the case of other member states and its comparative analysis with Hungarian municipalities could be another possible research direction.

With ***Hypotheses H4 and H5*** I could substantiate that the size, geographical location and revenue structure of municipalities are factors which together determine the use of EU funds; however, I rejected the assumption that there is a range of municipalities in which the use of EU funds is not typical.

As a first step of testing Hypothesis H4, I used linear regression to create a country-level estimation function. Then I created further estimation functions with different territorial breakdowns, which made a more precise estimation of the extent of funds granted to municipalities possible. The range of variables involved in the estimation function as a result of the linear regression is not the same, which – in accordance with Hypothesis H3.1 – leads to the conclusion that geographical location and revenue structure are determinative.

Further research direction arise in connection with the hypothesis: it would be useful to investigate the reasons why spatial location is so much determinative in respect of the variables involved; what underlying causes are there behind the different estimation functions. Beyond the original hypothesis, the estimation could also be applicable with the involvement of other variables; however, empirical testing must be preceded by further theoretical research. When testing the hypothesis I interpreted the variables in a cumulative way; thus, going beyond this method, trend calculation and forecast models could also be generated.

I performed the testing of Hypothesis H5 in logistic regression, using multiple methods, involving the same variables as in the case of Hypothesis H4. I consider it as a surprising result that multivariate data analysis methods could not provide results beyond the trivial descriptive statistical outcome – according to which, EU funding for municipalities is not typical in the case of settlements with less than 200 inhabitants –; therefore, I rejected the hypothesis in its original form.

On the other hand, it cannot be stated either that there is no group of municipalities defined according to size, geographical location and revenue structure in which the use of EU funds is not typical. In the course of the analyses, it was found that the fact of the receipt of funds had occurred relatively rarely in the case of the municipalities of the smallest settlements in the 2004-2008 period; while in the case of large cities, the municipality of almost all settlements had received EU funds. Based on this, trivial substatements can be proved; however, apart from the two cases – which can be considered as relatively extreme – I was not able to draw conclusions which would be applicable for most settlements.

A possible research direction is the exclusion of the extreme cases, i.e. the trivial set, from the research scope; then, using some parameters (e.g. geographical location) to define strata, to perform the analysis with a different method. Since the original hypothesis was related to a variable which took on two values (either *received funds* or *did not*), it seems that other multivariate data analysis techniques – such as cluster analysis – can only be applied restrictedly. Accordingly, as a first step, another hypothesis should be drawn up which is different but of similar content and which can be tested with multivariate data analysis methods other than logistic regression. One such way could be if – based on the descriptive statistical results and the unsuccessful results of logistic regression which were drawn up as part of the present research – we redefine the original hypothesis to relate to settlements with a certain number of inhabitants (e.g. under 500 persons), and test it with other multivariate data analysis tools.

In respect of Hypothesis H5, it should also be taken into consideration that the research period is crucial: in the present research, data of the 2004-2008 period were taken into account, while in the 2007-2013 programming period currently in progress, due to the increased amount of resources, the range of settlements the municipalities of which do not receive funds at all is expected to get narrower. When the 2007-2013 programming period is closed, it could also be worth examining the two periods together.

A further research direction is if we do not limit the hypothesis to the range of municipalities but interpret it in respect of each settlement as a whole, i.e. we include actors of the private sector as well, and search for relationships with indicators characterising the settlement as a whole (e.g. the number and rate of the unemployed, amount of benefits paid, etc.). This, however, would significantly go beyond my original research objectives, i.e. the study of municipal additionality.

Even though I have presented some possible further research directions one by one for each hypothesis when summarising the results, due to the multidisciplinary nature of the research, there are numerous fields we shall mention.

When testing the hypotheses empirically, the present research focused on the years 2004-2008 both in respect of EU funds and the reports of municipalities. In the case of most hypotheses – in order to mitigate cyclicality between years – I either interpreted the data in a consolidated, cumulative sense or as the difference of the closing and opening value

of the research period. It is partly the results of the exploratory analysis and partly the testing of each hypothesis that has led me to the conclusion that – in line with what is stated in the literature referred to in the theoretical section – ***time*** can be a crucial determinant in respect of the variables under examination.[161]

When the 2007-2013 programming period is closed, the empirical results of two funding periods will be available. Having the data of the 2004-2013 period, one could well depart from the methods applied in the framework of the present thesis: trend detection and time series will become possible ways of conducting research in the domain of EU funds. After the current programming period is closed, it will be possible not only to study the 2004-2013 period as a whole but also to compare the two programming periods, i.e. to examine processes separately in respect of the 2004-2006 and the 2007-2013 period.[162] Beyond classic time series analysis, one can create estimation functions that are reliable in the statistical sense; however, this needs rather large resources. As a simpler option, the present research can also be repeated for another period of time, as some kind of panel review.

During my research I found that geographical location as well as the stratification of settlements according to different aspects can also prove to be a crucial determinant. Taking this into account, other criteria to define strata could be developed – both in respect of geographical location and size; moreover, the rank of settlements could also be taken into consideration.

A broader interpretation of research directions

For the purposes of the present thesis, I used a narrowly defined interpretation of additionality; and disregarded the examination of not only the central level but the entire private sector; however, I had good reasons to do that.

In the first phase of my research, I reviewed the diverse set of theoretical approaches in details through studying relevant international literature, and unfortunately, I was unable to find any comprehensive studies starting from the micro level and heading bottom-up

[161] An example is the surge in the number of bonds issued by municipalities at the end of the research period.
[162] This is a particularly interesting research topic since the amount of funds granted to Hungary in the current 2007-2013 programming period is much higher than in the period examined in the present research; accordingly, the extent of funding as well as the range of beneficiaries is expected to get enlarged.

that would have been aimed either at the efficiency of the measuring of funding, or at the provision of additionality. However, as part of the theoretical grounding of my present research, I presented in details the anomalies related to the measurability of funds and the possible methodological framework.

Based on the above, I think my research could lead to numerous further directions even if we stay within the narrowly defined domain of additionality: first of all, the study of additionality in Hungary can be extended to the governmental sector, and to non-municipality beneficiaries, by which term I primarily mean small and medium-sized enterprises and non-governmental organisations operating in the private sector.

The research may also be extended starting from Hungary and shifting the scope of the research towards other EU member states: the issue of additionality could be studied both at the level of beneficiaries and at the governmental level in other member states, either in countries that have joined the EU together with Hungary or in the entire territory of the Union. Scope of the examination could comprise specific countries, while a comparative study could also be conducted. Obviously, the scope such a comprehensive research should not be reduced to the narrowly interpreted examination of additionality but would be extended to the application of the rest of the important principles. In addition, beside the comprehensive study of basic principles, the in-depth economic analysis of each member state is also a necessary component of such an extensive research considering that the social, economic and political conditions in Europe are rather diverse.

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References

Studies, periodicals, analyses

Állami Számvevőszék (2012): *Összegzés a helyi önkormányzatok pénzügyi helyzetének és gazdálkodási rendszerének 2011. évi ellenőrzéseiről* (No. 1282). Állami Számvevőszék, Budapest.

Állami Számvevőszék (2007): *A közpénzügyek szabályozásának tézisei.* Állami Számvevőszék, Budapest.

Antalóczy–Aradi–Bodor–Fülöp–Győrffi– Győrffi–Lacó–Printz (2010): *A számvitel időszerű kérdései 2010. A könyvviteli szolgáltatást végzők kötelező továbbképzéséhez.* Perfekt, Budapest.

Bágер, G. – Vigvári, A. (2007): *Államreform, közpénzügyi reform. Nemzetközi trendek és hazai kihívások.* Állami Számvevőszék Fejlesztési és Módszertani Intézet.

Balassa, B. (1961): *The Theory of Economic Integration,* Richard D. Irwin, Homewood, Illinois.

Balassone, F.–Franco, D.–Zotteri, S. (2004): Fiscal Rules for Subnational Governments: Lessons from the EMU. In: Kopits, G. (szerk.) *Rules-Based Fiscal Policy in Emeging Markets. Background, Analysis and Prospects.* Palgrave Macmillan kiadás, International Monetary Fund, London, 219–234. o.

Banai, P.B. (2010): 2004. május 1.–2009. december 31. – Több mint öt év az unió tagjaként: az első időszak pénzügyi mérlege. *Külgazdaság*, LIV. évf. 7–8. sz. 3–39. o.

Banai, P.B. (2008): Fejlesztés egyenlő eladósodás? Az addicionalitás szabálya és az államháztartási hiány kapcsolata. *Fejlesztés és Finanszírozás.* 2008. 4. sz. 55–63. o.

Barca, F. (2009): *An Agenda for a Reformed Cohesion Policy. A place-based approach to meeting European Union challenges and expectations.* European Commission.

Baricz, R. (1999): *Mérlegtan.* 3. átdolgozott kiadás, Aula, Budapest.

Barna, O. (2003): Önkormányzati Támogatások a Közösségi Jog Tükrében. *Jogtudományi Közlöny.* 58. évf. 10. sz.

Barry, F. –Bradley, J. –Hannan, A. (2001): The Single Market, the Structural Funds and Ireland's Recent Economic Growth. *Journal of Common Market Studies,* 39. évf. 3. sz. 537-552. o.

Benczes, I. (2003): Tétlenség vagy reform: releváns nemzetközi magyarázatok hazai viszonyok között. *Stratek Füzetek,* Miniszterelnöki Hivatal, 16. szám, 189-220. o.

Bende-Szabó, G. (2004): Regionális önkormányzati feladat- és hatáskörök. In: Horváth M. Tamás (szerk.): *A regionális politika közigazgatási feltételei : Variációk az uniós csatlakozás küszöbén*. Magyar Közigazgatási Intézet, Budapest

Bennett, R.J. (1998): Local Government in post socialist cities. In: Enyedi Gy. (szerk.): *Social Change and Urban Restructuring in Central Europe*, Akadémiai Kiadó, Budapest, 35-54. o.

Bennett, R.J. (1997): *Local government in post-socialist cities,* LGI, Budapest.

Béres, A. (2008): *A Nemzeti Fejlesztési Terv keretében a KKV-k számára megítélt technológiafejlesztési támogatásoknak a vállalkozások beruházásaira és növekedésére gyakorolt hatásának elemzése (GVOP 2.1.1)*, Nemzeti Fejlesztési Ügynökség, Budapest.

Beugelsdijk, M. –Eijffinger, S.C.W. (2005): The Effectiveness of Structural Policy in the European Union: An Empirical Analysis for the EU–15 in 1995-2001. *Journal of Common Market Studies,* 43. évf. 1. sz., 35-49. o.

Bilan, IrinaRusu, Elena (2008): Financing Local Infrastructure Investments in Romania and Other New Eu Member States. *Annals of the University of Oradea, Economic Science Series,* 17. évf. 3. sz. 97-102. o.

Bird, R.M.–Wallich, C.I. –Péteri, G. (1995): Financing local government in Hungary. In: Richard M. BirdRobert D. EbelChristine I. Wallich (szerk.): *Decentralization of the socialist state : Intergovernmental finance in transition economies.* The World Bank, Washington. 69116. o.

Blankart, C.B. Klaiber, A. (2006): Subnational Government Organisation and Public Debt Crises. *Economic Affairs,* 26. évf., 3. sz., 48-54. o.

Bradley, J. Untiedt, G. (2007): *Do economic models tell us anything useful about Cohesion Policy impacts? A comparison of HERMIN, QUEST and ECOMOD.* GEFRA, Münster.

Bradley, J. Mitze, T. Morgenroth, E. Untiedt, G. (2005): *An Integrated Micro-Macro (IMM) approach to the evaluation of large-scale public investment programmes. The case of EU Structural Funds*, GEFRA, Münster.

Cappelen, A. Castellacci, F. Fagerberg, J. Verspagen, B. (2003): The Impact of EU Regional Support on Growth and Convergence in the European Union. *Journal of Common Market Studies,* 41. évf., 4. sz., 621-644. o.

Chenery, H. Bruno, M. (1962): Development Alternatives in an Open Economy: the Case of Israel. *Economic Journal,* 77. évf. 285. sz. 79-103. o.

Churski, P. (2008): Structural Funds of the European Union in Poland - Experience of the First Period of Membership. *European Planning Studies,* 16. évf. 4. sz. 579-607. o.

Cooke, P. (2009): The Knowledge Economy, Spillovers, Proximity and Specialisation. In: Pontikakis, D., Kyriakou, D., van Bavel, R. (Eds.): *The Question of R and D Specialisation. Perspectives and Policy Implications*. JRC Scientific and Technical Reports, European Commission DG for Research.

Csipai, M. Vigvári, A. (2009): A helyi pénzügyek fejlesztésének néhány nemzetközi tapasztalata. *Pénzügyi Szemle.* 54. évf. 23. sz. 451458. o.

Csiszárik-Kocsir Ágnes (2008): A magyar helyhatóságok eladósodása az ezredforduló után; *Tér és Társadalom*, 22. évfolyam, 2008/4, 81-95. oldal

Dafflon, B. (szerk.) (2002): *Local Public Finance In Europe. Balancing the Budget and Controlling Debt.* Edward Elgar, Cheltenham–Northampton.

Dafflon, B. Beer-Tóth, K. (2009): Managing Local Public Debt in Transition Countries: an Issue of Self-Control. *Financial Accountability and Management,* 25. évf. 3. sz. 305333. o.

Dall'erba, S. (2007): The Impact of EU Regional Support on Growth and Employment. *Finance a úvěr - Czech Journal of Economics and Finance.* 57. évf. 7-8. sz. 325-339. o.

Dall'erba, S. (2005): Distribution of regional income and regional funds in Europe 1989-1999: An exploratory spatial data analysis. *Annals of Regional Science,* 39. évf. 1. sz. 121-148. o.

Dankó, G. – Lóránt, Z. (2010): Az önkormányzati szabályozással szembeni kihívások. *Pénzügyi Szemle.* 55. évf. 3. sz. 493–499.

Davey, K. Péteri, G. (2004): Local government finance: General issues. In: M. Kopányi-D. WetzelD.S. El (szerk.): *Intergovernmental Finance in Hungary.* Co-publication of The World Bank and Opean Society Institute, Budapest, 135-145. o.

De Rooij, R. (2002): The impact of the European Union on local government in the Netherlands. *Journal of European Public Policy,* 9. évf. 3. sz. 447-467. o.

Domokos, L. (2012): *Az önkormányzati ellenőrzések tapasztalatai.* Állami Számvevőszék, Budapest.

Durlauf, S.N. Johnson, P.A. (1995): Multiple regimes and cross-country growth behaviour. *Journal of Applied Econometrics.* 10. évf. 4. sz. 365-384. o.

Fáyné Péter Emese (2002): Integrált területfejlesztés az Európai Unióban Tanulságok hazánk számára. *Humánpolitikai szemle.* 13. évf. 7-8. sz. 19-26. o.

Fleurke, F. Willemse, R. (2007): Effects of the European Union on Sub-National Decision-Making: Enhancement or Constriction? *Journal of European Integration.* 29. évf. 1. sz. 69-88. o.

Forgácsné Orosz, V. (2000): A Regionális Önkormányzatok Európai Chartájának tervezete és a magyar regionalizáció lehetőségei. In: Szigeti E. (szerk.): *Régió, közigazgatás, önkormányzat.* Magyar Közigazgatási Intézet, Budapest, 65-83. o.

Fox, W.F. (2004): Intergovernmental Finance: Summary and Evaluation. In: M. Kopányi-D. WetzelD.S. El (szerk.): *Intergovernmental Finance in Hungary.* Co-publication of The World Bank and Opean Society Institute, Budapest.

Franco, D. Balassone, F. Francese, M. (2003): Fiscal Policy in Europe: the Role of Fiscal Rules. In: National Tax Association (szerk.): *Proceedings of the 95th Annual Conference of 2002* Washington, USA.

Fürcht, P. (2009): Sok a helyi önkormányzat Magyarországon!? *Új magyar közigazgatás.* 2. évf. 3. sz. 43-47. o.

Füstös, L. Kovács, E. Meszéna, G. Simonné Mosolygó, N. (2004): *Alakfelismerés. Sokváltozós statisztikai módszerek.* Új Mandátum Kiadó, Budapest.

Füstös, L. Simonné Mosolygó, N. Meszéna, G. (1986): *A sokváltozós adatelemzés statisztikai módszerei.* Akadémiai Kiadó, Budapest.

Futó, P. (2009): *Az értékelés és a hatásvizsgálat módszereinek alkalmazása a kisvállalkozás-fejlesztési politikában. A közép- és kelet-európai országok gyakorlatából merített esettanulmányokkal*. Budapesti Corvinus Egyetem, Budapest.

Gál, E. (2010): Önkormányzatok és kereskedelmi bankok a pénz- és tőkepiac keresleti és kínálati oldalán. *Hitelintézeti Szemle*, IX. évfolyam, 3. szám, 290-306. oldal

Goglio, A. (2007): Encouraging Sub-National Government Efficiency in Hungary. *OECD Papers,* 7. évf. 7. sz. 1-36. o.

Győrffi, D. – Vigvári, A. – Zsugyel, J. (2009): *A közpénzügyek nagy kézikönyve.* CompLex, Budapest.

Gyulai P. (2000): Önkormányzatok az EU-csatlakozás folyamatában. *EU Working Papers.* 3. évf. 3. sz. 3-18. o.

Halmosi, P. (2005): Az önkormányzati hitelfelvétel szabályozásának motivációja az Európai Unió országaiban. *Hitelintézeti szemle.* 4. évf. 1. sz. 68-77. o.

Hegedűs, J. Tönkő, A. (2006): *Az önkormányzati gazdasági társaságok szerepe a helyi önkormányzatok vagyongazdálkodásában: a feltételes kötelezettségvállalás problémája.* Városkutatás Kft., Budapest.

Hetényi, I. (2004): Adózási dilemmák. *Fejlesztés és finanszírozás.* 2004. 3. sz. 53-62. o.

Homolya, D. Szigel, G. (2008): Önkormányzati hitelezés-kockázatok és banki viselkedés. *MNB Szemle,* szeptember.

Horváth, Gy. (2001): Az Európai Unió regionális támogatási politikája a 2000-2006 közötti időszakban. *Európai tükör.* 6. évf. 2-3. sz. 75-105. o.

Horváth, M.T. Bende-Szabó Bilecz Horváth Pálné Kovács Perger Péteri Szigeti Winkler (2004): *A regionális politika közigazgatási feltételei. Variációk az uniós csatlakozás küszöbén.* Magyar Közigazgatási Intézet, Budapest.

Hunyadi, L. Mundruczó, G. Vita, L. Kerékgyártó, G. (2001): *Statisztika.* 4. kiadás, Aula, Budapest.

Illés, I. (2002): A területfejlesztés pénzügyi eszközei az Európai Unióban és Magyarországon. *Pénzügyi szemle.* 49. évf. 7-8. sz. 677-698. o.

Iván, G. (2001): A 2006 utáni közös regionális politika. *Európai tükör.* 6. évf. 2-3. sz. 106-128. o.

Járosi, P. Koike, A. Thissen, M. Varga, A. (2009): Regionális fejlesztéspolitikai hatáselemzés térbeli számítható általános egyensúlyi modellel: A GMR-Magyarország SCGE modellje. *MŰHELYTANULMÁNYOK 4. sz.* Pécsi Tudományegyetem Közgazdaságtudományi Kar Közgazdasági- és Regionális Tudományok Intézete, Pécs.

Jenei, G. Szalai, Á. (2002): Modernizing local governance in a transitional nation Evaluating the Hungarian experience. *Public Management Review.* 4. évf. 3. sz. 367-386. o.

Jókay, K. Szepesi, G. Szmetana, G. (2004): Municipal bankruptcy framework and debt management experiences 1996-2000. In: M. KopányiD. WetzelD.S. El (szerk.): *Intergovernmental Finance in Hungary.* Co-publication of The World Bank and Opean Society Institute, Budapest, 593 - 616. o.

Kassó, Zs. (2006a): Miért van szükség az államháztartás pénzügyi beszámolórendszerének megváltoztatására? In: Vigvári, A. (szerk.): *Decentralizáció, transzparencia, elszámoltathatóság.* Magyar Közigazgatási Intézet, Budapest. 83-129. o.

Kassó, Zs. (2006b): Szükség van-e államszámviteli törvényre? Az államháztartás pénzügyi információs rendszere fejlődésének irányzatai, hazai feladatok. In: Vigvári, A. (szerk.): *Vissza az alapokhoz! Tanulmányok a közpénzügyi rendszer reformjáról.* Új Mandátum Kiadó, Budapest, 132-154. o.

Kende, T. Szűcs, T. (2002): *Az Európai Unió politikái,* Osiris, Budapest.

Kengyel, Á. (2008): Az Európai Unió regionális politikai támogatásai és a nemzeti fejlesztéspolitikák "európaizálódása". In: Kotosz, B. - Pál, T. (szerk.): *Közgazdaságtudományi Kar.* Budapesti Corvinus Egyetem, Budapest, 39-53. o.

Kengyel, Á. (2007a): Európai uniós források a 2007-2013 közötti időszakban II. A regionális fejlesztési politika. *CEO magazin.* 8. évf. 1. sz. 14-24. o.

Kengyel, Á. (2007b): Európai uniós források a 2007-2013 közötti időszakban III. A fejlesztési tervek tartalma - a magyar I. és II. NFT. *CEO magazin.* 8. évf. 2. sz. 1-12. o.

Kengyel, Á. (2003): A fejlettségi különbségek mérséklődése az Európai Unióban. In: Blahó, A. (szerk.): *Elmaradottság - fejlődés - átalakulás: Tanulmányok Szentes Tamás akadémikus 70. születésnapja tiszteletére.* BKÁE Világgazdasági tanszék, Budapest, 148-156. o.

Ketskeméty, L. Izsó, L. (2005): *Bevezetés az SPSS programrendszerbe.* ELTE Eötvös Kiadó, Budapest.

Kinnunen, J. (2004): Multilevel Governance. The Dynamics of EU Cohesion Policy. The Structural Funds as a Vector of Change in Finland. *EU Framework V*. University of Helsinki Centre for European Studies, Helsinki.

Kopányi, M. Vigvári, A. (2003): Az önkormányzati szektor forrásbevonó képességének növelésével kapcsolatos gazdaságpolitikai kérdések. *Pénzügyi szemle.* 48. évf. 11. sz. 1070-1088. o.

Kopányi, M. Wetzel El (2004): *Intergovernmental Finance in Hungary. A Decade of Experience 1990-2000.* OSI/LGI The World Bank, Bp., Washington DC.

Kornai, J. (1992): The postsocialist transition and the state: Reflections in the light of Hungarian fiscal problems. *American Economic Review,* 82. évf. 2. sz.

Kovács, Á. (2009b): Közpénzügyek, költségvetés - kihívások és lehetséges válaszok. In: Sándor, P. – Vass, L. (Eds.): *Magyarország politikai évkönyve 2008-ról.* DKMKA, Budapest.

Kovács, Á. (2008a): *Az Önkormányzati rendszer működése - a pénzügyi ellenőr olvasata*. Állami Számvevőszék.

Kovács, Á. (2008b): *Önkormányzatiság és gazdálkodás.* Állami Számvevőszék.

Kovács, Á. (2007): *A helyi önkormányzatok 2007. évi költségvetése tervezésének néhány fontosabb kérdése.* Állami Számvevőszék.

Kovács, Á. (2005): *Az önkormányzati szerkezet számvevőszéki tapasztalatai.* Állami Számvevőszék.

Kovács, B. (2004): *A helyi önkormányzatok finanszírozási lehetőségei az EU csatlakozás tükrében*, Budapesti Gazdasági Főiskola, Budapest.

Kovács, E. (2009): *Pénzügyi adatok statisztikai elemzése. Egyetemi tankönyv.* 3. bővített kiadás, Budapesti Corvinus Egyetem Pénzügyi és Számviteli Intézet, Tanszék Kft, Budapest.

Krugman, P. (1991): *Geography and trade,* The MIT Press, Cambridge, MA.

Kusztosné Nyitrai, E. Barabás, Z. (1998): *A helyi önkormányzatok és pénzügyeik.* Consulting, Bp.

László, M. Pálné Kovács, I. (1993): Önálló-e az önálló helyi adózás? *Pénzügyi szemle.* 37. évf. 3. sz. 215-220. o.

László, M. Szebényi, A. (2010): The Economic Instruments of Local Government in Hungary. *Megatrend Review.* 7. évf. 1. sz. 47-67. o.

Lenkei, G. (szerk.) (2003): *Euró, érvek és ellenérvek,* Miniszterelnöki Hivatal. Kormányzati Stratégiai Elemző Központ, Budapest.

Ligeti, Z. (2002): *Gazdasági növekedés és felzárkózás.* Corvinus University of Budapest, Budapest.

Lilliné Fecz, I. (2007): Az államháztartás szervezetei beszámolási és könyvvezetési kötelezettségének 2007. évi változása. *Számvitel, Adó, Könyvvizsgálat,* 49. évf. 3. szám, március 100-105. o.

Lilliné Fecz, I. (2004): Az európai uniós támogatások elszámolása az államháztartás szervezeteinél. *Számvitel, Adó, Könyvvizsgálat,* 46. évf. 6. szám, március 254-261. o.

Lóránd, B. (2009): A fejlesztéspolitika sikerességét elősegítő tényezők és a kohéziós országok tapasztalatai Magyarország számára. *Tér és társadalom.* 23. évf. 2. sz. 213-224. o.

Lóránt, Z. (2008a): Az államháztartás helyi szintje és a helyi adók. *Pénzügyi szemle.* 53. évf. 4. sz. 645-662. o.

Lóránt, Z. (2008b): *Az önkormányzatiság jelene és jövője.* Állami Számvevőszék.

Lotz, J. (2009): Is there conformity with the Council of Europe guidelines for local finances? *Pénzügyi szemle*. 54. évf. 2-3. sz. 474-482. o.

Marján, A. (2009): Gondolatok az EU regionális politikájának aktuális és jövőbeli kihívásairól. *Európai tükör.* 14. évf. 2. sz. 68-75. o.

Miklós-Molnár, M. (2006a): Hogyan csináljuk mi, magyarok? I. *Szám Adó,* XV. évf. 7. sz. 19-23. o.

Miklós-Molnár, M. (2006b): Hogyan csináljuk mi, magyarok? II. *Szám Adó,* XV. évf. 8. sz. 11-15. o.

Miklós-Molnár, M. (2006c): Hogyan csináljuk mi, magyarok? III. *Szám Adó,* XV. évf. 9. sz. 14-19. o.

Miklós-Molnár, M. (2006d): Hogyan csináljuk mi, magyarok? IV. *Szám Adó,* XV. évf. 10. sz. 14-19. o.

Musyck, B. – Reid, A. (2007): Innovation and Regional Development, Do European Structural Funds make a Difference? *European Planning Studies, European Briefing* 15. évf. 7. sz.

Nagy, G. (2007): Divergencia vagy konvergencia – az átmenet gazdasági térfolyamatainak mérlege földrajzos szemmel. *Tér és Társadalom.* XXI. évf. 1. sz. 35-51. o.

Nagy, K. (2002): Önkormányzati adósságregiszter. *Közigazgatás-fejlesztési füzetek* 5. sz.

Nagy, S. Gy. (2008): *Az európai uniós támogatások hatékonyságának mérése. Hatékonyság és hatásosság az európai uniós támogatások felhasználásánál 2004 és 2006 között Magyarországon az első Nemzeti Fejlesztési Terv keretében*. Corvinus University of Budapest, Budapest.

Nagy, S. Gy. (2006): Az európai uniós támogatások hatékonyságának értelmezése és mérésének módszerei. *Európai tükör.* 11. évf. 2. sz. 100-111. o.

Nemes Nagy, J. (2007): Kvantitatív társadalmi térelemzési eszközök a mai regionális tudományban. *Tér és Társadalom,* XXI. évf. 1. sz. 1-19. o.

Nemes Nagy, J. (2004): Tagolt világ - a regionális fejlődés egyenlőtlenségei. *II. Magyar Földrajzi Konferencia.* G. Barton - G. Dormány (szerk.): SZTE TTK Természeti Földrajzi és Geoinformatikai Tanszék, Szeged, 2-4 September 2004.

Oplotnik, Ž. (2007): A Model of Local Financing in Theory and Practice: Lessons from Slovenia, New EU Member State. *East European Quarterly,* 41. évf. 4. sz. 429-452. o.

Palánkai, T. (szerk.) (2004): *Az európai integráció gazdaságtana*. Aula Kiadó, Budapest.

Pálné Kovács, I. (2008): *Helyi kormányzás Magyarországon.* Dialóg Campus, Budapest, Pécs.

Pálné Kovács, I. (2004): A regionális önkormányzatok és a regionális politika (területfejlesztés) irányítása. In: Horváth M. Tamás (szerk.): *A regionális politika közigazgatási feltételei: Variációk az uniós csatlakozás küszöbén.* Magyar Közigazgatási Intézet, Budapest, 57-96. o.

Pálné Kovács, I. (1997): Helyi önkormányzatok és végrehajtó hatalom. In: Balás István (szerk.): *A demokrácia intézményrendszere Magyarországon*. MTA, Budapest, 115-130. o.

Péteri, G. (2008): Decentralisation under fiscal pressure: Local government finances in Hungary. In: Sevic, Zeljko (szerk.): *Local public finance in Central and Eastern Europe*. 183-208. o. Elgar, Cheltenham.

Péteri, G. (2005): Önkormányzati forrásszabályozás: Ideák és javaslatok. In: Vigvári, A. (szerk.): *Félúton : Tanulmányok a helyi önkormányzatok finanszírozási rendszerének*

továbbfejlesztési lehetőségeiről. Települési Önkormányzatok Országos Szövetsége, Budapest, 115-123. o.

Péteri, G. (2004): *Terítéken az önkormányzatok központi forrásszabályozási rendszere - ahogy a kutatók látják.* Elhangzott: „Félúton. A magyar önkormányzati rendszer az Európai Uniós csatlakozás folyamatában", a Belügyminisztérium IDEA csoportjának konferenciáján, Budapest, 2004. október 20.

Peterson, G. (2000): Building Local Credit Systems. *Urban Background Series.* 3. kiadás, The World Bank.

Pickvance, C. (2002): Settlement Type and Local Government Environmental Policy in Hungary: the Role of Local Economic Structure and Local Government Resources. *European Environment: The Journal of European Environmental Policy (Wiley),* 12. évf. 2. sz.

Pinkowski, J. (2004): Institutional Arrangements and State and Local Financial Forecasting. *International Journal of Public Administration.* 27. évf. 8. sz. 547-556. o.

Pitti, Z. (2010): A gazdasági válság és az EU közteherviselési gyakorlatának változása. *Köz-gazdaság.* 5. évf. 2. sz. 21-32. o.

Pitti, Z. (2005): Az önkormányzatok pénzügyi finanszírozásának modernizációja. *Magyar Közigazgatás.* 55. évf. 11. sz. 665-677. o.

Pitti, Z. (2003): Az önkormányzati finanszírozás korszerűsítése (vitaanyag). *Magyar Közigazgatás.* 53. évf. 6. sz. 327-345. o.

Pitti, Z. (1992): A helyi adók az adórendszerben és az önkormányzati gazdálkodásban 1. *Pénzügyi szemle.* 36. évf. 9. sz. 688-699. o.

Porter, M.E. (1996): Competitive advantage. Agglomeration economies and regional policy. *International Regional Science Review.* 19. évf. 1-2. sz. 85-94. o.

Rae, R. – Kovács, Á. (2010): Együttműködés a „jó kormányzás" kialakításában. *Pénzügyi Szemle.* 55. évf. 2. sz., 380–382. o.

Romer, P. (2007): Economic Growth. In: D.R. Henderson (szerk.): *The Concise Encyclopedia of Economics*. Liberty Fund.

Romhányi, B. (2007): Szempontok és javaslatok a magyar fiskális szabály- és intézményrendszer reformjához. *Pénzügyi szemle.* 52. évf. 2. sz. 335-370. o.

Rostow, W.W. (1960): *The Stages of Economic Growth: a Non-Communist Manifesto.* Cambridge University Press, Cambridge.

Rusu, Elena (2008): The Strenghtening of Romanian Local Financial Autonomy's Level in the Eu Context. *Annals of the University of Oradea, Economic Science Series.* 17. évf. 3. sz. 513-517. o.

Sajtos, L. – Mitev, A.Z. (2007): *SPSS kutatási és adatelemzési kézikönyv.* Alinea, Budapest.

Salamun, M. (2007): The Laws on the Organization of the Administration in the Czech Republic, Hungary, Poland and Slovakia: A Comparative Analysis in the Context of European Integration. *Review of Central & East European Law.* 32. évf. 3. sz. 267-301. o.

Santos, I. (2008): Is structural spending on solid foundations? *Bruegel policy brief.* 2. sz. 1-8. o.

Sasaki, R. (2007): Addendum to "A Review of the History and the Current Practice of Aid Evaluation". *Journal of MultiDisciplinary Evaluation.* 4. évf. 7. sz. 108. o.

Sasaki, R. (2006): A Review of the History and the Current Practice of Aid Evaluation. *Journal of MultiDisciplinary Evaluation.* 3. évf. 5. sz. 55-88. o.

Sevic, Z. et al. (2008): *Local public finance in Central and Eastern Europe.* Elgar, Cheltenham.

Sölvell, Ö. – Lindqvist, G. – Ketels, C. (2003): *The Cluster Initiative Greenbook.* Ivory Tower AB, Stockholm.

Straussman, J.D. - Fábián, K. (1994): Local Government Finance in Hungary: Okun Revisited. *Public Budgeting and Finance.* 14. évf. 4. sz. 71-83. o.

Szegvári, P. (2004): Magyarország intézményi felkészülése az európai regionális poltika alkalmazására, a regionális demokráciára. *Területi statisztika.* 7. évf. 3. sz. 216-235. o.

Szegvári, P. (2002): Az Európai Unió és Magyarország regionális politikája. *Európai közigazgatási szemle.* 1-2. sz. 4-22. o.

Székelyi, M. - Barna, I. (2008): *Túlélőkészlet az SPSS-hez többváltozós elemzési technikákról társadalomkutatók számára.* 4. kiadás, Typotex, Bp.

Szemlér (2007): Az EU- és a magyar költségvetés kapcsolatai, a kohéziós politika alakulása. In: Fóti-Rácz (szerk.): *Az Európai Unió előtt álló kihívásokról és a magyar érdekekről*. 59-71. o.

Szörényiné Kukorelli (2000): Az EU regionális politikája és a magyar területfejlesztés. In: Hahn Csaba (szerk.): *A területfejlesztés feladatai az ezredfordulón és az információs társadalom.* Hazai Térségfejl. Budapest, 37-40. o.

Tabără, V. (2010): The Income and Expenditure Budget of the Local Public Administration. *Buletin Stiintific.* 15. évf. 1. sz. 85-94. o.

Tatar, M. (2010): Estonian Local Government Absorption Capacity of European Union Structural Funds. *Halduskultuur.* 11. évf. 2. sz. 202-226. o.

Ter-Minassian - Teresa-Craig, J. (1997): Chapter 7. In: IMF (szerk.): *Control of subnational government borrowing in Fiscal Federalism in Theory and Practice*. IMF, Washington.

Trón, Zs. (2008): Az európai uniós támogatások hatásának vizsgálata. *Competitio.* 7. évf. 1. sz. 83-101. o.

Udvari (2010): Aid for trade "Régi-új" fejlesztési eszköz az Európai Unióba. *Európai tükör.* 15. évf. 6. sz. 28-42. o.

Valentinyi, Á. (1995): Endogén növekedéselmélet. *Közgazdasági szemle.* XLII. évf. 6. sz. 582-594. o.

Vigvári et al. (2007): *A családi ezüst Tanulmányok az önkormányzati vagyongazdálkodás témaköréből.* Magyar Közigazgatási Intézet, Budapest.

Vigvári et al. (2005): *Félúton Tanulmányok a helyi önkormányzatok finanszírozási rendszerének továbbfejlesztési lehetőségeiről.* Települési Önkormányzatok Országos Szövetsége, Budapest.

Vigvári, A. (2011a): Kormányzati szerepvállalás a globalizálódó gazdaságban - pénzügyi nézőpontból. In: *Pénz és társadalom.* BGF, Budapest.

Vigvári, A. (2011b): *Néhány javaslat a kialakítandó önkormányzati pénzügyi rendszerrel kapcsolatosan.* Új Magyar Közigazgatás 4. évf. 10. sz., 38–42. o.

Vigvári, A. (2011c): *Önkormányzati pénzügyek. Hazai kihívások és nemzetközi példák.* Állami Számvevőszék Kutató Intézete, Budapest.

Vigvári, A. (2010a): Megtelt-e a konfliktuskonténer. Gondolatok a magyar önkormányzati pénzügyek korszerűsítéséhez. In: *Államszerep válság idején: Magyary Zoltán emlékkötet.* CompLex, Budapest.

Vigvári, A. (2010b): Megtelt-e a konfliktuskonténer. *Pénzügyi Szemle.* 55. évf. 3. sz., 465–487. o.

Vigvári, A. (2009a): Atipikus önkormányzati eladósodás Magyarországon. *Közgazdasági szemle*. 56. évf. 7-8. sz. 709-730. o.

Vigvári, A. (2009b): *Pénzügyi kockázatok az önkormányzati rendszerben.* Állami Számvevőszék Kutató Intézete, Budapest.

Vigvári, A. (2005): Az önkormányzatok hitelfelvétele. In: Vigvári et al.: *Félúton Tanulmányok a helyi önkormányzatok finanszírozási rendszerének továbbfejlesztési lehetőségeiről.* Települési Önkormányzatok Országos Szövetsége, Budapest, 151-167. o.

Vigvári, A. (2003): Források és hiányok (Fiskális mozgástér bővítésének lehetőségei az euró-övezethez történő csatlakozás időszakában). In Lenkei, G. (szerk.): *Euró, érvek és ellenérvek.* MEH Stratégiai Elemző Központ, Budapest, 221-247. o.

Vigvári, A. (2002): *Közpénzügyek, önkormányzati pénzügyek.* KJK-Kerszöv, Budapest.

Warvasovszky, T. (2011): *Új szemlélet az önkormányzati gazdálkodás ellenőrzésében.* Állami Számvevőszék.

White, H. (1992): The macroeconomic impact of development aid: A critical survey. *Journal of Development Studies.* 28. évf. 2. sz.

Wormser, M. (2003): *Guarantee Insruments.* The World Bank.

Legislation and other primary resources

Domestic legislation

Magyarország Alaptörvénye (2011. április 25.)

A helyi önkormányzatokról szóló 1990. évi LXV. törvény

A helyi adókról szóló 1990. évi C. törvény

A helyi önkormányzatok adósságrendezési eljárásáról szóló 1996. évi XXV. törvény

A Helyi Önkormányzatok Európai Chartájáról szóló, 1985. október 15-én, Strasbourgban kelt egyezmény kihirdetéséről szóló 1997. évi XV. törvény

Magyarország gazdasági stabilitásáról szóló 2011. évi CXCIV. törvény

Az államháztartásról szóló 2011. évi CXCV. törvény

A nemzeti vagyonról szóló 2011. évi CXCVI. törvény

Magyarország helyi önkormányzatairól szóló 2011. évi CLXXXIX. törvény

Az államháztartás működési rendjéről szóló 217/1998. (XII. 30.) Korm. rendelet

Az államháztartás szervezetei beszámolási és könyvvezetési kötelezettségének sajátosságairól szóló 249/2000. (XII. 24.) kormányrendelet

A Nemzeti Alapnak az ISPA keretében történő igénybevételéről szóló Együttműködési Megállapodás, valamint a 2000. évi ISPA projektek pénzügyi megállapodásainak kihirdetéséről szóló 89/2002. (IV. 20.) Korm. rendelet

Az Európai Unió által nyújtott egyes pénzügyi támogatások felhasználásával megvalósuló programok monitoring rendszerének kialakításáról szóló 124/2003. (VIII. 15.) Korm. rendelet

Az Európai Unió Strukturális Alapjai és a Kohéziós Alap támogatásainak fogadásához kapcsolódó pénzügyi lebonyolítási, számviteli és ellenőrzési rendszerek kialakításáról szóló 233/2003. (XII. 16.) Korm. rendelet

Az Európai Unió strukturális alapjaiból és Kohéziós Alapjából származó támogatások hazai felhasználásáért felelős intézményekről szóló 1/2004. (I. 5.) Korm. Rendelet

Egyes ISPA projektek pénzügyi megállapodásainak kihirdetéséről szóló 89/2004. (IV. 20.) Korm. rendelet

A Nemzeti Fejlesztési Terv operatív programjai, az EQUAL Közösségi Kezdeményezés program és a Kohéziós Alap projektek támogatásainak fogadásához kapcsolódó pénzügyi lebonyolítási, számviteli és ellenőrzési rendszerek kialakításáról szóló 360/2004. (XII. 26.) kormányrendelet

Az államháztartásról szóló törvény végrehajtásáról szóló 368/2011. (XII. 31.) Korm. rendelet

8017/2005. számú Pénzügyminiszteri tájékoztató a strukturális alapok számviteli elszámolása az irányító hatóságok és közreműködő szervezetek részére

8008/2007. számú Pénzügyminiszteri tájékoztató a strukturális alapok számviteli elszámolása az irányító hatóságok és közreműködő szervezetek részére 2005. 08. 15.-én kiadott 8017/2005. PM Tájékoztató módosításáról

8018/2005. számú Pénzügyminiszteri tájékoztató a Kohéziós Alap számviteli elszámolása az irányító hatóságok és közreműködő szervezetek részére

8009/2007. számú Pénzügyminiszteri tájékoztató a Kohéziós Alap számviteli elszámolása az irányító hatóságok és közreműködő szervezetek részére 2005.09.15.-én kiadott 8018/2005. PM Tájékoztató módosításáról

Community legislation

Council Regulation (EC) No 1164/94 of 16 May 1994 establishing a Cohesion Fund

Commission Regulation (EC) No 1831/94 of 26 July 1994 concerning irregularities and the recovery of sums wrongly paid in connection with the financing of the Cohesion Fund and the organization of an information system in this field

Council Regulation (EC) No 1264/1999 of 21 June 1999 amending Regulation (EC) No 1164/94 establishing a Cohesion Fund

Council Regulation (EC) No 1265/1999 of 21 June 1999 amending Annex II to Regulation (EC) No 1164/94 establishing a Cohesion Fund

Council Regulation (EC) No 1267/1999 of 21 June 1999 establishing an Instrument for Structural Policies for Pre-accession

Commission Regulation (EC) No 1386/2002 of 29 July 2002 laying down detailed rules for the implementation of Council Regulation (EC) No 1164/94 as regards the management and control systems for assistance granted from the Cohesion Fund and the procedure for making financial corrections

Commission Regulation (EC) No 16/2003 of 6 January 2003 laying down special detailed rules for implementing Council Regulation (EC) No 1164/94 as regards eligibility of expenditure in the context of measures part-financed by the Cohesion Fund

Council Regulation (EC) No 1260/1999 of 21 June 1999 laying down general provisions on the Structural Funds

Commission Regulation (EC) No 438/2001 of 2 March 2001 laying down detailed rules for the implementation of Council Regulation (EC) No 1260/1999 as regards the management and control systems for assistance granted under the Structural Funds

Commission Regulation (EC) No 448/2001 of 2 March 2001 laying down detailed rules for the implementation of Council Regulation (EC) No 1260/1999 as regards the procedure for making financial corrections to assistance granted under the Structural Funds

Council Directive 91/271/EEC of 21 May 1991 concerning urban waste-water treatment

Council Directive 98/83/EC of 3 November 1998 on the quality of water intended for human consumption

Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste

Other primary resources

Állami Számvevőszék (2008): *0822. sz. jelentés.* Állami Számvevőszék, Budapest

Council of Europe (1985): *European Charter of Local Self-Government*.s Strasbourg.

DEXIA (2011): *Subnational public finance in the European Union*. DEXIA Crédit Local, July2011.

MNB (2006): *Elemzés a konvergencia-folyamatokról*. Magyar Nemzeti Bank, Budapest.

Municipum Magyarország Alapítvány (2003): *A helyi önkormányzatok finanszírozása*. Municipum Magyarország Alapítvány, Budapest.

Online resources

Európai Bizottság: *Térkép az 1. célkitűzés szerint támogatható ás átmeneti támogatásban részesülő régiókról*. Elérhető: http://ec.europa.eu/regional_policy/ objective1/map_en.htm *[Letöltés időpontja: 2011. október 22.]*

Európai Tanács (2012): A Tanács COM/2012/0104 sz. ajánlása a Magyarországon fennálló túlzott költségvetési hiány megszüntetéséről (2012). Elérhető: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2012:0104:FIN:HU:HTML *[Letöltés időpontja: 2012. augusztus 1.]*

Központi Statisztikai Hivatal (2011): *Tájékoztatási adatbázis.* Elérhető: http://statinfo.ksh.hu/Statinfo/index.jsp. *[Letöltés időpontja: 2011. október 13.]*

Nemzeti Fejlesztési Ügynökség (Ed.) (2007a): *Nemzeti Fejlesztési Terv dokumentumai.* Elérhető: http://www.nfu.hu/doc/128. *[Letöltés időpontja: 2012. július 9.]*

Nemzeti Fejlesztési Ügynökség (2007b): A projektek számviteli elszámolása. Elérhető: *www.nfu.hu/24_A%20projektek%20számviteli%20elszámolása.pdf [Letöltés időpontja: 2011. november 15.]*

Sapir, A. et al. (2003): *An agenda for a growing Europe. Making the EU Economic System Deliver*, Elérhető: http://www.euractiv.com/ndbtext/innovation/sapirreport.pdf. *[Letöltés időpontja: 2011. október 20.]*

Annexes

Annex 1: Regional policy objectives

- Objective 1: regions[163] lagging behind, the per capita GDP of which is below 75% of the Community average as well as the areas in Finland and Sweden with a low population density and the overseas French departments, the Canary Islands, the Portuguese Azores and Madeira.

  Areas which were considered as lagging behind in the programming period 1994-1999 but which do not meet Objective 1 anymore – due to the enlargements – receive transitional *phasing-out* support; these are called the *phasing-out* regions.

- Objective 2: regions experiencing structural difficulties, in need of economic and social conversion[164], facing serious problems caused by unemployment, poverty, the damaged environment, the rate of crime or the low educational standards among the population.

- Objective 3: regions experiencing development difficulties in respect of human resources, which are not eligible under Objectives 1 and 2 but where the modernisation of education and training is needed to provide for social and economic cohesion.

[163] NUTS II regions
[164] Areas suffering industrial decline, rural areas with a high proportion of agricultural population and with a large number of people employed in the fisheries industry.

Annex 2: Funds providing support for member states (programming period 2000-2006)

In the programming period 2000-2006 – i.e. the one subject to the research – member states could apply for funding from the following funds.[165]

- The European Regional Development Fund (ERDF) aims at promoting social and economic cohesion through the reduction of regional disparities as well as at tackling inequalities arising from industrial restructuring and structural unemployment; for which reason, it provides support for enterprises, contributes to infrastructural development[166] and supports regional development through financial instruments.

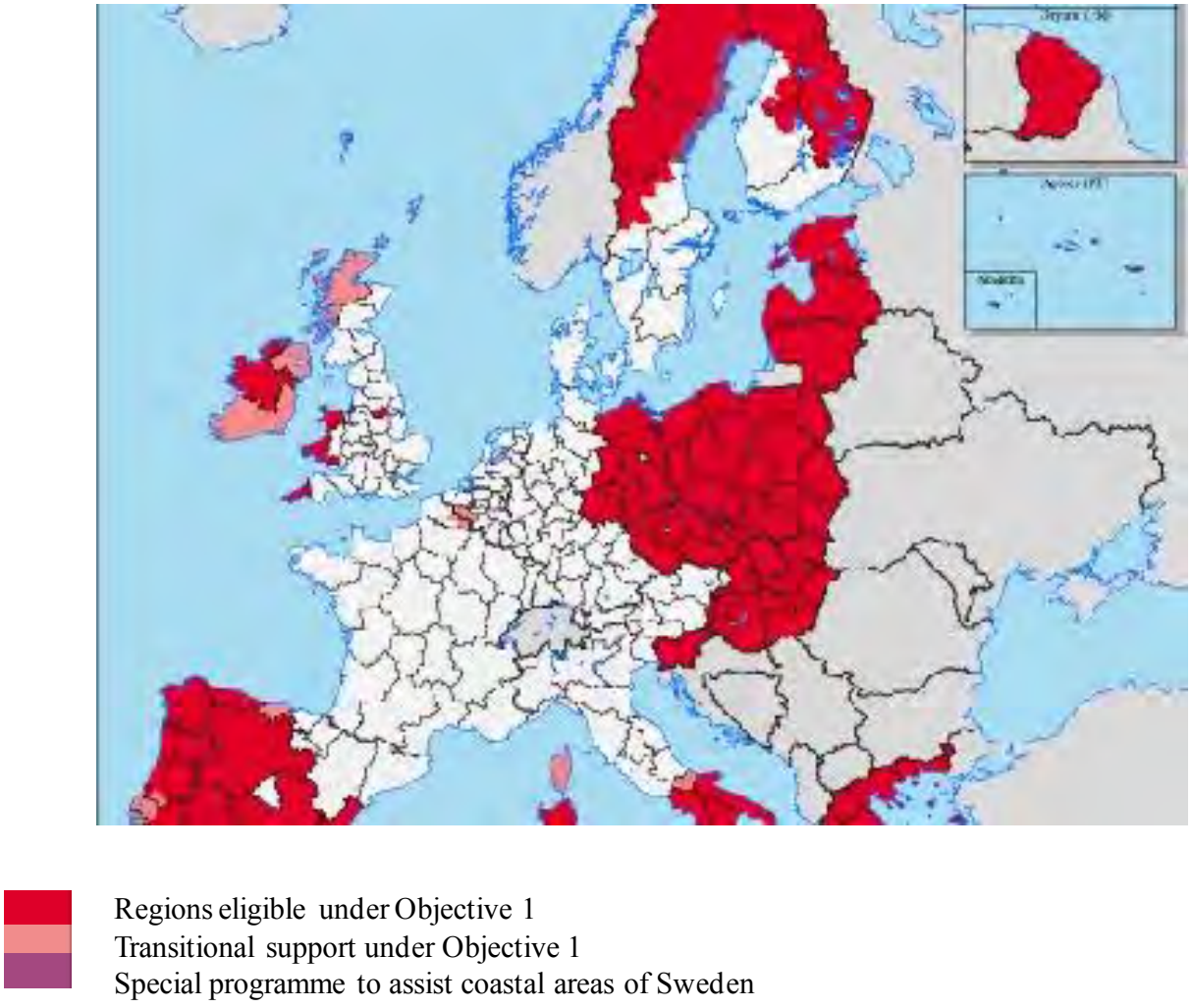
- The European Social Fund (ESF) aims at supporting human resource development, the education and training of the workforce, the reduction of unemployment, the promotion of employment, combating social exclusion, increasing the efficiency of the educational system and supporting the needs of the information society through the different trainings. For this reason, it supports, inter alia, life-long learning, the social integration of disadvantaged people and combating discrimination.

- The Guidance Section of the European Agricultural Guidance and Guarantee Fund (EAGGF Guidance Section) aims at rural development, the increase of agricultural productivity and the establishment of market stability in the agricultural sector. As of 2007, the fund continues to operate under a new name – European Agricultural Fund for Rural Development– as part of the agricultural policy.

- The Financial Instrument for Fisheries Guidance (FIFG) aims at the establishment of competitive fishing enterprises as well as at the realisation of a sustainable balance in fisheries management and the modernisation of fishing structures. As of 2007, the fund continues to operate under the name European Fisheries Fund under EU fisheries policy.

[165] Under the National Development Plan, Hungary was entitled to receive funding from all the four funds between 2004 and 2006.
[166] research and development, environmental and transport networks, investments in energy

Annex 3: Map of eligible regions and regions receiving transitional support under Objective 1



Regions eligible under Objective 1
Transitional support under Objective 1
Special programme to assist coastal areas of Sweden

Source: http://ec.europa.eu/regional_policy/objective1/map_en.htm; Accessed: 22 October 2011.

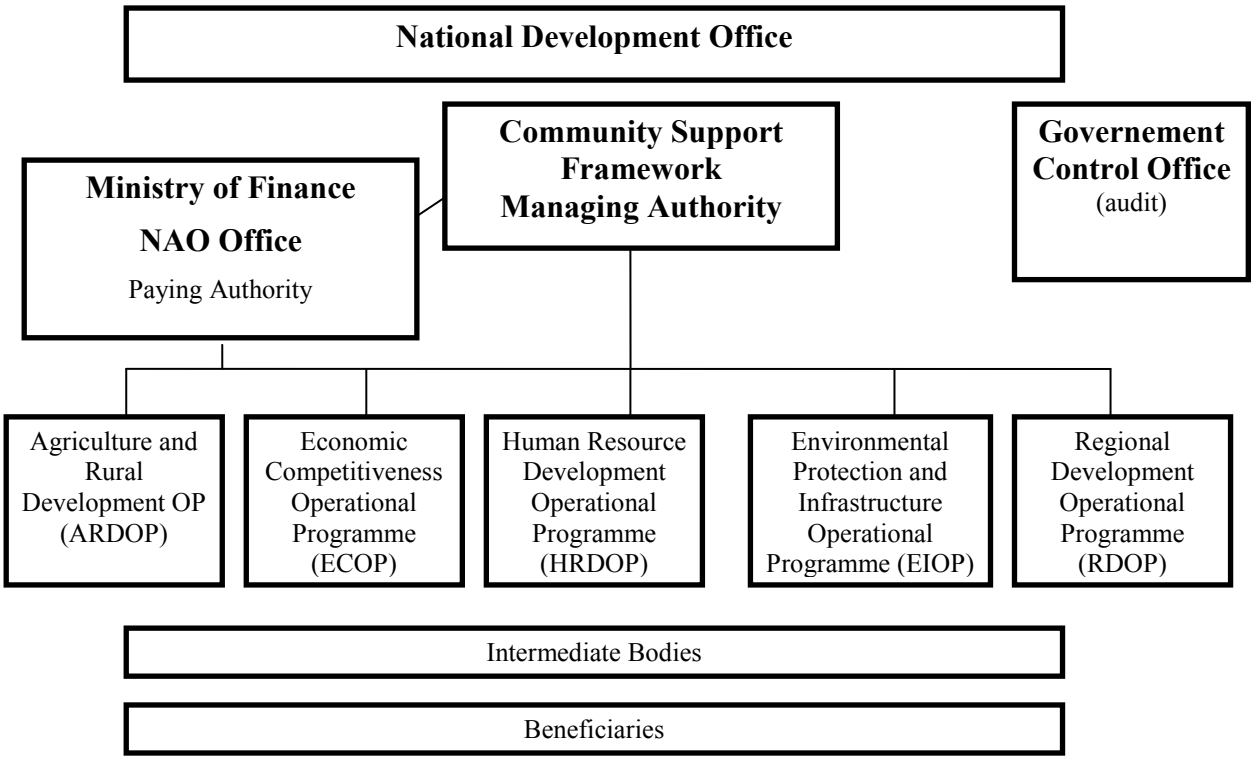
Annex 4: Operational Programmes of the National Development Plan (2004-2006)

Operational Programme, principal objectives	Priorities within each Operational Programme	Financing funds
Agriculture and Rural Development Operational Programme (ARDOP) (Promoting agricultural modernisation and the catching-up of rural areas)	Establishment of competitive basic material production in agriculture	Guidance Section of the European Agricultural Guidance and Guarantee Fund and Financial Instrument for Fisheries Guidance
	Modernisation of Food processing	Guidance Section of the European Agricultural Guidance and Guarantee Fund
	Development of Rural Areas	
	Technical Assistance	
Economic Competitiveness Operational Programme (ECOP) (Improving the quality of the innovation capacities, setting up a service-based economy, development of small and medium-sized enterprises)	Investment Promotion	European Regional Development Fund
	Development of Small and Medium-sized Enterprises	
	Research and Development, Innovation	
	Development of Information Society and e-economy	
	Technical Assistance	
Human Resource Development Operational Programme (HRDOP) (Raising the employment level, improving the competitiveness of the workforce, promoting social inclusion)	Supporting Active Labour Market Policies	European Regional Development Fund
	Fighting Social Exclusion by Promoting Access to the Labour Market	
	Promoting Lifelong Learning and Adaptability	
	Developing the Infrastructure of Education, Social Services and Health Care	European Social Fund
	Technical Assistance	European Regional Development Fund
Environmental Protection and Infrastructure Operational Programme (EIOP) (Improving the state of the environment, transport development)	Environmental Protection	European Regional Development Fund
	Transport Infrastructure Development	
	Technical Assistance	

Regional Development Operational Programme (RDOP) (Development of areas lagging behind, improving the regional economic environment)	Developing the Tourism Potential of the Regions	European Regional Development Fund
	Developing Regional Infrastructure and the Communal Environment	
	Strengthening the Regional Dimension of Human Resource Development	European Social Fund
	Technical Assistance	European Regional Development Fund

Operational Programmes in Hungary between 2004 and 2006 (Author‟s own table based on (Kengyel 2007b))

Annex 5: Institutional system set up for operational programmes co-financed from the structural funds in Hungary, 2004-2006



Annex 6: Payment processes for projects implemented under the structural funds

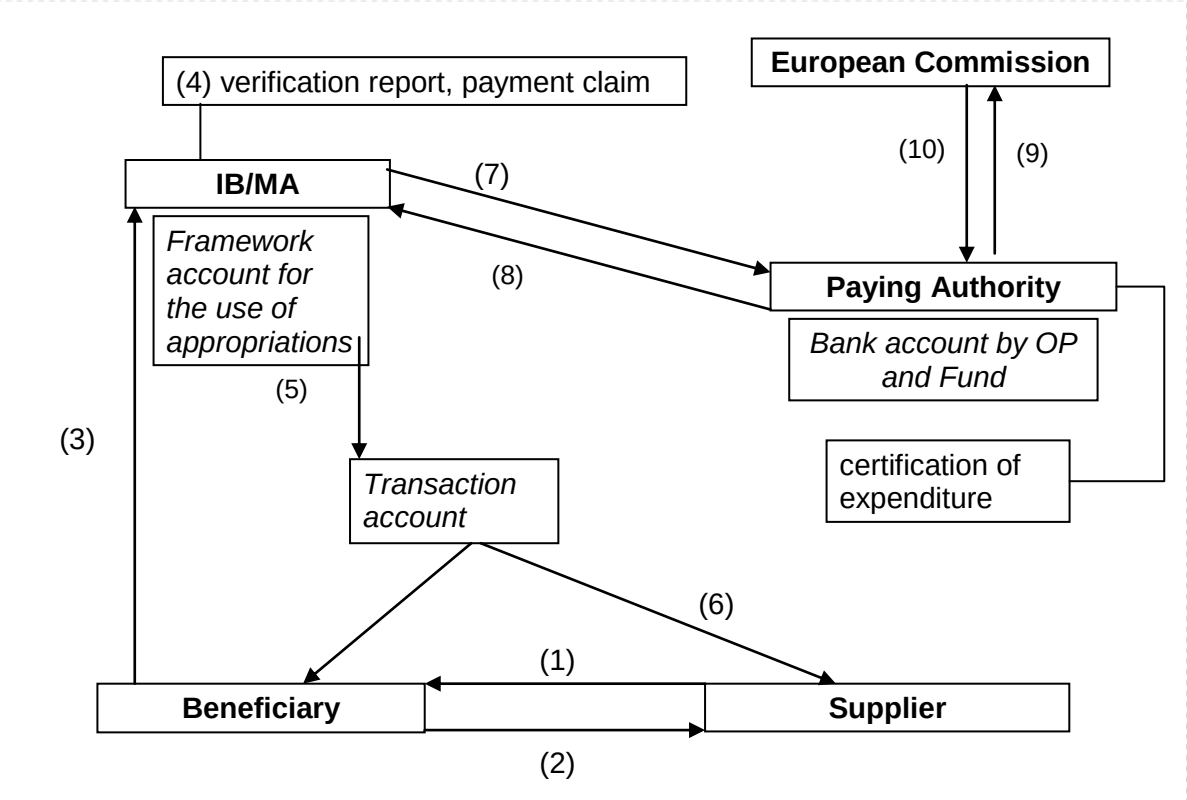


Figure 6 on the payment processes for projects implemented under the structural funds (Figure by the Author)

Steps of the payment process are as follows.

1.: In line with the related contract, the supplier submits its invoice (or the claim for advance payment) to the beneficiary.

2.: The beneficiary certifies performance and pays the supplier‟s invoice – either the proportional own contribution only or the entire amount – in line with the subsidy contract.

3.: The beneficiary submits a project progress report and an application for reimbursement to the intermediate body or to the managing authority[167] (hereinafter: IB / MA).

4.: Based on the application for reimbursement received, the IB / MA prepares the verification report and initiates the payment claim.

5.: The IB / MA pays the entire amount of subsidy in advance from the framework account for the use of appropriations (solely from national resources) and transfers it to the transaction account.

[167] depending on the functions that have been delegated by tghe managing authority to each intermediate body

6.: The amount of subsidy is passed on from the transaction account to the supplier or the beneficiary, depending on whether the beneficiary paid the entire invoice in Step (2) or its own proportion only.

Thus in the first six steps, the supplier‟s invoice is paid but EU funding is not settled, i.e. should the process terminate here, the amount of subsidy would come solely from national resources. We should note that the financial settlement primarily involves the flow of money, while property is generated at the beneficiary.

7.: The managing authority prepares the documents needed for the settlement of Community contribution, using which it draws down the EU funding – advanced from national resources – from the paying authority. The managing authority compiles the statement of expenditure quarterly, which serves as the basis of the claim for funds from the European Commission and of the certification activity by the paying authority.

8.: The paying authority has separate bank accounts for each OP and fund, from which, it transfers the amount of EU funds subsequently to the managing authority from the available advances.

Settlement of accounts between the European Commission and the paying authority

9.: The paying authority prepares the statement of expenditure and submits a request for reimbursement to the European Commission.

10.: The European Commission transfers the amount of EU funds as interim or final payment[168].

[168] Advances are naturally transferred preliminarily.

Annex 7: Operationalisation of definitions used in relation to the hypotheses

Revenue structure: the proportion of own source revenues, revenues left by the central government to municipalities, accumulation and capital revenues, state contribution and subsidies, bank loans and securities within total municipal revenues as compared to each other

Financial balance: the difference of financial revenues and financial expenses of a municipality

Financial revenues: receipt of short-term loans + receipt of liquid loans + receipt of long-term loans + issuance of domestic held-for-trading securities + sale of held-for-trading securities + issuance of domestic investment securities + sale of long-term securities + issuance of long-term foreign securities + receipt of foreign loans + other financial revenues

Financial expenses: service of short-term loans + service of liquid loans + service of long-term loans + cashing-in of domestic held-for trading securities + cashing-in of held-for-trading securities + cashing-in of domestic long-term securities + purchase of long-term securities + cashing-in of long-term foreign securities + service of foreign debt + other financial expenses

EU funds paid: the total amount of subsidies paid from the structural funds to a municipality under the National Development Plan

(Local) municipality: self-government of a village or city which acts independently in respect of local public affairs under its own scope of functions and authority and which submitted its report to the competent territorial division of the Hungarian State Treasury for the calendar years 2004 to 2008. The study of the local governments of the capital, of the counties and of the districts of Budapest is not included in the subject of my research.

Size of a municipality: number of inhabitants of a settlement

Geographical location of a municipality: the NUTS1 large region, NUTS2 region or county according to the NUTS3 classification, in which a settlement is located.

Increase in liabilities: the increase of the value of balance-sheet items classified either as long-term or short-term liabilities in the municipal accounting balance between 2004 and 2008.

Own source revenues: revenues from institutional activities, interest revenues, revenues from VAT, levies, local taxes, personal income tax revenues, other taxes left by the central government to a municipality, charges levied in connection with local taxes and other specific revenues, tax-type revenues, dividends and concession fees

Annex 8: Sturcture of the accounting balances and the budgetary reports

a) Accounting balance 2004

Variable number	ASSETS	Variable number	LIABILITIES
01	1. Capitalised value of formation/reorganization expenses	61	1. Establishment capital
02	2. Capitalised value of research and development	62	2. Changes in capital
03	3. Concessions, licenses and rights of the kind	63	3. Revaluation reserve
04	4.Trade-marks, patents and similar assets (intellectual property)	64	**D.) OWNERS' EQUITY (61+62+63)**
05	5. Payment in advance on intangible assets	65	1. Budgetary reserve account
06	6. Value adjustment of intangible assets	66	budgetary reserve account current year
07	***I. Total intangible assets***	67	budgetary reserve account previous year(s)
08	1. Land and real-estates and rights to immovable	68	2. Budgetary cash residual
09	2. Machinery and equipment	69	3. Savings in expenditures
10	3. Vehicles	70	4. Lag in revenues
11	4. Livestock for breeding purposes	71	5. Estimate-residual
12	5. Investments and renovations	72	I. Total budgetary reserves (65+68+69+70+71)
13	6. Payments in advance on investments	73	1.Enterprise reserve account
14	7. State stocks and reserves	74	enterprise reserve account current year
15	8. Value adjustment of tangible assets	75	enterprise reserve account previous year(s)
16	***II. Total tangible assets***	76	Profit on enterprise activities
17	1. Other long-term participations	77	Savings in expenditures on enterprise activities
18	2. Bonds (Securities signifying a long-term creditor relationship)	78	Lag in revenues on enterprise activities
19	3. Long term loans	79	II. Total reserves on enterprise activities (73+76+77+78)
20	4. Long term bank deposits	80	**E.) TOTAL RESERVES (72+79)**
21	5. Other long term receivables	81	1. Long term loans
22	6. Value adjustment of financial investments	82	2.Liabilities from issuance of bonds for development purposes
23	***III. Total financial investments***	83	3.Liabilities from issuance of bonds for operating purposes
24	1. Assets given for operation and use	84	4. Investment and development credits
25	2. Assets given into concession	85	5. Long-term credits for operating purposes
26	3. Assets given into property management	86	6. Other long term liabilities
27	4. Property management of third parties assets	87	***I. Total long-term liabilities (81+……..86)***
28	5. Value adjustment of assets in concession and property management	88	1. Short term loans
29	***IV. Total assets in concession and property management***	89	2. Short term bank loans
30	**A.) TOTAL FIXED ASSETS (07+16+23+29)**	90	3. Accounts payable
31	1. Materials	91	accounts payable belonging to the current year's budget
32	2. Semi-finished goods and work-in-progress	92	accounts payable belonging to the next year's budget
33	3. Animals for breeding and fattening and other livestock	93	4. Other short-term liabilities
34	4. Self manufactured products	94	-bills payable
35	5/a Merchandise (goods), packings, services transmitted	95	-liabilities against employees
36	5/b Assets and inventories in return receivables	96	-liabilities against central budget
37	***I. Total inventories***	97	-liabilities on local business taxes
38	1. Accounts receivable	98	-liabilities on overpayments of local taxes
39	2. Debtors	99	-liabilities on irregular payments
40	3. Short term loans	100	-liabilities due next year from the service of long-term loans
41	4. Other receivables	101	-liabilities due next year from the service of issuance of bonds for development purposes
42	receivables due next year on loans	102	-liabilities due next year from the service of issuance of bonds for operating purposes
43	payments in advance on funding	103	-liabilities due next year from the service of investment and development loans
44	receivables on irregular funding	104	-liabilities due next year from the service of operating loans
45	***II. Total receivables***	105	-liabilities due next year from the service of other long term liabilities
46	1. Other participations	106	-short term liabilities belonging to current budget
47	2. Bonds (securities signifying a creditor relationship for trading purposes)	107	-other short term liabilities
48	***III. Total securities***	108	***II. Total short term liabilities***
49	1. Cash and cheques	109	1. Passive contingent budgetary settlements
50	2. Budgetary bank accounts	110	2. Passive running budgetary settlements
51	3. Settlement accounts	111	3. Passive balancing budgetary settlements
52	4. Foreign liquid assets	112	4. Passive financial off-budget settlements
53	***IV. Total liquid assets***	113	Off-budget deposit account
54	1. Active contingent budgetary settlements	114	Account for international funding programmes currency
55	2. Active running budgetary settlements	115	***III. Total other passive accruals (109+...+112)***
56	3. Active balancing budgetary settlements	116	**F.) TOTAL LIABILITIES**
57	4. Active financial off-budget settlements	117	**TOTAL LIABILITIES AND CAPITAL**
58	V. Total other active accruals		
59	**B.) TOTAL CURRENT ASSETS**		
60	**TOTAL ASSETS**	A1: opening balance	
		A2: closing balance	

b) Accounting balance 2005 and 2006 (identical structure)

Variable number	ASSETS	Variable number	LIABILITIES
01	1. Capitalised value of formation/reorganization expenses	63	1. Establishment capital
02	2. Capitalised value of research and development	64	2. Changes in capital
03	3. Concessions, licenses and similar rights	65	3. Revaluation reserve
04	4.Trade-marks, patents and similar assets (intellectual property)	66	**D.) OWNERS' EQUITY (63+64+65)**
05	5. Payment in advance on intangible assets	67	1. Budgetary reserve account
06	6. Value adjustment of intangible assets	68	budgetary reserve account current year
07	***I. Total intangible assets***	69	budgetary reserve account previous year(s)
08	1. Land and real-estates and rights to immovable	70	2. Budgetary cash residual
09	2. Machinery and equipment	71	3. Savings in expenditures
10	3. Vehicles	72	4. Lag in revenues
11	4. Livestock for breeding purposes	73	5. Estimate-residual
12	5. Investments and renovations	74	I. Total budgetary reserves (67+70+…73)
13	6. Payments in advance on investments	75	1.Enterprise reserve account
14	7. State stocks and reserves	76	enterprise reserve account current year
15	8. Value adjustment of tangible assets	77	enterprise reserve account previous year(s)
16	***II. Total tangible assets***	78	Profit on enterprise activities
17	1. Other long-term participations	79	Savings in expenditures on enterprise activities
18	2. Bonds (Securities signifying a long-term creditor relationship)	80	Lag in revenues on enterprise activities
19	3. Long term loans	81	II. Total reserves on enterprise activities (75+78+79+80)
20	4. Long term bank deposits	82	**E.) TOTAL RESERVES (74+81)**
21	5. Other long term receivables	83	1. Long term loans
22	6. Value adjustment of financial investments	84	2.Liabilities from issuance of bonds for development purposes
23	***III. Total financial investments***	85	3.Liabilities from issuance of bonds for operating purposes
24	1. Assets given for operation and use	86	4. Investment and development credits
25	2. Assets given into concession	87	5. Long-term credits for operating purposes
26	3. Assets given into property management	88	6. Other long term liabilities
27	4. Property management of third parties assets	89	***I. Total long-term liabilities (83+……...88)***
28	5. Value adjustment of assets in concession and property management	90	1. Short term loans
29	***IV. Total assets in concession and property management***	91	2. Short term bank loans
30	**A.) TOTAL FIXED ASSETS (07+16+23+29)**	92	3. Accounts payable
31	1. Materials	93	accounts payable belonging to the current year's budget
32	2. Semi-finished goods and work-in-progress	94	accounts payable belonging to the next year's budget
33	3. Animals for breeding and fattening and other livestock	95	4. Other short-term liabilities
34	4. Self manufactured products	96	-bills payable
35	5/a Merchandise (goods), packings, services transmitted	97	-liabilities against employees
36	5/b Assets and inventories in return receivables	98	-liabilities against central budget
37	***I. Total inventories***	99	-liabilities on local business taxes
38	1. Accounts receivable	100	-liabilities on overpayments of local taxes
39	2. Debtors	101	- liabilities on advances of international funding programmes
40	3. Short term loans	102	-liabilities on irregular payments
41	4. Other receivables	103	- liabilities from undertaken guarantees
42	receivables due next year on loans	104	-liabilities due next year from the service of long-term loans
43	receivables due next year on long term loans	105	-liabilities due next year from the service of issuance of bonds for development purposes
44	payments in advance on funding	106	- liabilities due next year from the service of issuance of bonds for operating purposes
45	receivables on irregular funding	107	-liabilities due next year from the service of investment and development loans
46	- receivables from E123	108	-liabilities due next year from the service of operating loans
47	***II. Total receivables***	109	-liabilities due next year from the service of other long term liabilities
48	1. Other participations	110	-short term liabilities belonging to current budget
49	2. Bonds (securities signifying a creditor relationship for trading purposes)	111	-short term liabilities belonging to next year's budget
50	***III. Total securities***	112	-other short term liabilities
51	1. Cash and cheques	113	***II. Total short term liabilities***
52	2. Budgetary bank accounts	114	1. Passive contingent budgetary settlements
53	3. Settlement accounts	115	2. Passive running budgetary settlements
54	4. Foreign liquid assets	116	3. Passive balancing budgetary settlements
55	***IV. Total liquid assets***	117	4. Passive financial off-budget settlements
56	1. Active contingent budgetary settlements	118	Off-budget deposit account
57	2. Active running budgetary settlements	119	Account for international funding programmes currency
58	3. Active balancing budgetary settlements	120	***III. Total other passive accruals (114+...+119)***
59	4. Active financial off-budget settlements	121	**F.) TOTAL LIABILITIES**
60	V. Total other active accruals	122	**TOTAL LIABILITIES AND CAPITAL**
61	**B.) TOTAL CURRENT ASSETS**		
62	**TOTAL ASSETS**		
			A2: only the closing balances are used as variables in the statistical research

c) Accounting balance 2007 and 2008 (identical structure)

Variable number	ASSETS	Variable number	LIABILITIES
01	1. Capitalised value of formation/reorganization expenses	64	1. Establishment capital
02	2. Capitalised value of research and development	65	2. Changes in capital
03	3. Concessions, licenses and similar rights	66	3. Revaluation reserve
04	4.Trade-marks, patents and similar assets (intellectual property)	67	**D.) OWNERS' EQUITY (64+65+66)**
05	5. Payment in advance on intangible assets	68	1. Budgetary reserve account
06	6. Value adjustment of intangible assets	69	budgetary reserve account current year
07	***I. Total intangible assets***	70	budgetary reserve account previous year(s)
08	1. Land and real-estates and rights to immovable	71	2. Budgetary cash residual
09	2. Machinery and equipment	72	3. Savings in expenditures
10	3. Vehicles	73	4. Lag in revenues
11	4. Livestock for breeding purposes	74	5. Estimate-residual
12	5. Investments and renovations	75	I. Total budgetary reserves (68+71+…74)
13	6. Payments in advance on investments	76	1.Enterprise reserve account
14	7. State stocks and reserves	77	enterprise reserve account current year
15	8. Value adjustment of tangible assets	78	enterprise reserve account previous year(s)
16	***II. Total tangible assets***	79	Profit on enterprise activities
17	1. Other long-term participations	80	Savings in expenditures on enterprise activities
18	2. Bonds (Securities signifying a long-term creditor relationship)	81	Lag in revenues on enterprise activities
19	3. Long term loans	82	II. Total reserves on enterprise activities (76+79+80+81)
20	4. Long term bank deposits	83	**E.) TOTAL RESERVES (75+82)**
21	5. Other long term receivables	84	1. Long term loans
22	6. Value adjustment of financial investments	85	2.Liabilities from issuance of bonds for development purposes
23	***III. Total financial investments***	86	3.Liabilities from issuance of bonds for operating purposes
24	1. Assets given for operation and use	87	4. Investment and development credits
25	2. Assets given into concession	88	5. Long-term credits for operating purposes
26	3. Assets given into property management	89	6. Other long term liabilities
27	4. Property management of third parties assets	90	***I. Total long-term liabilities 84+……..89)***
28	5. Value adjustment of assets in concession and property management	91	1. Short term loans
29	***IV. Total assets in concession and property management***	92	2. Short term bank loans
30	**A.) TOTAL FIXED ASSETS (07+16+23+29)**	93	3. Accounts payable
31	1. Materials	94	accounts payable belonging to the current year's budget
32	2. Semi-finished goods and work-in-progress	95	accounts payable belonging to the next year's budget
33	3. Animals for breeding and fattening and other livestock	96	4. Other short-term liabilities
34	4. Self manufactured products	97	-bills payable
35	5/a Merchandise (goods), packings, services transmitted	98	-liabilities against employees
36	5/b Assets and inventories in return receivables	99	-liabilities against central budget
37	***I. Total inventories***	100	-liabilities on local business taxes
38	1. Accounts receivable	101	-liabilities on overpayments of local taxes
39	2. Debtors	102	-liabilities on international funding programmes
40	3. Short term loans	103	-liabilities on the advance payment of international funding programmes
41	4. Other receivables	104	-liabilities on irregular payments
42	receivables due next year on loans	105	-liabilities on guarantees
43	receivables due next year on long term receivables	106	-liabilities due next year from the service of long-term loans
44	receivables from international funding	107	-liabilities due next year from the service of issuance of bonds for development purposes
45	payments in advance on funding	108	- liabilities due next year from the service of issuance of bonds for operating purposes
46	receivables on irregular funding	109	-liabilities due next year from the service of investment and development loans
47	- receivables from guarantees	110	-liabilities due next year from the service of operating loans
48	***II. Total receivables***	111	-liabilities due next year from the service of other long term liabilities
49	1. Other participations	112	-short term liabilities belonging to current budget
50	2. Bonds (securities signifying a creditor relationship for trading purposes)	113	-short term liabilities belonging to next year's budget
51	***III. Total securities***	114	-other short term liabilities
52	1. Cash and cheques	115	***II. Total short term liabilities***
53	2. Budgetary bank accounts	116	1. Passive contingent budgetary settlements
54	3. Settlement accounts	117	2. Passive running budgetary settlements
55	4. Foreign liquid assets	118	3. Passive balancing budgetary settlements
56	***IV. Total liquid assets***	119	4. Passive financial off-budget settlements
57	1. Active contingent budgetary settlements	120	Off-budget deposit account
58	2. Active running budgetary settlements	121	Account for international funding programmes currency
59	3. Active balancing budgetary settlements	122	***III. Total other passive accruals (114+...+119)***
60	4. Active financial off-budget settlements	123	**F.) TOTAL LIABILITIES**
61	V. Total other active accruals	124	**TOTAL LIABILITIES AND CAPITAL**
62	**B.) TOTAL CURRENT ASSETS**		
63	**TOTAL ASSETS**		
			A2: only the closing balances are used as variables in the statistical research

01	Regular allowances for employees
02	Non regular allowances for employees
03	Allowances for exterior employees
04	Allowances for employees
05	Social security, sick leave and pension contributions
06	Health insurance paid by employer
07	Material expenditure without VAT and realised exchange losses
08	VAT belonging to material expenditure
9	Other current expenditure
10	Repayment of previous year's residual
11	Allowances for beneficiaries
12	Transfer of cash to central budgetary institutions for operating purposes
13	Transfer of cash to chapter-managed appropriations for operating purposes
14	Transfer of cash to designated state funds for operating purposes
15	Transfer of cash to social security funds for operating purposes
16	Transfer of cash to municipalities for operating purposes
17	Transfer of cash to enterprises with municipalities as controlling shareholders in accordance with Art. 87 of the Treaty of Rome for operating purposes
18	Transfer of cash to enterprises with municipalities as minority shareholders in accordance with Art. 87 of the Treaty of Rome for operating purposes
19	Transfer of cash to enterprises in accordance with Art. 87 of the Treaty of Rome for operating purposes (17+18)
20	Transfer of cash to other enterprises with municipalities as controlling shareholders for operating purposes (not under line 17)
21	Transfer of cash to other enterprises with municipalities as minority shareholders for operating purposes (not under line 18)
22	Transfer of cash to other enterprises for operating purposes (19+20+21)
23	Transfer of cash to financial enterprises for operating purposes
24	Transfer of cash to households for operating purposes
25	Transfer of cash to non-profit organisations for operating purposes
26	Transfer of cash to abroad for operating purposes
27	Social policy benefits
28	Planned residual, tied-up reserves
29	Other operating grants, expenditure (12+……+16+22+….+28)
30	Interest expenditure
31	Renovation
32	Institutional investment expenditure without VAT
33	VAT belonging to investments
34	Transfer of cash to central budgetary institutions for investment purposes
35	Transfer of cash to chapter-managed appropriations for investment purposes
36	Transfer of cash to designated state funds for investment purposes
37	Transfer of cash to social security funds for investment purposes
38	Transfer of cash to municipalities for investment purposes
39	Transfer of cash to enterprises with municipalities as controlling shareholders in accordance with Art. 87 of the Treaty of Rome for investment purposes
40	Transfer of cash to enterprises with municipalities as minority shareholders in accordance with Art. 87 of the Treaty of Rome for investment purposes
41	Transfer of cash to enterprises in accordance with Art. 87 of the Treaty of Rome for investment purposes (39+40)
42	Transfer of cash to other enterprises with municipalities as minority shareholders for investment purposes (excluding line 40)
43	Transfer of cash to other enterprises with municipalities as controlling shareholders for investment purposes (excluding line 39)
44	Transfer of cash to other enterprises for investment purposes (41+42+43)
45	Transfer of cash to financial enterprises for investment purposes
46	Transfer of cash to households for investment purposes
47	Transfer of cash to non-profit organisations for investment purposes
48	Transfer of cash to abroad for investment purposes
49	Total investment expenditure (31+….38+44+…….48)
50	Loan disbursement inside general government
51	Loan disbursement outside general government
52	Repayment of loans inside general government
53	Purchase of shares from financial investment expenditure
54	Grants transferred to budgetary institutions under supervision
55	EXPENDITURE (04+……+11+29+30+49+…….54)
56	Institutional operating revenues without VAT
57	VAT revenues
58	Interest revenues
59	Vehicle tax
60	Local taxes
61	of which: building taxes
62	of which: tax for land not built on
63	of which: communal tax (enterprises)
64	of which: communal tax (private individuals)
65	of which: tourism tax (stays)
66	of which: tourism tax (buildings)
67	of which: business tax (permanent activity)
68	of which: business tax (temporary activity)
69	Levy
70	Personal income tax
71	Other taxes left by the central government to municipalities
72	Fines and penalties
73	Receipt of cash from social security funds for operating purposes
74	Receipt of cash from designated state funds for operating purposes
75	Budgetary supplement
76	Receipt of cash from central budgetary institutions for operating purposes
77	Receipt of cash from chapter-managed appropriations for operating purposes
78	Receipt of cash from municipalities for operating purposes
79	Receipt of cash from enterprises for operating purposes
80	Receipt of cash from financial enterprises for operating purposes
81	Receipt of cash from households for operating purposes
82	Receipt of cash from non-profit organisations for operating purposes
83	Receipt of cash from international organisations for operating purposes
84	Receipt of cash from other foreign sources for operating purposes
85	Other cash and revenues received for operating purposes (75+…..84)

86	Receipt of cash from social security funds for investment purposes
87	Receipt of cash from the designated state funds for investment purposes
88	Sale of tangible assets and immaterial goods
89	Receipt of cash from central budgetary institutions for investment purposes
90	Receipt of cash from chapter-managed appropriations for investment purposes
91	Receipt of cash from municipalities for investment purposes
92	Receipt of cash from enterprises for investment purposes
93	Receipt of cash from financial enterprises for investment purposes
94	Receipt of cash from households for investment purposes
95	Receipt of cash from non-profit organisations for investment purposes
96	Receipt of cash from international organisations for investment purposes
97	Receipt of grants from the EU for investment purposes
98	Receipt of grants from governments for investment purposes
99	Receipt of grants from abroad for investment purposes (not from international organisations)
100	Cash received from foreign sources for investment purposes (96+…+99)
101	Sale and replacement of flats and other premises belonging to municipalities
102	Revenues from privatisation
103	Revenues from company sales
104	Revenues from sales of concessions, licenses and similar rights
105	Accumulation revenues (88+……95+100+…..+104)
106	Loan repayments inside general government
107	Loan repayments outside general government
108	Loan utilization inside general government
109	Dividends, concession fees
110	Share of revenues from financial investments
111	Own source revenues (56+…+60+69+…..74+85+86+87+105+….+110)
112	Central budgetary grants
113	Grants from inspection bodies
114	Balance of expenditure and revenues (current year)
115	Utilization of cash residuals and estimate-residual of previous year
116	Service of short-term loans
117	Service of long-term loans
118	Cashing-in of short-term securities
119	Purchase of short-term securities
120	Cashing-in of long-term securities
121	Purchase of long-term securities
122	Cashing-in of long-term foreign securities
123	Service of loans to abroad
124	Other financing expenditure
125	Financing expenditure (116+….+124)
126	Revenues from short-term bank loans
127	Revenues from long-term bank loans
128	Issuance of short-term securities
129	Sale of short-term securities
130	Issuance of domestic long-term securities
131	Sale of long-term securities
132	Issuance of foreign long-term securities
133	Foreign loans
134	Other financing revenues
135	Financing revenues (126+…+134)
136	Financing total (balance) (115-125+1359=(114)
137	Difference of cash and bank accounts (111+112+113+28-55-125+135)
138	Cash (1st Jan)
139	Cash at the end of the period (137+138)
140	Number of persons employed
141	Number of persons employed according to labour law at the end of the period

d) Budgetary report 2005

01	Regular allowances for employees
02	Non regular allowances for employees
03	Allowances for exterior employees
04	Allowances for employees
05	Social security, sick leave and pension contributions
06	Health insurance paid by employer
07	Material expenditure without VAT and realised exchange losses
08	VAT belonging to material expenditure
9	Other current expenditure
10	Repayment of previous year's residual
11	Allowances for beneficiaries
12	Transfer of cash to central budgetary institutions for operating purposes
13	Transfer of cash to chapter-managed appropriations for operating purposes
14	Transfer of cash to designated state funds for operating purposes
15	Transfer of cash to social security funds for operating purposes
16	Transfer of cash to municipalities for operating purposes
17	Transfer of cash to enterprises with municipalities as controlling shareholders in accordance with Art. 87 of the Treaty of Rome for operating purposes
18	Transfer of cash to enterprises with municipalities as minority shareholders in accordance with Art. 87 of the Treaty of Rome for operating purposes
19	Transfer of cash to enterprises in accordance with Art. 87 of the Treaty of Rome for operating purposes (17+18)
20	Transfer of cash to other enterprises with municipalities as controlling shareholders for operating purposes (not under line 17)
21	Transfer of cash to other enterprises with municipalities as minority shareholders for operating purposes (not under line 18)
22	Transfer of cash to other enterprises for operating purposes (19+20+21)
23	Transfer of cash to financial enterprises for operating purposes
24	Transfer of cash to households for operating purposes
25	Transfer of cash to non-profit organisations for operating purposes
26	Transfer of cash to abroad for operating purposes
27	Social policy benefits
28	Planned residual, tied-up reserves
29	Other operating grants, expenditure (12+……+16+22+….+28)
30	Interest expenditure
31	Renovation
32	Institutional investment expenditure without VAT
33	VAT belonging to investments
34	Transfer of cash to central budgetary institutions for investment purposes
35	Transfer of cash to chapter-managed appropriations for investment purposes
36	Transfer of cash to designated state funds for investment purposes
37	Transfer of cash to social security funds for investment purposes
38	Transfer of cash to municipalities for investment purposes
39	Transfer of cash to enterprises with municipalities as controlling shareholders in accordance with Art. 87 of the Treaty of Rome for investment purposes
40	Transfer of cash to enterprises with municipalities as minority shareholders in accordance with Art. 87 of the Treaty of Rome for investment purposes
41	Transfer of cash to enterprises in accordance with Art. 87 of the Treaty of Rome for investment purposes (39+40)
42	Transfer of cash to other enterprises with municipalities as minority shareholders for investment purposes (excluding line 40)
43	Transfer of cash to other enterprises with municipalities as controlling shareholders for investment purposes (excluding line 39)
44	Transfer of cash to other enterprises for investment purposes (41+42+43)
45	Transfer of cash to financial enterprises for investment purposes
46	Transfer of cash to households for investment purposes
47	Transfer of cash to non-profit organisations for investment purposes
48	Transfer of cash to abroad for investment purposes
49	Transfer of cash due to undertaken guarantees inside the general government
50	Transfer of cash due to undertaken guarantees outside the general government
51	Total investment expenditure (31+….38+44+…….50)
52	Loan disbursement inside general government
53	Loan disbursement outside general government
54	Repayment of loans inside general government
55	Purchase of shares from financial investment expenditure
56	Grants transferred to budgetary institutions under supervision
57	EXPENDITURE (04+……+11+29+30+51+…….56)
58	Institutional operating revenues without VAT
59	VAT revenues
60	Interest revenues
61	Vehicle tax
62	Local taxes
63	of which: building taxes
64	of which: tax for land not built on
65	of which: communal tax (enterprises)
66	of which: communal tax (private individuals)
67	of which: tourism tax (stays)
68	of which: tourism tax (buildings)
69	of which: business tax (permanent activity)
70	of which: business tax (temporary activity)
71	Levy
72	Personal income tax
73	Income tax derived from the rental of fields
74	Other taxes left by the central government to municipalities
75	Fee for burdening the soil
76	Fines and penalties
77	Receipt of cash from social security funds for operating purposes
78	Receipt of cash from designated state funds for operating purposes
79	Budgetary supplement
80	Receipt of cash from central budgetary institutions for operating purposes
81	Receipt of cash from chapter-managed appropriations for operating purposes
82	Receipt of cash from municipalities for operating purposes
83	Receipt of cash from enterprises for operating purposes
84	Receipt of cash from financial enterprises for operating purposes
85	Receipt of cash from households for operating purposes

86	Receipt of cash from non-profit organisations for operating purposes
87	Receipt of cash from international organisations for operating purposes
88	Receipt of cash from other foreign sources for operating purposes
89	Other cash and revenues received for operating purposes (79+…..88)
90	Receipt of cash from social security funds for investment purposes
91	Receipt of cash from the designated state funds for investment purposes
92	Sale of tangible assets and immaterial goods
93	Receipt of cash from central budgetary institutions for investment purposes
94	Receipt of cash from chapter-managed appropriations for investment purposes
95	Receipt of cash from municipalities for investment purposes
96	Receipt of cash from enterprises for investment purposes
97	Receipt of cash from financial enterprises for investment purposes
98	Receipt of cash from households for investment purposes
99	Receipt of cash from non-profit organisations for investment purposes
100	Receipt of cash from international organisations for investment purposes
101	Receipt of grants from the EU for investment purposes
102	Receipt of grants from governments for investment purposes
103	Receipt of grants from abroad for investment purposes (not from international organisations)
104	Cash received from foreign sources for investment purposes (100+…+103)
105	Receipt of cash due to undertaken guarantees outside the general government
106	Receipt of cash due to undertaken guarantees inside the general government
107	Sale and replacement of flats and other premises belonging to municipalities
108	Revenues from privatisation
109	Revenues from company sales
110	Revenues from sales of concessions, licenses and similar rights
111	Accumulation revenues (92+….99+104+….+110)
112	Loan repayments inside general government
113	Loan repayments outside general government
114	Loan utilization inside general government
115	Dividends, concession fees
116	Share of revenues from financial investments
117	Own source revenues (58+..62+71+….78+89+90+91+111+……+116)
118	Central budgetary grants
119	Grants from inspection bodies
120	Balance of expenditure and revenues (current year)) (57-117-118-119)
121	Utilization of cash residuals and estimate-residual of previous year
122	Service of short-term loans
123	Service of long-term loans
124	Cashing-in of short-term securities
125	Purchase of short-term securities
126	Cashing-in of long-term securities
127	Purchase of long-term securities
128	Cashing-in of long-term foreign securities
129	Service of loans for abroad
130	Other financing expenditure
131	Financing expenditure (122+….130)
132	Revenues from short-term bank loans
133	Revenues from long-term bank loans
134	Issuance of short-term securities
135	Sale of short-term securities
136	Issuance of domestic long-term securities
137	Sale of long-term securities
138	Issuance of foreign long-term securities
139	Foreign loans
140	Other financing revenues
141	Financing revenues (132+…..+140)
142	Financing total (balance) (121-131+141)=(120)
143	Difference of cash and bank accounts (117+118+119+28-57-131+141)
144	Cash (1st Jan)1
145	Cash at the end of the period (143+144)
146	Number of persons employed
147	Number of persons employed according to labour law at the end of the period

f) Budgetary report 2006 and 2007 (identical structure)

01	Regular allowances for employees
02	Non regular allowances for employees
03	Allowances for exterior employees
04	Allowances for employees
05	Social security, sick leave and pension contributions
06	Health insurance paid by employer
07	Material expenditure without VAT
08	VAT belonging to material expenditure
9	Other current expenditure
10	Repayment of previous year's residual
11	Transfer of operating grants to central budgetary institutions
12	Transfer of operating grants to chapter-managed appropriations
13	Transfer of operating grants to social security funds
14	Transfer of operating grants to designated state funds
15	Transfer of operating grants to municipalities and their budgetary institutions
16	Transfer of operating grants to multi-purpose microregional associations
17	Expenses due to guarantees inside the general government
18	Total operating grants transferred (11+….+17)
19	Residual from the previous year, transfer of residuals
20	Transfer of cash to enterprises with municipalities as controlling shareholders in accordance with Art. 87 of the Treaty of Rome for operating purposes
21	Transfer of cash to enterprises with municipalities as minority shareholders in accordance with Art. 87 of the Treaty of Rome for operating purposes
22	Transfer of cash to other enterprises for operating purposes, in line with Art. 87 of the Treaty of Rome (20+21)
23	Transfer of cash to other enterprises with municipalities as minority shareholders for operating purposes (not under line 20)
24	Transfer of cash to other enterprises with municipalities as minority shareholders for operating purposes (not under line 21)
25	Transfer of cash to other enterprises for operating purposes (22+23+24)
26	Transfer of cash to financial enterprises for operating purposes
27	Transfer of cash to households for operating purposes
28	Transfer of cash to non-profit organisations for operating purposes
29	Transfer of cash to abroad for operating purposes
30	Transfer of cash to the EU budget for operating purposes
31	Total transfer of cash outside the general government for operating purposes (25+30)
32	Expenditure due to undertaken guarantees outside the general government
33	Other social policy benefits and allowances
34	Allowances for beneficiaries
35	Expenditure without cash flow
36	Other operating grants, expenditure (18+31+….35)
37	Interest expenditure
38	Total operating expenditure (04+…+10+36+37)
39	Renovation
40	Institutional investment expenditure without VAT
41	VAT belonging to investments
42	Transfer of investment grants to central budgetary institutions
43	Transfer of investment grants to chapter-managed appropriations
44	Transfer of investment grants to social security funds
45	Transfer of investment grants to designated state funds
46	Transfer of investment grants to municipalities and their budgetary institutions
47	Transfer of investment grants to multi-purpose microregional associations
48	Total investment grants transferred (42+…+47)
49	Transfer of cash to enterprises with municipalities as controlling shareholders in accordance with Art. 87 of the Treaty of Rome for investment purposes
50	Transfer of cash to enterprises with municipalities as minority shareholders in accordance with Art. 87 of the Treaty of Rome for investment purposes
51	Transfer of cash to enterprises in accordance with Art. 87 of the Treaty of Rome for investment purposes (49+50)
52	Transfer of cash to other enterprises with municipalities as controlling shareholders for investment purposes (excluding line 49)
53	Transfer of cash to other enterprises with municipalities as minority shareholders for investment purposes (excluding line 50)
54	Transfer of cash to other enterprises for investment purposes
55	Transfer of cash to financial enterprises for investment purposes
56	Transfer of cash to households for investment purposes
57	Transfer of cash to non-profit organisations for investment purposes
58	Transfer of cash to abroad for investment purposes
59	Transfer of cash to the EU budget for investment purposes
60	Total transfer of cash outside the general government (54+…+59)
61	Total investment expenditure (39+40+41+48+60)
62	Loan disbursement inside general government
63	Loan disbursement outside general government
64	Repayment of loans inside general government
65	Purchase of shares from financial investment expenditure
66	Grants transferred to budgetary institutions under supervision
67	EXPENDITURE (04+……+11+29+30+51+…….56)
68	Institutional operating revenues for the exercise of authority
69	Other own source revenue
70	VAT revenues
71	Interest revenues
72	Vehicle tax
73	Luxury tax
74	Local taxes
75	- of which: building taxes
76	- of which: tax for land not built on
77	- of which: communal tax (enterprises)
78	- of which: communal tax (private individuals)
79	- of which: tourism tax (stays)
80	- of which: tourism tax (buildings)
81	- of which: business tax (permanent activity)
82	- of which: business tax (temporary activity)
83	Levy
84	Personal income tax
85	Income tax derives from the rental of fields

86	Other taxes left by the central government to municipalities
87	Fee for burdening the soil
88	Allowances and charges related to local taxes, fines and penalties due to municipalities
89	Budgetary supplement
90	Residual from the previous year, receipt of residuals
91	Receipt of operating grants from central budgetary institutions
92	Receipt of operating grants from chapter-managed appropriations
93	Receipt of operating grants from social security funds
94	Receipt of operating grants from designated state funds
95	Receipt of operating grants from municipalities and their budgetary institutions
96	Receipt of operating grants from multi-purpose microregional associations
97	Refunds and revenues from undertaken guarantees
98	Total operating grants received (91+…+97Í)
99	Receipt of operating grants from outside the general government
100	Refunds and from undertaken guarantees from outside the general government
101	Sale of tangible assets and immaterial goods
102	Receipt of investment grants from central budgetary institutions
103	Receipt of investment grants from chapter-managed appropriations
104	Receipt of investment grants from social security funds
105	Receipt of investment grants from designated state funds
106	Receipt of investment grants from municipalities and their budgetary institutions
107	Receipt of investment grants from multi-purpose microregional associations
108	Total investment grants received (102+…+107)
109	Receipt of cash for investment purposes from outside the general government
110	of which: cash received from the EU budget
111	Sale and replacement of flats and other premises belonging to municipalities
112	Revenues from privatisation
113	Revenues from company sales
114	Revenues from sales of concessions, licenses and similar rights
115	Accumulation revenues (101+108+109+111+….+114)
116	Loan repayments inside general government
117	Loan repayments outside general government
118	Assistance loan utilization inside general government
119	Dividends, concession fees
120	Share of revenues from financial investments
121	Own source revenues (68+….+74+83+..+89+90+98+99+100+115+…+120)
122	Central budgetary grants
123	Grants from inspection bodies
124	Balance of expenditure and revenues (current year) (67-121-122-123)
125	Revenues without cash flow
126	Service of short-term loans
127	Service of liquid loans
128	Service of long-term loans
129	Cashing-in of short-term securities
130	Purchase of short-term securities
131	Cashing-in of domestic long-term securities
132	Purchase of long-term securities
133	Cashing-in of long-term foreign securities
134	Service of loans for abroad
135	Other financing expenditure
136	Financing expenditure (126+….+135)
137	Receipt of short-term bank loans
138	Receipt of liquid bank loans
139	Receipt of long-term bank loans
140	Issuance of held-for-trading securities
141	Sale of held-for-trading securities
142	Issuance of securities for investment purposes
143	Sale of long-term securities
144	Issuance of foreign long-term securities
145	Foreign loans
146	Other financing revenues
147	Financing revenues (137+…+146)
148	Financing total (balance) (125-136+147)=124)
149	Total forwardable expenditure received from inside the general government
150	Total forwardable expenditure received from outside the general government
151	Total forwardable revenues received from inside the general government
152	Total forwardable revenues received from outside the general government
153	Difference of cash and bank accounts (121+…+123+35-67-136+147-149-150+151+152)
154	Cash (1st Jan)
155	Cash at the end of the period
156	Number of persons employed
157	Number of persons employed according to labour law at the end of the period

g) Budgetary report 2008

01	Regular allowances for employees
02	Non regular allowances for employees
03	Allowances for exterior employees
04	Allowances for employees
05	Social security, sick leave and pension contributions
06	Health insurance paid by employer
07	Material expenditure without VAT and realised exchange losses
08	VAT belonging to material expenditure
9	Other current expenditure
10	Repayment of previous year's residual
11	Transfer of operating grants to central budgetary institutions
12	Transfer of operating grants to chapter-managed appropriations
13	Transfer of operating grants to social security funds
14	Transfer of operating grants to designated state funds
15	Transfer of operating grants to municipalities and their budgetary institutions
16	Transfer of operating grants to multi-purpose microregional associations
17	Transfer of operating grants to national minority self-governments
18	Expenses due to guarantees inside the general government
19	Total operating grants transferred (11+….+18)
20	Residual from the previous year, transfer of residuals
21	Transfer of cash to enterprises with municipalities as controlling shareholders in accordance with Art. 87 of the Treaty of Rome for operating purposes
22	Transfer of cash to enterprises with municipalities as minority shareholders in accordance with Art. 87 of the Treaty of Rome for operating purposes
23	Transfer of cash to other enterprises for operating purposes, in line with Art. 87 of the Treaty of Rome (21+22)
24	Transfer of cash to other enterprises with municipalities as minority shareholders for operating purposes (not under line 21)
25	Transfer of cash to other enterprises with municipalities as minority shareholders for operating purposes (not under line 22)
26	Transfer of cash to other enterprises for operating purposes (23+24+25)
27	Transfer of cash to financial enterprises for operating purposes
28	Transfer of cash to households for operating purposes
29	Transfer of cash to non-profit organisations for operating purposes
30	Transfer of cash to abroad for operating purposes
31	Transfer of cash to the EU budget for operating purposes
32	Total transfer of cash outside the general government for operating purposes (26+31)
33	Expenditure due to undertaken guarantees outside the general government
34	Other social policy benefits and allowances
35	Allowances for beneficiaries
36	Expenditure without cash flow
37	Other operating grants, expenditure (19+32+….36)
38	Interest expenditure
39	Expenditure related to the remittance of liabilities and the assuming of debt
40	Total operating expenditure (04+…+10+37+39)
41	Renovation
42	Institutional investment expenditure without VAT
43	VAT belonging to investments
44	Transfer of investment grants to central budgetary institutions
45	Transfer of investment grants to chapter-managed appropriations
46	Transfer of investment grants to social security funds
47	Transfer of investment grants to designated state funds
48	Transfer of investment grants to municipalities and their budgetary institutions
49	Transfer of investment grants to multi-purpose microregional associations
50	Transfer of investment grants to national minority self-governments
51	Total investment grants transferred (44+…+50)
52	Transfer of cash to enterprises with municipalities as controlling shareholders in accordance with Art. 87 of the Treaty of Rome for investment purposes
53	Transfer of cash to enterprises with municipalities as minority shareholders in accordance with Art. 87 of the Treaty of Rome for investment purposes
54	Transfer of cash to enterprises in accordance with Art. 87 of the Treaty of Rome for investment purposes (52+53)
55	Transfer of cash to other enterprises with municipalities as controlling shareholders for investment purposes (excluding line 52)
56	Transfer of cash to other enterprises with municipalities as minority shareholders for investment purposes (excluding line 53)
57	Transfer of cash to other enterprises for investment purposes
58	Transfer of cash to financial enterprises for investment purposes
59	Transfer of cash to households for investment purposes
60	Transfer of cash to non-profit organisations for investment purposes
61	Transfer of cash to abroad for investment purposes
62	Transfer of cash to the EU budget for investment purposes
63	Total transfer of cash outside the general government (57+…+62)
64	Total investment expenditure (41+…+43+51+63)
65	Loan disbursement inside general government
66	Loan disbursement outside general government
67	Repayment of loans inside general government
68	Purchase of shares from financial investment expenditure
69	Grants transferred to budgetary institutions under supervision
70	EXPENDITURE (20+40+64+…+69)
71	Institutional operating revenues for the exercise of authority
72	Other own source revenue
73	VAT revenues
74	Interest revenues
75	Vehicle tax
76	Luxury tax
77	Local taxes
78	- of which: building taxes
79	- of which: tax for land not built on
80	- of which: communal tax (enterprises)
81	- of which: communal tax (private individuals)
82	- of which: tourism tax (stays)
83	- of which: tourism tax (buildings)
84	- of which: business tax (permanent activity)
85	- of which: business tax (temporary activity)

86	Levy
87	Personal income tax
88	Income tax derives from the rental of fields
89	Other taxes left by the central government to municipalities
90	Fee for burdening the soil
91	Allowances and charges related to local taxes, fines and penalties due to municipalities
92	Budgetary supplement
93	Residual from the previous year, receipt of residuals
94	Receipt of operating grants from central budgetary institutions
95	Receipt of operating grants from chapter-managed appropriations
96	Receipt of operating grants from social security funds
97	Receipt of operating grants from designated state funds
98	Receipt of operating grants from municipalities and their budgetary institutions
99	Receipt of operating grants from multi-purpose microregional associations
100	Receipt of operating grants from national minority self-governments
101	Refunds and revenues from undertaken guarantees
102	Total operating grants received (94+…+101Í)
103	Receipt of operating grants from outside the general government
104	Refunds and from undertaken guarantees from outside the general government
105	Sale of tangible assets and immaterial goods
106	Receipt of investment grants from central budgetary institutions
107	Receipt of investment grants from chapter-managed appropriations
108	Receipt of investment grants from social security funds
109	Receipt of investment grants from designated state funds
110	Receipt of investment grants from municipalities and their budgetary institutions
111	Receipt of investment grants from multi-purpose microregional associations
112	Receipt of investment grants from national minority self-governments
113	Total investment grants received (106+…+112)
114	Receipt of cash for investment purposes from outside the general government
115	ebből: cash received from the EU budget
116	Sale and replacement of flats and other premises belonging to municipalities
117	Revenues from privatisation
118	Revenues from company sales
119	Revenues from sales of concessions, licenses and similar rights
120	Accumulation revenues (105+113+114+116+…+119)
121	Loan repayments inside general government
122	Loan repayments outside general government
123	Assistance loan utilization inside general government
124	Dividends, concession fees
125	Share of revenues from financial investments
126	Own source revenues (71+…+77+86+…+93+102+…+104+120+…+125)
127	Central budgetary grants
128	Grants from inspection bodies
129	Balance of expenditure and revenues (current year) (70-126-127-128)
130	Revenues without cash flow
131	Service of short-term loans
132	Service of liquid loans
133	Service of long-term loans
134	Cashing-in of short-term securities
135	Purchase of short-term securities
136	Cashing-in of domestic long-term securities
137	Purchase of long-term securities
138	Cashing-in of long-term foreign securities
139	Service of loans for abroad
140	Other financing expenditure
141	Financing expenditure (131+….+140)
142	Receipt of short-term bank loans
143	Receipt of liquid bank loans
144	Receipt of long-term bank loans
145	Issuance of held-for-trading securities
146	Sale of held-for-trading securities
147	Issuance of securities for investment purposes
148	Sale of long-term securities
149	Issuance of foreign long-term securities
150	Foreign loans
151	Other financing revenues
152	Financing revenues (142+…+151)
153	Financing total (balance) (130-141+152)=129)
154	Total forwardable expenditure received from inside the general government
155	Total forwardable expenditure received from outside the general government
156	Total forwardable revenues received from inside the general government
157	Total forwardable revenues received from outside the general government
158	Difference of cash and bank accounts (126+…+128+36-70-141+152-154-155+156+157)
159	Cash (1st Jan)
160	Cash at the end of the period
161	Number of persons employed
162	Number of persons employed according to labour law at the end of the period

Annex 9. a) The range of data downloaded from the website of the Central Statistical Office

1. Mid-year number of residents (calculated from final census results) 2004
2. Number of permanent residents 2004
3. Mid-year number of residents (calculated from final census results) 2005
4. Number of permanent residents 2005
5. Mid-year number of residents (calculated from final census results) 2006
6. Number of permanent residents 2006
7. Mid-year number of residents (calculated from final census results) 2007
8. Number of permanent residents 2007
9. Mid-year number of residents (calculated from final census results) 2008
10. Number of permanent residents 2008

The data are available in breakdowns both by settlements and by counties.

Annex 9. b) Variables relevant for the research from the UMIS NDP database of the National Development Agency

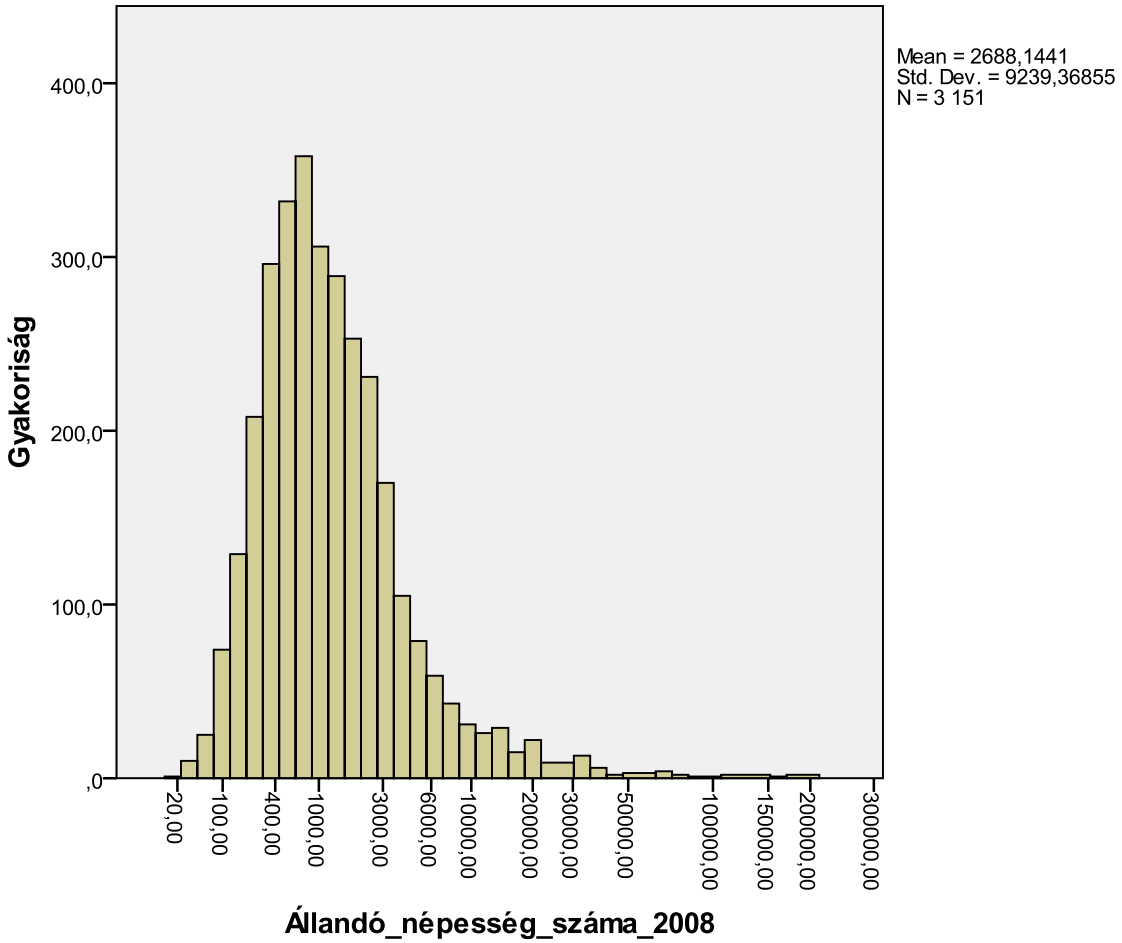
Variable name	Variable type
Economic form	ordinal
Seat - region	ordinal
Seat - county	ordinal
Seat - microregion	ordinal
Seat - settlement	ordinal
Funds paid in 2004	ratio scale
Funds paid in 2005	ratio scale
Funds paid in 2006	ratio scale
Funds paid in 2007	ratio scale
Funds paid in 2008	ratio scale
Funds paid in 2009	ratio scale
Funds paid in 2010	ratio scale
Funds paid in 2011	ratio scale
Funds paid in 2012	ratio scale

Annex 10: Data related to the exploration of the database

a) Average, Std. Deviation, Skewness and Kurtosis of the permanent residents

Descriptive Statistics					
	N		Std. Deviation	Skewness	Kurtosis
Number of permanent residents in 2008	3151	2 688,14	9 239,37	12,32	198,68

M-Estimators				
	Huber's M-Estimator	Tukey's Biweight	Hampel's M-Estimator	Andrews' Wave
Number of permanent residents in 2008	993,955	802,339	915,473	800,327



Gyakoriság: Frequency
Állandó_népesség_száma_2008: Number of permanent residents in 2008

b) Connections among NUTS levels in Hungary

No.	NUTS 1	NUTS 2	NUTS 3 (counties)
1.	Central Hungary	Central Hungary	Budapest and Pest County
2.	Transdanubia	Central Transdanubia	Fejér, Komárom-Esztergom, Veszprém
		Western Hungary	Győr-Moson-Sopron, Vas, Zala
		Southern Transdanubia	Baranya, Somogy, Tolna
3.	Great Plain and North	Northern Hungary	Borsos-Abaúj-Zemplén, Heves, Nógrád
		Northern Great Plain	Hajdú-Bihar, Szabolcs-Szatmár-Bereg, Jász-Nagykun-Szolnok
		Southern Great Plain	Bács-Kiskun, Békés, Csongrád

c1) NUTS1 Regions in Hungary

Transdanubia
Great Plain and North
Central Hungary

c2) NUTS2 Regions and Counties (NUTS3) in Hunagry

Central Hungary (Budapest)	Central Hungary (Pest County)
Central Transdanubia (Fejér County, Komárom-Esztergom County, Veszprém County)	
Western Hungary (Győr-Moson-Sopron County, Vas County, Zala County)	
Southern Transdanubia (Baranya County, Somogy County, Tolna County)	
Northern Hungary (Borsod-Abaúj-Zemplén County, Heves County, Nógrád County)	
Northern Great Plain (Hajdú-Bihar County, Szabolcs-Szatmár-Bereg County, Jász-Nagykun-Szolnok County)	
Southern Great Plain (Bács-Kiskun County, Békés County, Csongrád County)	

d) Settlement structure by NUTS1 large regions (breakdown by number of inhabitants - large region)

Number of inhabitants	NUTS1 Region	Count	Column N%
less than 500 inhabitants	Central Hungary	6	0,6%
	Transdanubia	785	75,8%
	Great Plain and North	245	23,6%
500 to 4999 inhabitants	Central Hungary	114	6,2%
	Transdanubia	848	46,4%
	Great Plain and North	864	47,3%
5000 to 9999 inhabitants	Central Hungary	29	20,1%
	Transdanubia	33	22,9%
	Great Plain and North	82	56,9%
10000 to 49999 inhabitants	Central Hungary	37	29,6%
	Transdanubia	34	27,2%
	Great Plain and North	54	43,2%
more than 50000 inhabitants	Central Hungary	1	5,0%
	Transdanubia	11	55,0%
	Great Plain and North	8	40,0%

e) Settlement structure by NUTS1 large regions (breakdown by large region - number of inhabitants)

NUTS1 Region	Number of inhabitants	Count	Column N%
Central Hungary	less than 500 inhabitants	6	3,2%
	500 to 4999 inhabitants	114	61,0%
	5000 to 9999 inhabitants	29	15,5%
	10000 to 49999 inhabitants	37	19,8%
	more than 50000 inhabitants	1	,5%
Transdanubia	less than 500 inhabitants	785	45,9%
	500 to 4999 inhabitants	848	49,6%
	5000 to 9999 inhabitants	33	1,9%
	10000 to 49999 inhabitants	34	2,0%
	more than 50000 inhabitants	11	,6%
Great Plain and North	less than 500 inhabitants	245	19,6%
	500 to 4999 inhabitants	864	69,0%
	5000 to 9999 inhabitants	82	6,5%
	10000 to 49999 inhabitants	54	4,3%
	more than 50000 inhabitants	8	,6%

f1) The Author's own classification of counties based on the exploratory analysis

Breakdown by the author	Counties
West	Baranya
	Győr-Moson-Sopron
	Somogy
	Vas
	Veszprém
	Zala
Centre	Borsod-Abaúj-Zemplén
	Fejér
	Heves
	Komárom-Esztergom
	Nógrád
	Pest
	Tolna
East	Bács-Kiskun
	Békés
	Csongrád
	Hajdú-Bihar
	Szabolcs-Szatmár-Bereg
	Jász-Nagykun-Szolnok

f2) The Author's own classification of counties based on the exploratory analysis, demonstrated on the map

West
Centre
East

g) Settlement structure according to the Author's own classification (number of inhabitants-geographical location)

Number of inhabitants	Breakdown by the author	Count	Column N%
less than 500 inhabitants	West	747	72,1%
	Centre	226	21,8%
	East	63	6,1%
500 to 4999 inhabitants	West	626	34,3%
	Centre	734	40,2%
	East	466	25,5%
5000 to 9999 inhabitants	West	16	11,1%
	Centre	60	41,7%
	East	68	47,2%
10000 to 49999 inhabitants	West	21	16,8%
	Centre	64	51,2%
	East	40	32,0%
more than 50000 inhabitants	West	8	40,0%
	Centre	6	30,0%
	East	6	30,0%

h) Settlement structure according to the Author's own classification (geographical location - number of inhabitants)

Breakdown by the author	Number of inhabitants	Count	Column N%
West	less than 500 inhabitants	747	52,7%
	500 to 4999 inhabitants	626	44,1%
	5000 to 9999 inhabitants	16	1,1%
	10000 to 49999 inhabitants	21	1,5%
	more than 50000 inhabitants	8	,6%
Centre	less than 500 inhabitants	226	20,7%
	500 to 4999 inhabitants	734	67,3%
	5000 to 9999 inhabitants	60	5,5%
	10000 to 49999 inhabitants	64	5,9%
	more than 50000 inhabitants	6	,6%
East	less than 500 inhabitants	63	9,8%
	500 to 4999 inhabitants	466	72,5%
	5000 to 9999 inhabitants	68	10,6%
	10000 to 49999 inhabitants	40	6,2%
	more than 50000 inhabitants	6	,9%

i) Connections between settlement structure and EU funds, in a breakdown by NUTS regions

NUTS1 Region	NUTS2 Region	Number of inhabitants	Did the municipality receive EU funding in the programming period 2004-2006?	Count	Column N%
Central Hungary	Central Hungary	less than 500 inhabitants	No	6	100,0%
			Yes	0	,0%
		500 to 4999 inhabitants	No	84	73,7%
			Yes	30	26,3%
		5000 to 9999 inhabitants	No	17	58,6%
			Yes	12	41,4%
		10000 to 49999 inhabitants	No	12	32,4%
			Yes	25	67,6%
		more than 50000 inhabitants	No	0	,0%
			Yes	1	100,0%
Transdanubia	Central Transdanubia	less than 500 inhabitants	No	97	88,2%
			Yes	13	11,8%
		501 to 4999 inhabitants	No	166	65,1%
			Yes	89	34,9%
		5001 to 9999 inhabitants	No	5	26,3%
			Yes	14	73,7%
		10001 to 49999 inhabitants	No	2	15,4%
			Yes	11	84,6%
		more than 50000 inhabitants	No	0	,0%
			Yes	4	100,0%
	Western Hungary	less than 500 inhabitants	No	260	78,1%
			Yes	73	21,9%
		502 to 4999 inhabitants	No	201	66,1%
			Yes	103	33,9%
		5002 to 9999 inhabitants	No	2	40,0%
			Yes	3	60,0%
		10002 to 49999 inhabitants	No	4	50,0%
			Yes	4	50,0%
		more than 50000 inhabitants	No	0	,0%
			Yes	5	100,0%
	Southern Transdanubia	less than 500 inhabitants	No	301	88,0%
			Yes	41	12,0%
		503 to 4999 inhabitants	No	181	62,6%
			Yes	108	37,4%
		5003 to 9999 inhabitants	No	3	33,3%
			Yes	6	66,7%
		10003 to 49999 inhabitants	No	3	23,1%
			Yes	10	76,9%
		more than 50000 inhabitants	No	0	,0%
			Yes	2	100,0%

NUTS1 Region	NUTS2 Region	Number of inhabitants	Did the municipality receive EU funding in the programming period 2004-2006?	Count	Column N%
Great Plain and North	Northern Hungary	less than 500 inhabitants	No	151	83,0%
			Yes	31	17,0%
		504 to 4999 inhabitants	No	245	61,6%
			Yes	153	38,4%
		5004 to 9999 inhabitants	No	5	35,7%
			Yes	9	64,3%
		10004 to 49999 inhabitants	No	1	7,1%
			Yes	13	92,9%
		more than 50000 inhabitants	No	0	,0%
			Yes	2	100,0%
	Northern Great Plain	less than 500 inhabitants	No	36	81,8%
			Yes	8	18,2%
		505 to 4999 inhabitants	No	137	48,6%
			Yes	145	51,4%
		5005 to 9999 inhabitants	No	7	17,9%
			Yes	32	82,1%
		10005 to 49999 inhabitants	No	1	4,8%
			Yes	20	95,2%
		more than 50000 inhabitants	No	0	,0%
			Yes	3	100,0%
	Southern Great Plain	less than 500 inhabitants	No	15	78,9%
			Yes	4	21,1%
		506 to 4999 inhabitants	No	96	52,2%
			Yes	88	47,8%
		5006 to 9999 inhabitants	No	2	6,9%
			Yes	27	93,1%
		10006 to 49999 inhabitants	No	3	15,8%
			Yes	16	84,2%
		more than 50000 inhabitants	No	0	,0%
			Yes	3	100,0%

j) Settlements that received EU funds, in a breakdown by NUTS1 large regions

Did the municipality receive EU funding in the programming period 2004-2006?	NUTS1 Region	Count	Column N%
No	Central Hungary	119	5,8%
	Transdanubia	1225	60,0%
	Great Plain and	699	34,2%
Yes	Central Hungary	68	6,1%
	Transdanubia	486	43,9%
	Great Plain and	554	50,0%

k) Connections between settlement structure and EU funds (Author's own classification)

Breakdown by the author	Number of inhabitants	Did the municipality receive EU funding in the programming period 2004-2006?	Count	Column N%
West	less than 500 inhabitants	No	630	84,3%
		Yes	117	15,7%
	504 to 4999 inhabitants	No	418	66,8%
		Yes	208	33,2%
	5004 to 9999 inhabitants	No	6	37,5%
		Yes	10	62,5%
	10004 to 49999 inhabitants	No	6	28,6%
		Yes	15	71,4%
	more than 50000	No	0	,0%
		Yes	8	100,0%
Centre	less than 500 inhabitants	No	185	81,9%
		Yes	41	18,1%
	505 to 4999 inhabitants	No	460	62,7%
		Yes	274	37,3%
	5005 to 9999 inhabitants	No	26	43,3%
		Yes	34	56,7%
	10005 to 49999 inhabitants	No	16	25,0%
		Yes	48	75,0%
	more than 50000	No	0	,0%
		Yes	6	100,0%
East	less than 500 inhabitants	No	51	81,0%
		Yes	12	19,0%
	506 to 4999 inhabitants	No	232	49,8%
		Yes	234	50,2%
	5006 to 9999 inhabitants	No	9	13,2%
		Yes	59	86,8%
	10006 to 49999 inhabitants	No	4	10,0%
		Yes	36	90,0%
	more than 50000	No	0	,0%
		Yes	6	100,0%

l) Settlements that received EU funds, according to the Author's own classification

Did the municipality receive EU funding in the programming period 2004-2006?	Breakdown by the author	Count	Column N%
No	West	1060	51,9%
	Centre	687	33,6%
	East	296	14,5%
Yes	West	358	32,3%
	Centre	403	36,4%
	East	347	31,3%

m) EU funds granted to municipalities, in a breakdown by NUTS1 large regions

NUTS 1 Region	Did the municipality receive EU funding in the programming period 2004-2006?	EU funds granted to municipalities	
		Sum	Count
Central Hungary	No	-	119
	Yes	13 042 966 888	68
	Total	13 042 966 888	187
Transdanubia	No	-	1225
	Yes	49 668 416 600	486
	Total	49 668 416 600	1711
Great Plain and North	No	-	699
	Yes	97 494 872 642	554
	Total	97 494 872 642	1253
Total	No	-	2043
	Yes	160 206 256 129	1108
	Total	**160 206 256 129**	**3151**

n) EU funds granted to municipalities, in a breakdown by NUTS2 regions

NUTS 2 Region	Did the municipality receive EU funding in the programming period 2004-2006?	EU funds granted to municipalities	
		Sum	Count
Central Hungary	No	-	119
	Yes	13 042 966 888	68
	Total	13 042 966 888	187
Central Transdanubia	No	-	270
	Yes	19 866 711 006	131
	Total	19 866 711 006	401
Western Hungary	No	-	467
	Yes	10 489 634 654	188
	Total	10 489 634 654	655
Southern Transdanubia	No	-	488
	Yes	19 312 070 940	167
	Total	19 312 070 940	655
Northern Hungary	No	-	402
	Yes	34 724 652 570	208
	Total	34 724 652 570	610
Northern Great Plain	No	-	181
	Yes	34 476 545 492	208
	Total	34 476 545 492	389
Southern Great Plain	No	-	116
	Yes	28 293 674 580	138
	Total	28 293 674 580	254
Total	No	-	2043
	Yes	160 206 256 129	1108
	Total	**160 206 256 129**	**3151**

o) EU funds granted to municipalities, in a breakdown by NUTS3 counties

NUTS 3 Region (County)	Did the municipality receive EU funding in the programming period 2004-2006?	EU funds granted to municipalities	
		Sum	Count
Baranya	No	-	244
	Yes	8 850 264 627	57
	Total	8 850 264 627	301
Bács-Kiskun	No	-	58
	Yes	8 865 672 290	61
	Total	8 865 672 290	119
Békés	No	-	33
	Yes	11 201 059 251	42
	Total	11 201 059 251	75
Borsod-Abaúj-Zemplén	No	-	233
	Yes	18 913 886 802	125
	Total	18 913 886 802	358
Csongrád	No	-	24
	Yes	8 247 806 220	36
	Total	8 247 806 220	60
Fejér	No	-	52
	Yes	10 606 152 232	56
	Total	10 606 152 232	108
Győr-Moson-Sopron	No	-	142
	Yes	2 833 997 734	40
	Total	2 833 997 734	182
Hajdú-Bihar	No	-	30
	Yes	11 430 672 702	52
	Total	11 430 672 702	82
Heves	No	-	71
	Yes	12 489 074 532	50
	Total	12 489 074 532	121
Komárom-Esztergom	No	-	48
	Yes	4 967 036 295	28
	Total	4 967 036 295	76
Nógrád	No	-	99
	Yes	3 302 451 669	32
	Total	3 302 451 669	131
Pest	No	-	120
	Yes	13 040 059 888	67
	Total	13 040 059 888	187

NUTS 3 Region (County)	Did the municipality receive EU funding in the programming period 2004-2006?	EU funds granted to municipalities	
		Sum	Count
Somogy	No	-	180
	Yes	6 394 014 392	65
	Total	6 394 014 392	245
Szabolcs-Szatmár-Bereg	No	-	117
	Yes	15 021 270 599	112
	Total	15 021 270 599	229
Jász-Nagykun-Szolnok	No	-	34
	Yes	8 006 646 010	44
	Total	8 006 646 010	78
Tolna	No	-	64
	Yes	4 067 791 921	45
	Total	4 067 791 921	109
Vas	No	-	164
	Yes	3 167 804 471	52
	Total	3 167 804 471	216
Veszprém	No	-	169
	Yes	4 308 022 449	48
	Total	4 308 022 449	217
Zala	No	-	161
	Yes	4 492 572 046	96
	Total	4 492 572 046	257
Total	No	-	2043
	Yes	160 206 256 129	1108
	Total	**160 206 256 129**	**3151**

p) EU funds granted to municipalities, in a breakdown by the Author's own classification

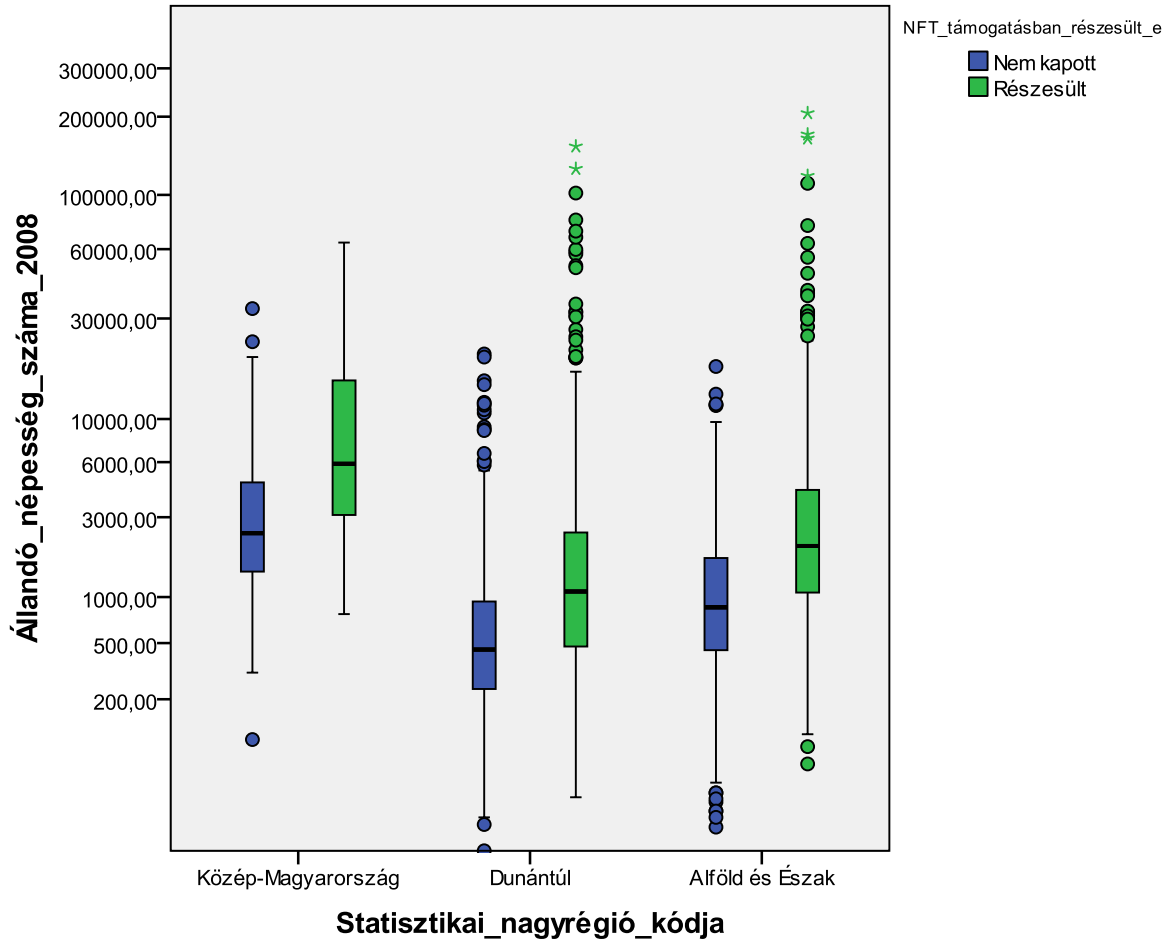
Breakdown by the author	Did the municipality receive EU funding in the programming period 2004-2006?	EU funds granted to municipalities	
		Sum	Count
West	No	-	1060
	Yes	30 046 675 719	358
	Total	30 046 675 719	1418
Centre	No	-	687
	Yes	67 386 453 339	403
	Total	67 386 453 339	1090
East	No	-	296
	Yes	62 773 127 072	347
	Total	62 773 127 072	643
Total	No	-	2043
	Yes	160 206 256 129	1108
	Total	**160 206 256 129**	**3151**

q) Number of permanent residents, in different territorial breakdowns, using a box-plot demonstration method

The box-plot figures are interpreted as follows: the box contains 50% of observations; the bottom is 25% while the top 75% percentiles. The horizontal line in the box shows the mean. The length of vertical lines is one and a half interquartiles at most. The items farther than the closing lines – marked with circles – are outliers while those marked with asterisks are extreme outliers. (Kovács 2009)

Vocabulary to Annex 10. g)

Identification in Annex	English term
Alföld és Észak	Great Plain and North
Állandó_népesség_száma_2008	number of permanent residents in 2008
Dél-Alföld	Southern Great Plain
Dél-Dunántúl	Southern Transdanubia
Dunántúl	Transdanubia
Észak-Alföld	Northern Great Plain
Észak-Magyarország	Northern Hungary
Kelet	East
Közép	Centre
Közép-Dunántúl	Central Transdanubia
Közép-Magyarország	Central Hungary
Nem kapott	The municipality did not receive EU funding in programming period 2004-2006
Nyugat	West
Nyugat-Magyarország	Western Hungary
Régió_kódja	Code of the NUTS2 region
Részesült	The municipality received EU funding in the programming period 2004-2006
Statisztikai_nagyrégió_kódja	Code of the NUTS1 large region
Területi_elhelyezkedés	Geographical location (breakdown by the author)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Nem kapott
Részesült
Állandó_népesség_száma_2008
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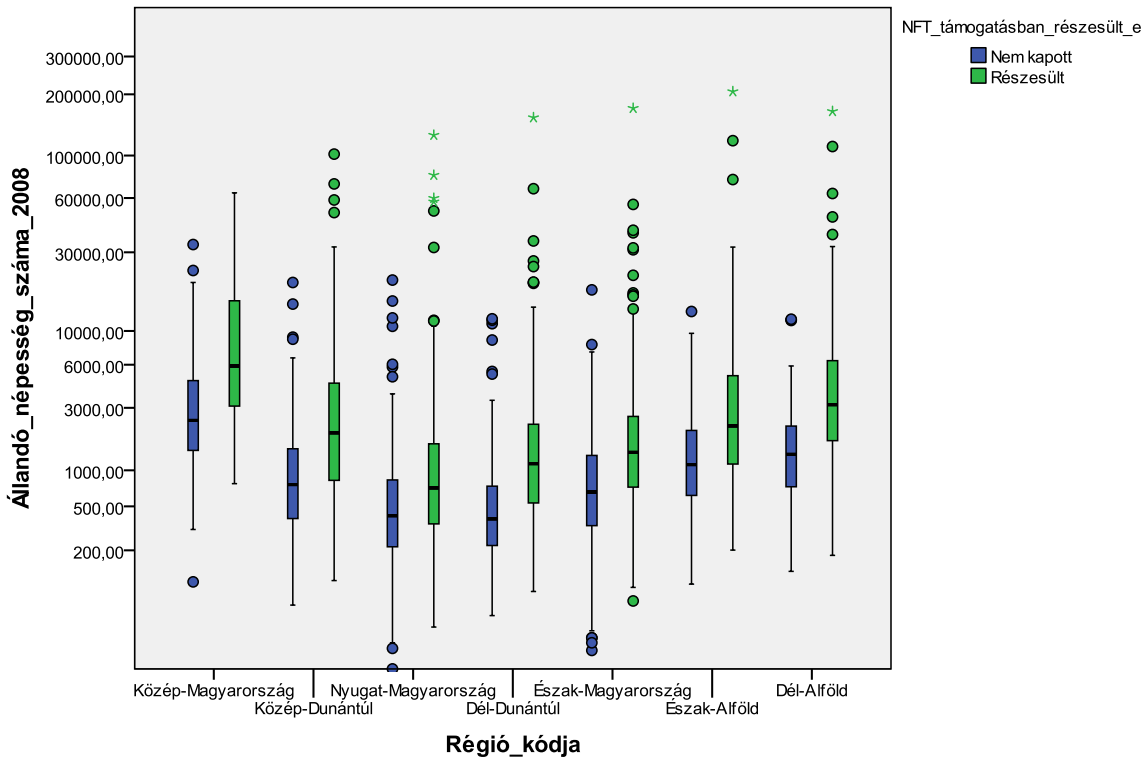
200000,00
100000,00
60000,00
30000,00
10000,00
6000,00
3000,00
1000,00
500,00
200,00
Közép-Magyarország
Dunántúl
Alföld és Észak
Statisztikai_nagyrégió_kódja

-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Nem kapott
Részesült
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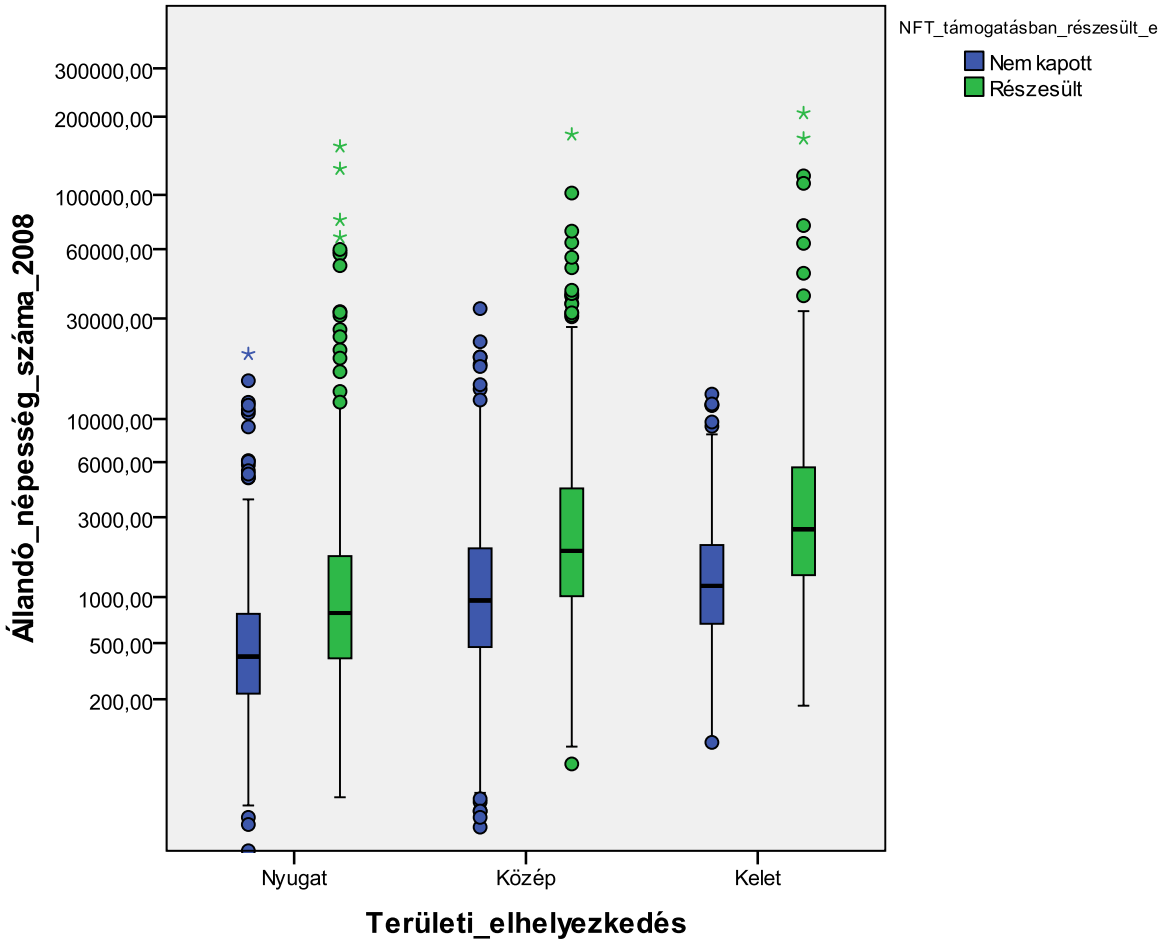
100000,00
60000,00
30000,00
10000,00
6000,00
3000,00
1000,00
500,00
200,00
Közép-Magyarország
Közép-Dunántúl
Nyugat-Magyarország
Dél-Dunántúl
Észak-Magyarország
Észak-Alföld
Dél-Alföld
Régió_kódja


NFT_támogatásban_részesült_e
Nem kapott
Részesült
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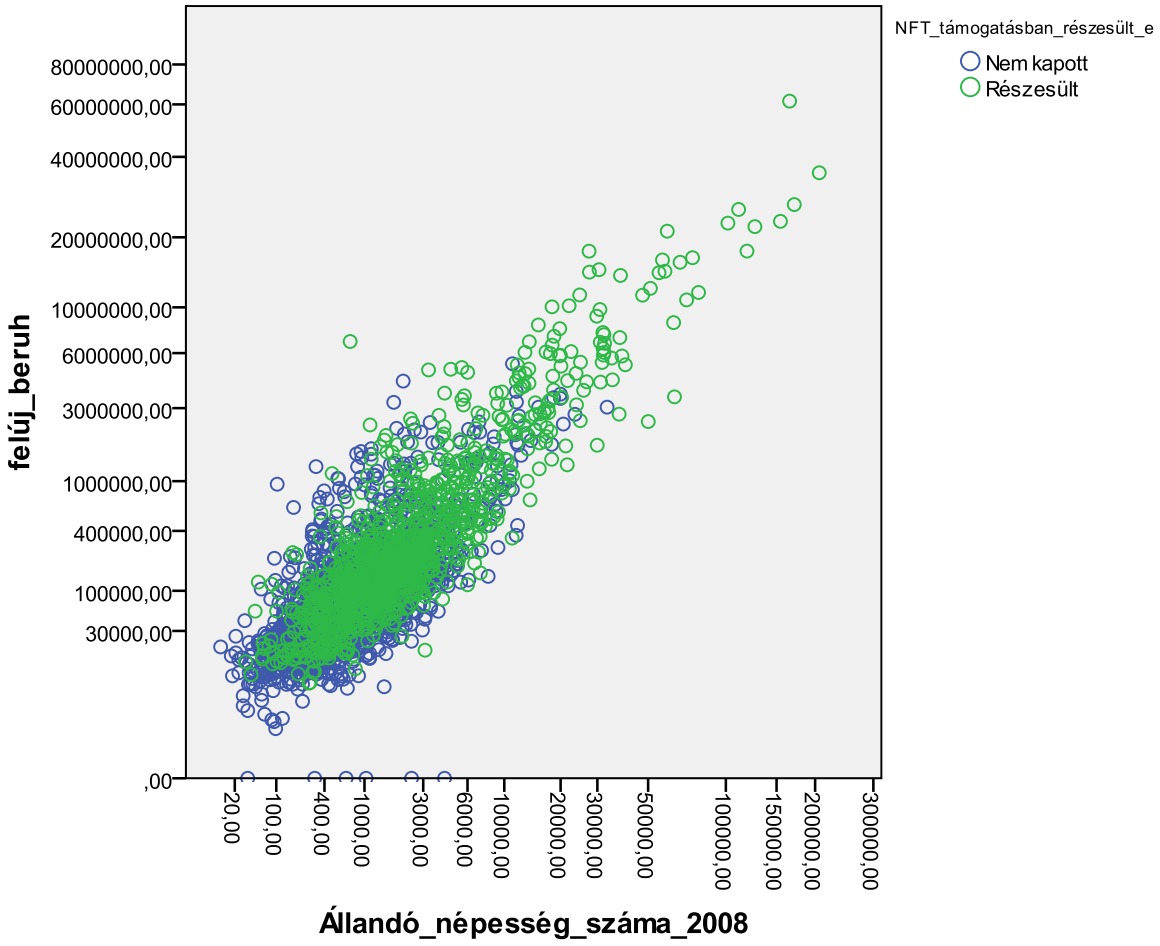
200000,00
100000,00
60000,00
30000,00
10000,00
6000,00
3000,00
1000,00
500,00
200,00
Állandó_népesség_száma_2008
Nyugat
Közép
Kelet
Területi_elhelyezkedés

Annex 11: Testing results for Hypothesis H2

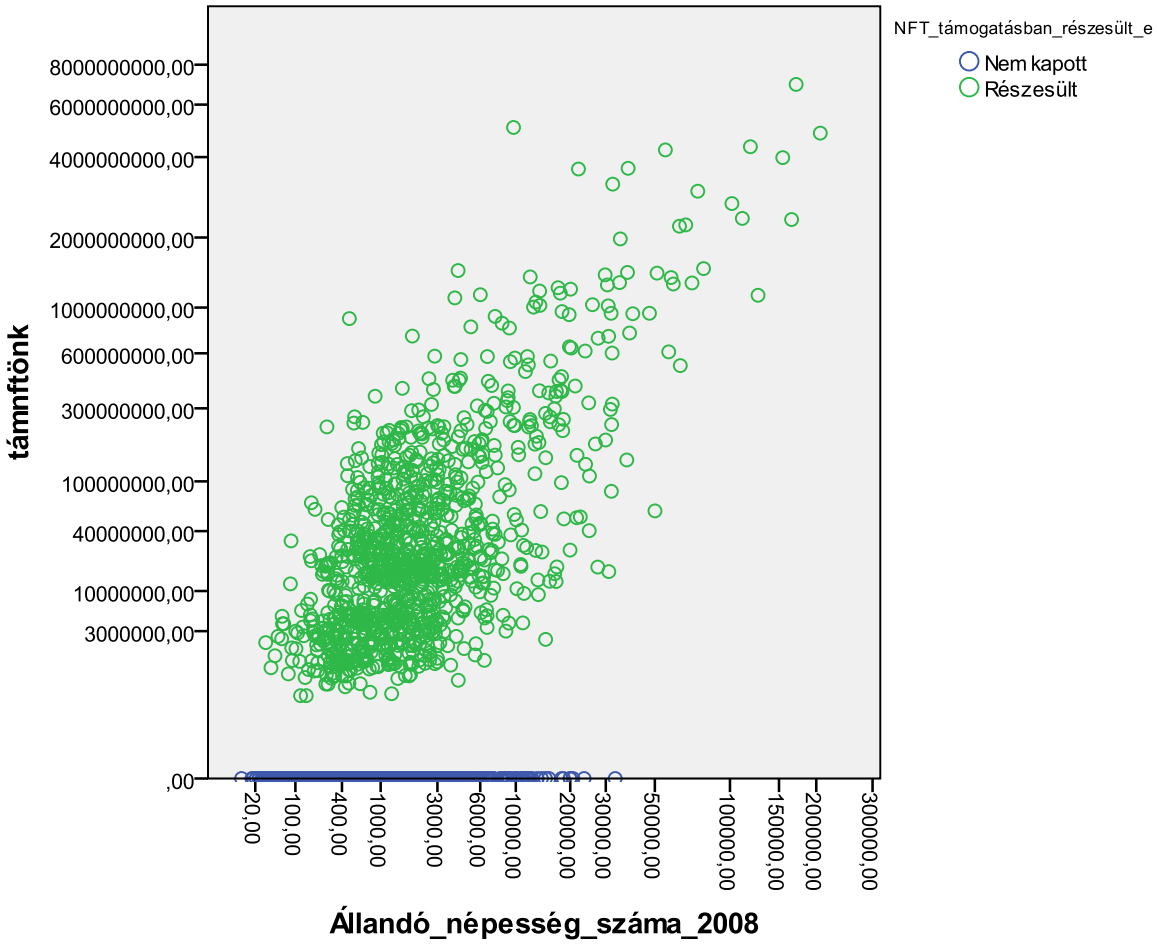
Vocabulary to Annex 11. a-c)

Identification in Annex	English term
Állandó_népesség_száma_2008	Number of permanent residents in 2008
felúj_beruh	Renovations and Investments
Nem kapott	The municipality did not receive EU funding in programming period 2004-2006
Részesült	The municipality received EU funding in the programming period 2004-2006
támnftönk	Amount of EU funds received by a municipality in the programming period 2004-2006

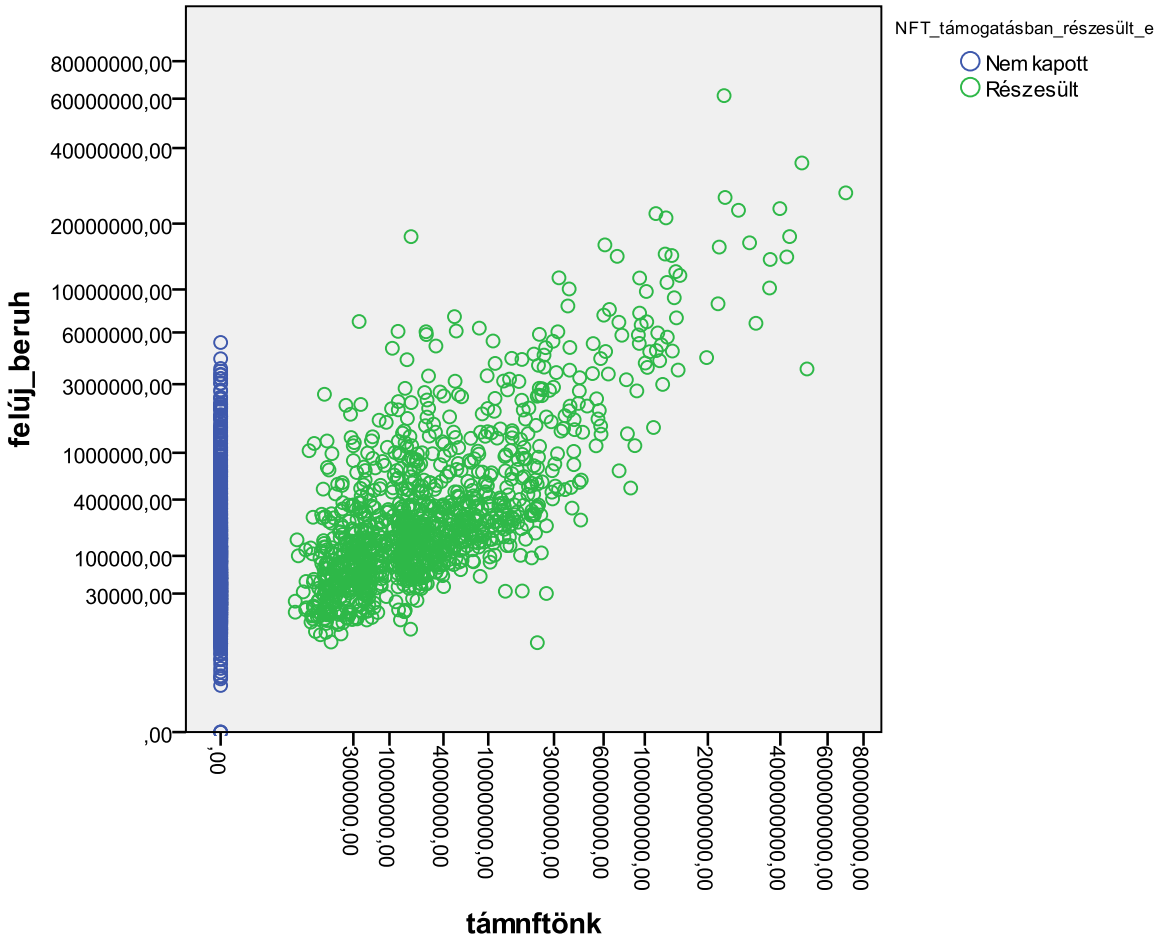
a1) The connection between the number of permanent residents and the municipal expenses devoted to renovation and investment



a2) The connection between the number of permanent residents and the amount of EU funds granted to a municipality



a3) The connection between the municipal expenses devoted to renovation and investment and the EU funds paid



Vocabulary to Annex 11. b)

b1) Correlation between the EU funds paid, the municipal expenses devoted to renovation and investment and the number of inhabitants at national level

Correlations			
	támnftönk	felúj_beruh	Állandó_népesség_száma_2008
támnftönk	1,000	0,726	0,776

b2) Correlation between the EU funds paid, the municipal expenses devoted to renovation and investment and the number of inhabitants in a breakdown by counties

Correlations			
County	támnftönk	felúj_beruh	Állandó_népesség_száma_2008
Baranya	1,000	0,938	0,946
Bács-Kiskun	1,000	0,925	0,894
Békés	1,000	0,768	0,813
Borsod-Abaúj-Zemplén	1,000	0,928	0,931
Csongrád	1,000	0,848	0,841
Fejér	1,000	0,564	0,468
Győr-Moson-Sopron	1,000	0,968	0,971
Hajdú-Bihar	1,000	0,977	0,978
Heves	1,000	0,941	0,868
Komárom-Esztergom	1,000	0,921	0,818
Nógrád	1,000	0,910	0,836
Pest	1,000	0,521	0,499
Somogy	1,000	0,826	0,883
Szabolcs-Szatmár-Bereg	1,000	0,937	0,936
Jász-Nagykun-Szolnok	1,000	0,810	0,894
Tolna	1,000	0,722	0,770
Vas	1,000	0,897	0,923
Veszprém	1,000	0,932	0,874
Zala	1,000	0,899	0,942

c1) Correlation between the EU funds paid, the municipal expenses devoted to renovation and investment and the number of inhabitants at national level, taking the number of inhabitants as a control variable

Correlations					
Control Variables			támnftönk	felúj_beruh	Állandó_népesség_száma_2008
No	támnftönk	Correlation	1,000	0,726	0,776
		Significance (2-tailed)	.	0,000	0,000
		df		3143	3143
	felúj_beruh	Correlation	0,726	1,000	0,900
		Significance (2-tailed)	0,000	.	0,000
		df	3143,000	,000	3143,000
	Állandó_népesség_száma_2008	Correlation	,776	,900	1,000
		Significance (2-tailed)	,000	,000	.
		df	3143	3143	
Állandó_népesség_száma_2008	támnftönk	Correlation	1,000	0,101	
		Significance (2-tailed)	.	0,000	
		df		3142	
	felúj_beruh	Correlation	0,101	1,000	
		Significance (2-tailed)	0,000	.	
		df	3142		

c2) Correlation between the EU funds paid, the municipal expenses devoted to renovation and investment and the number of inhabitants in a breakdown by counties, taking the number of inhabitants as a control variable

Correlations						
County	Control Variables			támnftönk	felúj_beruh	Állandó_népesség_száma_2008
Baranya	No	támnftönk	Correlation	1,000	0,938	0,946
			Significance (2-tailed)	.	0,000	0,000
			df	0	299	299
		felúj_beruh	Correlation	0,938	1,000	0,973
			Significance (2-tailed)	0,000	.	0,000
			df	299	0	299
		Állandó_népesség_száma_2008	Correlation	0,946	0,973	1,000
			Significance (2-tailed)	0,000	0,000	.
			df	299	299	0
	Állandó_népesség_száma_2008	támnftönk	Correlation	1,000	0,231	
			Significance (2-tailed)	.	0,000	
			df	0	298	
		felúj_beruh	Correlation	0,231	1,000	
			Significance (2-tailed)	0,000	.	
			df	298	0	

Correlations						
County	Control Variables			támnftönk	felúj_beruh	Állandó_népesség_száma_2008
Bács-Kiskun	No	támnftönk	Correlation	1,000	0,925	0,894
			Significance (2-tailed)	.	0,000	0,000
			df	0	117	117
		felúj_beruh	Correlation	0,925	1,000	0,962
			Significance (2-tailed)	0,000	.	0,000
			df	117	0	117
		Állandó_népesség_száma_2008	Correlation	0,894	0,962	1,000
			Significance (2-tailed)	0,000	0,000	.
			df	117	117	0
	Állandó_népesség_száma_2008	támnftönk	Correlation	1,000	0,531	
			Significance (2-tailed)	.	0,000	
			df	0	116	
		felúj_beruh	Correlation	0,531	1,000	
			Significance (2-tailed)	0,000	.	
			df	116	0	
Békés	No	támnftönk	Correlation	1,000	0,768	0,813
			Significance (2-tailed)	.	0,000	0,000
			df	0	73	73
		felúj_beruh	Correlation	0,768	1,000	0,878
			Significance (2-tailed)	0,000	.	0,000
			df	73	0	73
		Állandó_népesség_száma_2008	Correlation	0,813	0,878	1,000
			Significance (2-tailed)	0,000	0,000	.
			df	73	73	0
	Állandó_népesség_száma_2008	támnftönk	Correlation	1,000	0,192	
			Significance (2-tailed)	.	0,101	
			df	0	72	
		felúj_beruh	Correlation	0,192	1,000	
			Significance (2-tailed)	0,101	.	
			df	72	0	

Correlations						
County	Control Variables			támnftönk	felúj_beruh	Állandó_népesség_száma_2008
Borsod-Abaúj-Zemplén	No	támnftönk	Correlation	1,000	0,928	0,931
			Significance (2-tailed)	.	0,000	0,000
			df	0	355	355
		felúj_beruh	Correlation	0,928	1,000	0,952
			Significance (2-tailed)	0,000	.	0,000
			df	355	0	355
		Állandó_népesség_száma_2008	Correlation	0,931	0,952	1,000
			Significance (2-tailed)	0,000	0,000	.
			df	355	355	0
	Állandó_népesség_száma_2008	támnftönk	Correlation	1,000	0,370	
			Significance (2-tailed)	.	0,000	
			df	0	354	
		felúj_beruh	Correlation	0,370	1,000	
			Significance (2-tailed)	0,000	.	
			df	354	0	
Csongrád	No	támnftönk	Correlation	1,000	0,848	0,841
			Significance (2-tailed)	.	0,000	0,000
			df	0	58	58
		felúj_beruh	Correlation	0,848	1,000	0,989
			Significance (2-tailed)	0,000	.	0,000
			df	58	0	58
		Állandó_népesség_száma_2008	Correlation	0,841	0,989	1,000
			Significance (2-tailed)	0,000	0,000	.
			df	58	58	0
	Állandó_népesség_száma_2008	támnftönk	Correlation	1,000	0,197	
			Significance (2-tailed)	.	0,134	
			df	0	57	
		felúj_beruh	Correlation	0,197	1,000	
			Significance (2-tailed)	0,134	.	
			df	57	0	

Correlations						
County	Control Variables			támnftönk	felúj_beruh	Állandó_népesség_száma_2008
Fejér	No	támnftönk	Correlation	1,000	0,564	0,468
			Significance (2-tailed)	.	0,000	0,000
			df	0	106	106
		felúj_beruh	Correlation	0,564	1,000	0,894
			Significance (2-tailed)	0,000	.	0,000
			df	106	0	106
		Állandó_népesség_száma_2008	Correlation	0,468	0,894	1,000
			Significance (2-tailed)	0,000	0,000	.
			df	106	106	0
	Állandó_népesség_száma_2008	támnftönk	Correlation	1,000	0,368	
			Significance (2-tailed)	.	0,000	
			df	0	105	
		felúj_beruh	Correlation	0,368	1,000	
			Significance (2-tailed)	0,000	.	
			df	105	0	
Győr-Moson-Sopron	No	támnftönk	Correlation	1,000	0,968	0,971
			Significance (2-tailed)	.	0,000	0,000
			df	0	180	180
		felúj_beruh	Correlation	0,968	1,000	0,974
			Significance (2-tailed)	0,000	.	0,000
			df	180	0	180
		Állandó_népesség_száma_2008	Correlation	0,971	0,974	1,000
			Significance (2-tailed)	0,000	0,000	.
			df	180	180	0
	Állandó_népesség_száma_2008	támnftönk	Correlation	1,000	0,398	
			Significance (2-tailed)	.	0,000	
			df	0	179	
		felúj_beruh	Correlation	0,398	1,000	
			Significance (2-tailed)	0,000	.	
			df	179	0	

Correlations						
County	Control Variables			támnftönk	felúj_beruh	Állandó_népesség_száma_2008
Hajdú-Bihar	No	támnftönk	Correlation	1,000	0,977	0,978
			Significance (2-tailed)	.	0,000	0,000
			df	0	80	80
		felúj_beruh	Correlation	0,977	1,000	0,989
			Significance (2-tailed)	0,000	.	0,000
			df	80	0	80
		Állandó_népesség_száma_2008	Correlation	0,978	0,989	1,000
			Significance (2-tailed)	0,000	0,000	.
			df	80	80	0
	Állandó_népesség_száma_2008	támnftönk	Correlation	1,000	0,309	
			Significance (2-tailed)	.	0,005	
			df	0	79	
		felúj_beruh	Correlation	0,309	1,000	
			Significance (2-tailed)	0,005	.	
			df	79	0	
Heves	No	támnftönk	Correlation	1,000	0,941	0,868
			Significance (2-tailed)	.	0,000	0,000
			df	0	118	118
		felúj_beruh	Correlation	0,941	1,000	0,943
			Significance (2-tailed)	0,000	.	0,000
			df	118	0	118
		Állandó_népesség_száma_2008	Correlation	0,868	0,943	1,000
			Significance (2-tailed)	0,000	0,000	.
			df	118	118	0
	Állandó_népesség_száma_2008	támnftönk	Correlation	1,000	0,741	
			Significance (2-tailed)	.	0,000	
			df	0	117	
		felúj_beruh	Correlation	0,741	1,000	
			Significance (2-tailed)	0,000	.	
			df	117	0	

Correlations						
County	Control Variables			támnftönk	felúj_beruh	Állandó_népesség_száma_2008
Komárom-Esztergom	No	támnftönk	Correlation	1,000	0,921	0,818
			Significance (2-tailed)	.	0,000	0,000
			df	0	74	74
		felúj_beruh	Correlation	0,921	1,000	0,841
			Significance (2-tailed)	0,000	.	0,000
			df	74	0	74
		Állandó_népesség_száma_2008	Correlation	0,818	0,841	1,000
			Significance (2-tailed)	0,000	0,000	.
			df	74	74	0
	Állandó_népesség_száma_2008	támnftönk	Correlation	1,000	0,750	
			Significance (2-tailed)	.	0,000	
			df	0	73	
		felúj_beruh	Correlation	0,750	1,000	
			Significance (2-tailed)	0,000	.	
			df	73	0	
Nógrád	No	támnftönk	Correlation	1,000	0,910	0,836
			Significance (2-tailed)	.	0,000	0,000
			df	0	127	127
		felúj_beruh	Correlation	0,910	1,000	0,805
			Significance (2-tailed)	0,000	.	0,000
			df	127	0	127
		Állandó_népesség_száma_2008	Correlation	0,836	0,805	1,000
			Significance (2-tailed)	0,000	0,000	.
			df	127	127	0
	Állandó_népesség_száma_2008	támnftönk	Correlation	1,000	0,728	
			Significance (2-tailed)	.	0,000	
			df	0	126	
		felúj_beruh	Correlation	0,728	1,000	
			Significance (2-tailed)	0,000	.	
			df	126	0	

Correlations						
County	Control Variables			támnftönk	felúj_beruh	Állandó_népesség_száma_2008
Pest	No	támnftönk	Correlation	1,000	0,521	0,499
			Significance (2-tailed)	.	0,000	0,000
			df	0	184	184
		felúj_beruh	Correlation	0,521	1,000	0,678
			Significance (2-tailed)	0,000	.	0,000
			df	184	0	184
		Állandó_népesség_száma_2008	Correlation	0,499	0,678	1,000
			Significance (2-tailed)	0,000	0,000	.
			df	184	184	0
	Állandó_népesség_száma_2008	támnftönk	Correlation	1,000	0,286	
			Significance (2-tailed)	.	0,000	
			df	0	183	
		felúj_beruh	Correlation	0,286	1,000	
			Significance (2-tailed)	0,000	.	
			df	183	0	
Somogy	No	támnftönk	Correlation	1,000	0,826	0,883
			Significance (2-tailed)	.	0,000	0,000
			df	0	243	243
		felúj_beruh	Correlation	0,826	1,000	0,943
			Significance (2-tailed)	0,000	.	0,000
			df	243	0	243
		Állandó_népesség_száma_2008	Correlation	0,883	0,943	1,000
			Significance (2-tailed)	0,000	0,000	.
			df	243	243	0
	Állandó_népesség_száma_2008	támnftönk	Correlation	1,000	-0,045	
			Significance (2-tailed)	.	0,481	
			df	0	242	
		felúj_beruh	Correlation	-0,045	1,000	
			Significance (2-tailed)	0,481	.	
			df	242	0	

Correlations						
County	Control Variables			támnftönk	felúj_beruh	Állandó_népesség_száma_2008
Szabolcs-Szatmár-Bereg	No	támnftönk	Correlation	1,000	0,937	0,936
			Significance (2-tailed)	.	0,000	0,000
			df	0	227	227
		felúj_beruh	Correlation	0,937	1,000	0,963
			Significance (2-tailed)	0,000	.	0,000
			df	227	0	227
		Állandó_népesség_száma_2008	Correlation	0,936	0,963	1,000
			Significance (2-tailed)	0,000	0,000	.
			df	227	227	0
	Állandó_népesség_száma_2008	támnftönk	Correlation	1,000	0,384	
			Significance (2-tailed)	.	0,000	
			df	0	226	
		felúj_beruh	Correlation	0,384	1,000	
			Significance (2-tailed)	0,000	.	
			df	226	0	
Jász-Nagykun-Szolnok	No	támnftönk	Correlation	1,000	0,810	0,894
			Significance (2-tailed)	.	0,000	0,000
			df	0	76	76
		felúj_beruh	Correlation	0,810	1,000	0,911
			Significance (2-tailed)	0,000	.	0,000
			df	76	0	76
		Állandó_népesség_száma_2008	Correlation	0,894	0,911	1,000
			Significance (2-tailed)	0,000	0,000	.
			df	76	76	0
	Állandó_népesség_száma_2008	támnftönk	Correlation	1,000	-0,022	
			Significance (2-tailed)	.	0,852	
			df	0	75	
		felúj_beruh	Correlation	-0,022	1,000	
			Significance (2-tailed)	0,852	.	
			df	75	0	

Correlations						
County	Control Variables			támnftönk	felúj_beruh	Állandó_népesség_száma_2008
Tolna	No	támnftönk	Correlation	1,000	0,722	0,770
			Significance (2-tailed)	.	0,000	0,000
			df	0	106	106
		felúj_beruh	Correlation	0,722	1,000	0,941
			Significance (2-tailed)	0,000	.	0,000
			df	106	0	106
		Állandó_népesség_száma_2008	Correlation	0,770	0,941	1,000
			Significance (2-tailed)	0,000	0,000	.
			df	106	106	0
	Állandó_népesség_száma_2008	támnftönk	Correlation	1,000	-0,011	
			Significance (2-tailed)	.	0,912	
			df	0	105	
		felúj_beruh	Correlation	-0,011	1,000	
			Significance (2-tailed)	0,912	.	
			df	105	0	
Vas	No	támnftönk	Correlation	1,000	0,897	0,923
			Significance (2-tailed)	.	0,000	0,000
			df	0	214	214
		felúj_beruh	Correlation	0,897	1,000	0,939
			Significance (2-tailed)	0,000	.	0,000
			df	214	0	214
		Állandó_népesség_száma_2008	Correlation	0,923	0,939	1,000
			Significance (2-tailed)	0,000	0,000	.
			df	214	214	0
	Állandó_népesség_száma_2008	támnftönk	Correlation	1,000	0,228	
			Significance (2-tailed)	.	0,001	
			df	0	213	
		felúj_beruh	Correlation	0,228	1,000	
			Significance (2-tailed)	0,001	.	
			df	213	0	

Correlations						
County	Control Variables			támnftönk	felúj_beruh	Állandó_népesség_száma_2008
Veszprém	No	támnftönk	Correlation	1,000	0,932	0,874
			Significance (2-tailed)	.	0,000	0,000
			df	0	215	215
		felúj_beruh	Correlation	0,932	1,000	0,951
			Significance (2-tailed)	0,000	.	0,000
			df	215	0	215
		Állandó_népesség_száma_2008	Correlation	0,874	0,951	1,000
			Significance (2-tailed)	0,000	0,000	.
			df	215	215	0
	Állandó_népesség_száma_2008	támnftönk	Correlation	1,000	0,668	
			Significance (2-tailed)	.	0,000	
			df	0	214	
		felúj_beruh	Correlation	0,668	1,000	
			Significance (2-tailed)	0,000	.	
			df	214	0	
Zala	No	támnftönk	Correlation	1,000	0,899	0,942
			Significance (2-tailed)	.	0,000	0,000
			df	0	255	255
		felúj_beruh	Correlation	0,899	1,000	0,927
			Significance (2-tailed)	0,000	.	0,000
			df	255	0	255
		Állandó_népesség_száma_2008	Correlation	0,942	0,927	1,000
			Significance (2-tailed)	0,000	0,000	.
			df	255	255	0
	Állandó_népesség_száma_2008	támnftönk	Correlation	1,000	0,203	
			Significance (2-tailed)	.	0,001	
			df	0	254	
		felúj_beruh	Correlation	0,203	1,000	
			Significance (2-tailed)	0,001	.	
			df	254	0	

d) The frequency of settlements that received and those that did not receive EU funds, by settlement categories

Number of inhabitants	Did the municipality receive EU funding in the programming period 2004-2006?	Count
less than 200 inhabitants	No	294
	Yes	39
200 to 499 inhibitants	No	572
	Yes	131
500 to 999 inhabitants	No	490
	Yes	186
1000 to 4999 inhabitants	No	620
	Yes	530
5000 to 9999 inhabitants	No	41
	Yes	103
10000 to 49999 inhabitants	No	26
	Yes	99
more than 50000 inhabitants	No	0
	Yes	20

e1) Mean and standard deviation of average per capita investment and development expenses for settlements that received and those that did not receive EU funds, taking the stratification according to size into account

Stratification according to size	Did the municipality receive EU funding in the programming period 2004-2006?	N	Mean	Std. Deviation	Std. Error Mean
less than 200 inhabitants	No	294	262,235	628,824	36,674
	Yes	39	376,724	507,846	81,320
200 to 499 inhabitants	No	572	172,380	293,732	12,282
	Yes	131	187,881	267,062	23,333
500 to 999 inhabitants	No	490	137,768	241,847	10,926
	Yes	186	226,351	693,048	50,817
1000 to 4999 inhabitants	No	620	128,056	195,545	7,853
	Yes	530	165,495	210,778	9,156
5000 to 9999 inhabitants	No	41	129,626	100,784	15,740
	Yes	103	172,403	152,444	15,021
10000 to 49999 inhabitants	No	26	155,122	92,831	18,206
	Yes	99	229,884	128,656	12,930
more than 50000 inhabitants	No	0	.	.	.
	Yes	20	199,733	83,227	18,610

e2) Per capita EU funds granted to municipalities, in a breakdown according to size

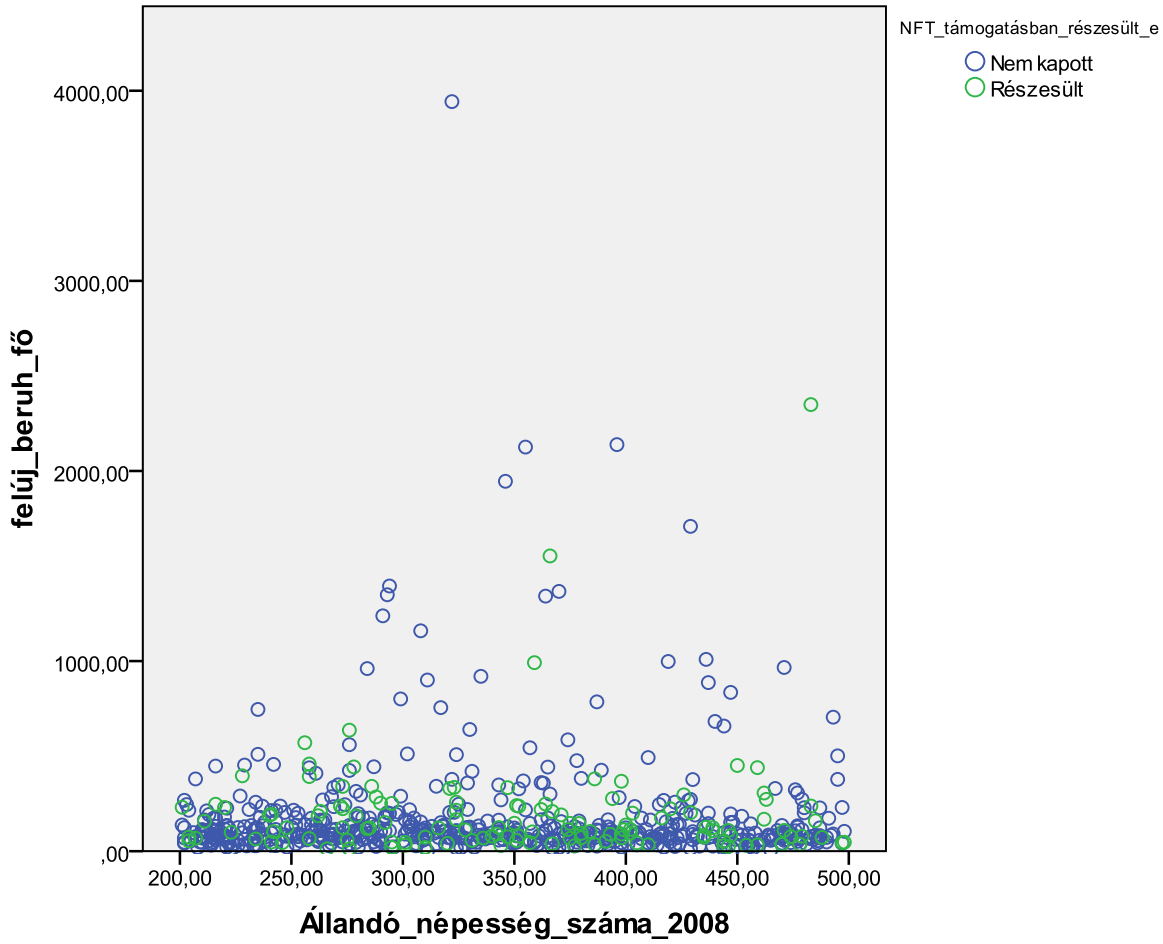
Stratification according to size	támnftönk_fő	
	Count	Mean
less than 200 inhabitants	39	61 023,40
200 to 499 inhabitants	131	50 126,80
500 to 999 inhabitants	186	46 108,16
1000 to 4999 inhabitants	530	27 629,46
5000 to 9999 inhabitants	103	26 193,30
10000 to 49999 inhabitants	99	24 445,12
more than 50000 inhabitants	20	25 584,68

támnftönk_fő: per capita amount of EU funds received by a municipality in the programming period 2004-2006

e3) Testing the equality of the per capita investment and development expenses of municipalities that received and those that did not receive EU funds, taking the stratification according to size into account (t-test)

Stratification according to size		Levene's Test for Equality of Variances		Independent Samples Test						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	90% Confidence Interval of the Difference	
									Lower	Upper
less than 200 inhabitants	Equal variances assumed	1,681	0,196	-1,090	331	0,276	-114,489	105,002	-287,687	58,709
	Equal variances not assumed			-1,283	54,735	0,205	-114,489	89,208	-263,749	34,771
200 to 499 inhabitants	Equal variances assumed	0,024	0,878	-0,554	701	0,580	-15,501	27,990	-61,601	30,599
	Equal variances not assumed			-0,588	208,369	0,557	-15,501	26,368	-59,066	28,064
500 to 999 inhabitants	Equal variances assumed	3,861	0,050	-2,464	674	0,014	-88,583	35,953	-147,802	-29,365
	Equal variances not assumed			-1,704	202,335	0,090	-88,583	51,978	-174,473	-2,694
1000 to 4999 inhabitants	Equal variances assumed	2,260	0,133	-3,122	1148	0,002	-37,439	11,992	-57,180	-17,699
	Equal variances not assumed			-3,104	1089,677	0,002	-37,439	12,062	-57,297	-17,582
5000 to 9999 inhabitants	Equal variances assumed	1,172	0,281	-1,657	142	0,100	-42,778	25,822	-85,530	-0,025
	Equal variances not assumed			-1,966	110,193	0,052	-42,778	21,757	-78,868	-6,687
10000 to 49999 inhabitants	Equal variances assumed	5,849	0,017	-2,776	123	0,006	-74,762	26,935	-119,403	-30,122
	Equal variances not assumed			-3,348	53,134	0,002	-74,762	22,330	-112,144	-37,381

f) Display of the per capita investment and development expenses of settlements with 200 to 500 inhabitants as a function of the number of inhabitants



Nem kapott: The municipality did not receive EU funding in programming period 2004-2006
Részesült: The municipality received EU funding in the programming period 2004-2006
felúj_beruh_fő: total per capita renovations and investments
Állandó_népesség_száma_2008: Number of permanent residents in 2008

g) Testing the equality of the per capita investment and development expenses of municipalities that received and those that did not receive EU funds, in the stratum of 200 to 500 inhabitants, disregarding extreme outliers

	Did the municipality receive EU funding in the programming period 2004-2006?	Count	Mean	Std. Deviation	Std. Error Mean
felúj_beruh_fő	No	541	117,265	93,824	4,034
	Yes	126	146,914	110,674	9,860

		Levene's Test for Equality of Variances		Independent Samples Test						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
felúj_beruh_fő	Equal variances assumed	13,695	0,000	-3,083	665	0,002	-29,650	9,616	-48,532	-10,768
	Equal variances not assumed			-2,783	169,250	0,006	-29,650	10,653	-50,679	-8,620

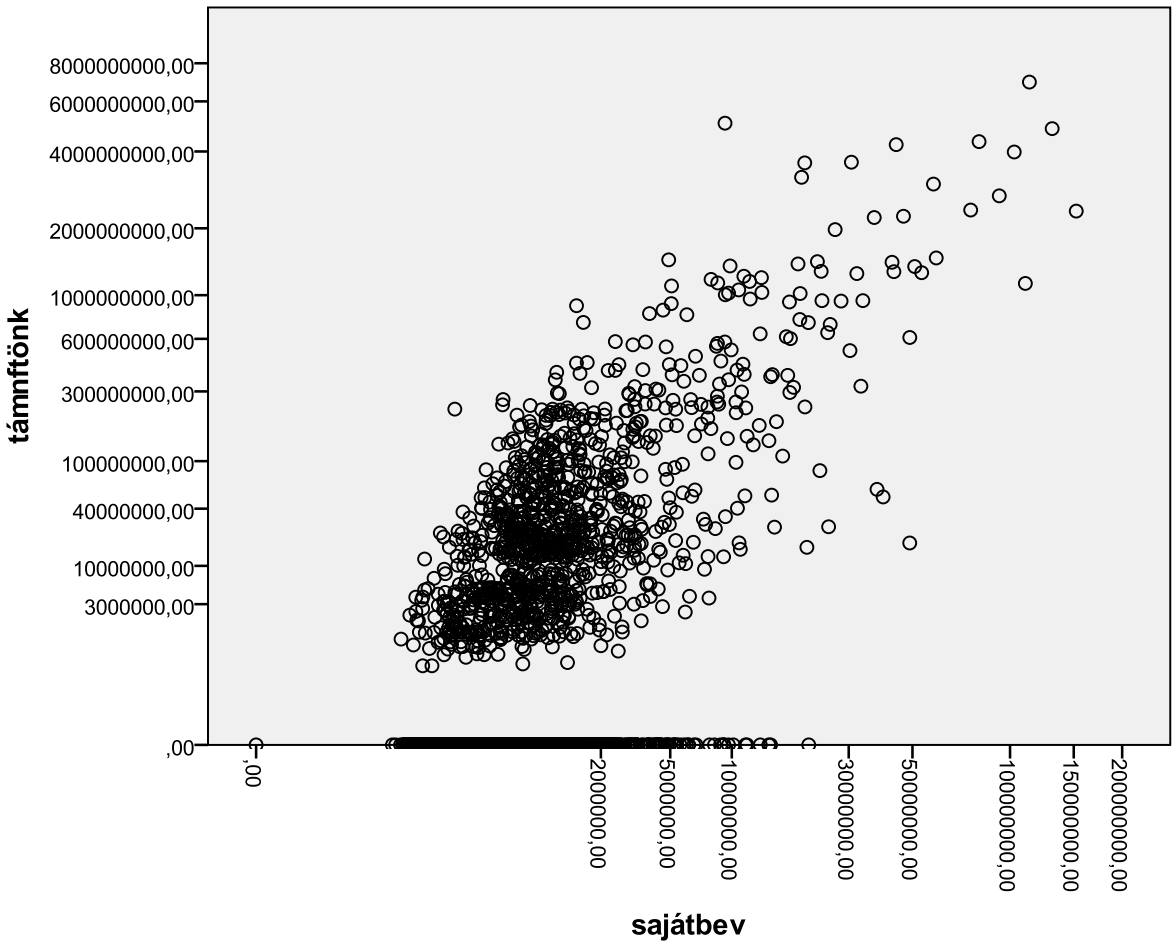
felúj_beruh_fő: total per capita renovations and investments

Annex 12: Testing results for Hypothesis H3

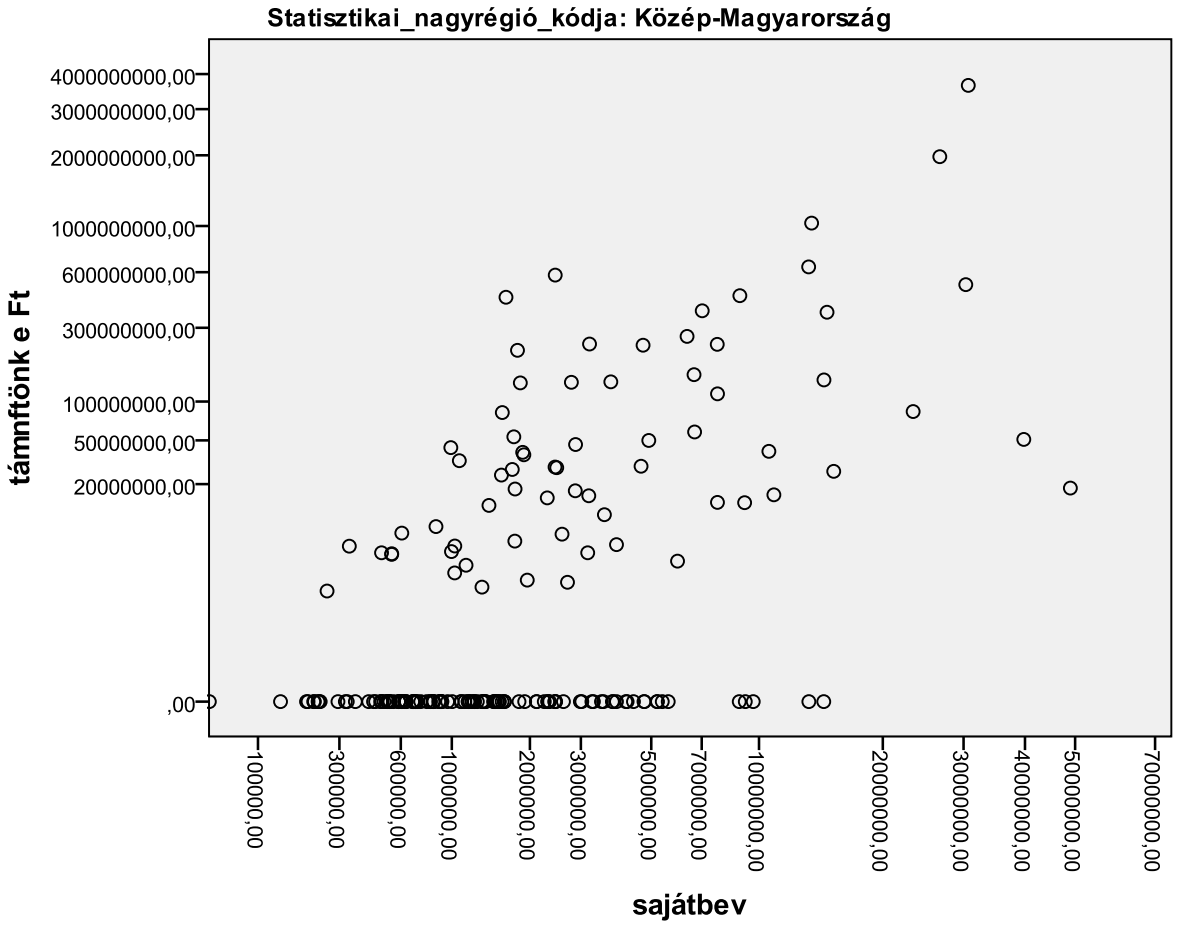
Vocabulary to Annex 12. a-e)

Identification in Annex	English term
Alföld és Észak	Great Plain and North
Dél-Alföld	Southern Great Plain
Dél-Dunántúl	Southern Transdanubia
Dunántúl	Transdanubia
Észak-Alföld	Northern Great Plain
Észak-Magyarország	Northern Hungary
finanszössz	sum of financing
Kelet	East
Közép	Centre
Közép-Dunántúl	Central Transdanubia
Közép-Magyarország	Central Hungary
Nyugat	West
Nyugat-Magyarország	Western Hungary
Régió_kódja	Code of the NUTS2 region
sajátbev	municipal own soure revenues
Statisztikai_nagyrégió_kódja	Code of the NUTS1 large region
támnftönk	amount of EU funds received by a municipality in the programming period 2004-2006

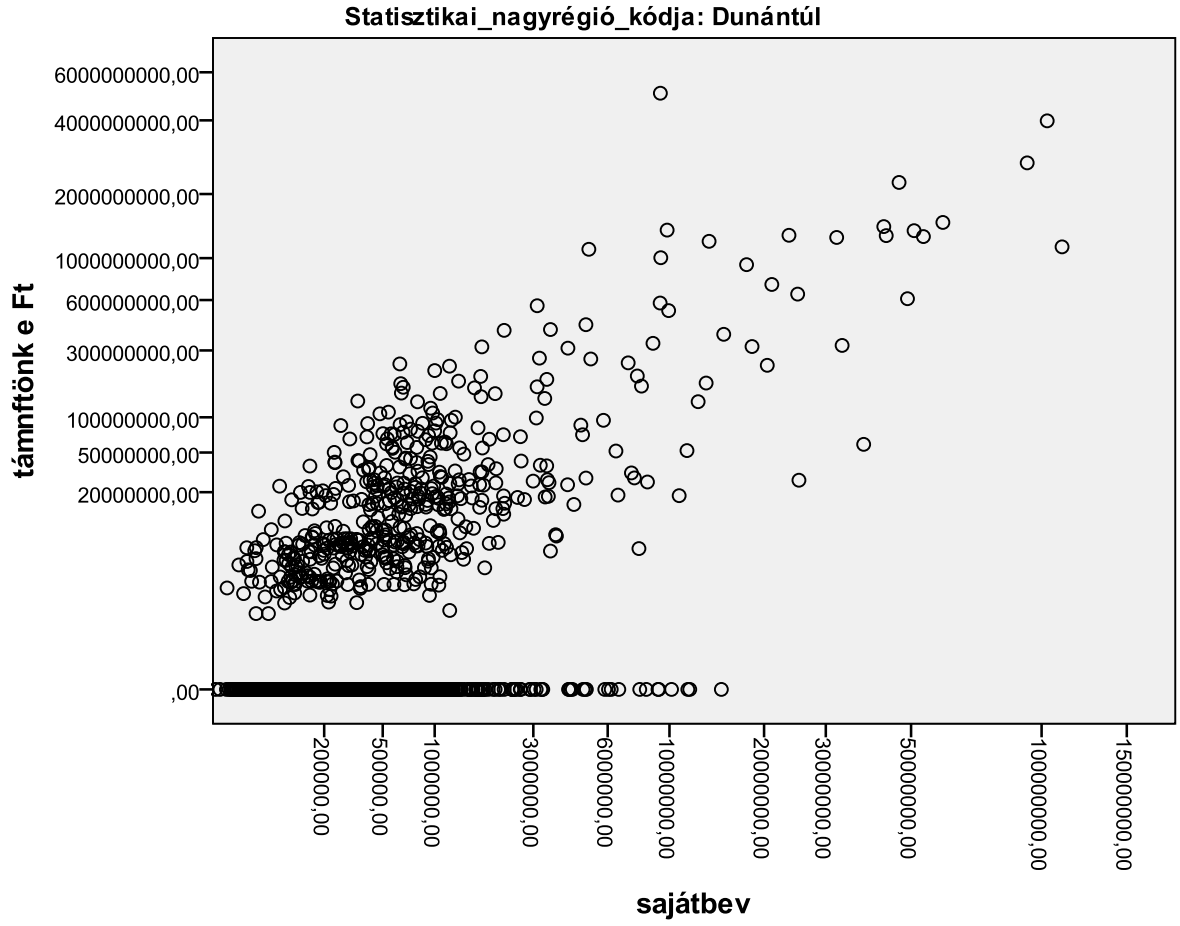
a) Connections between own source revenues and EU funds at national level



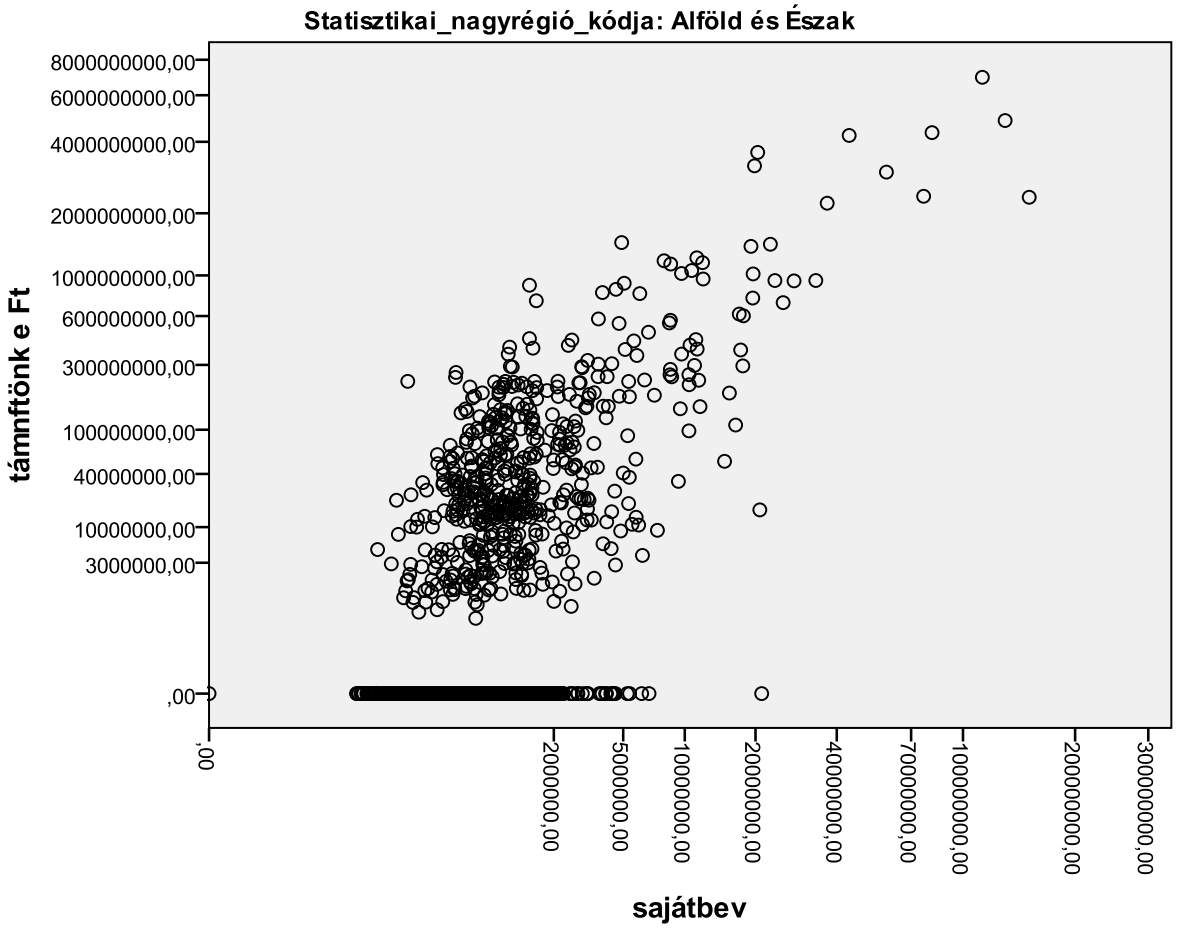
b1) Connections between own source revenues and EU funds according to large regions (NUTS1)



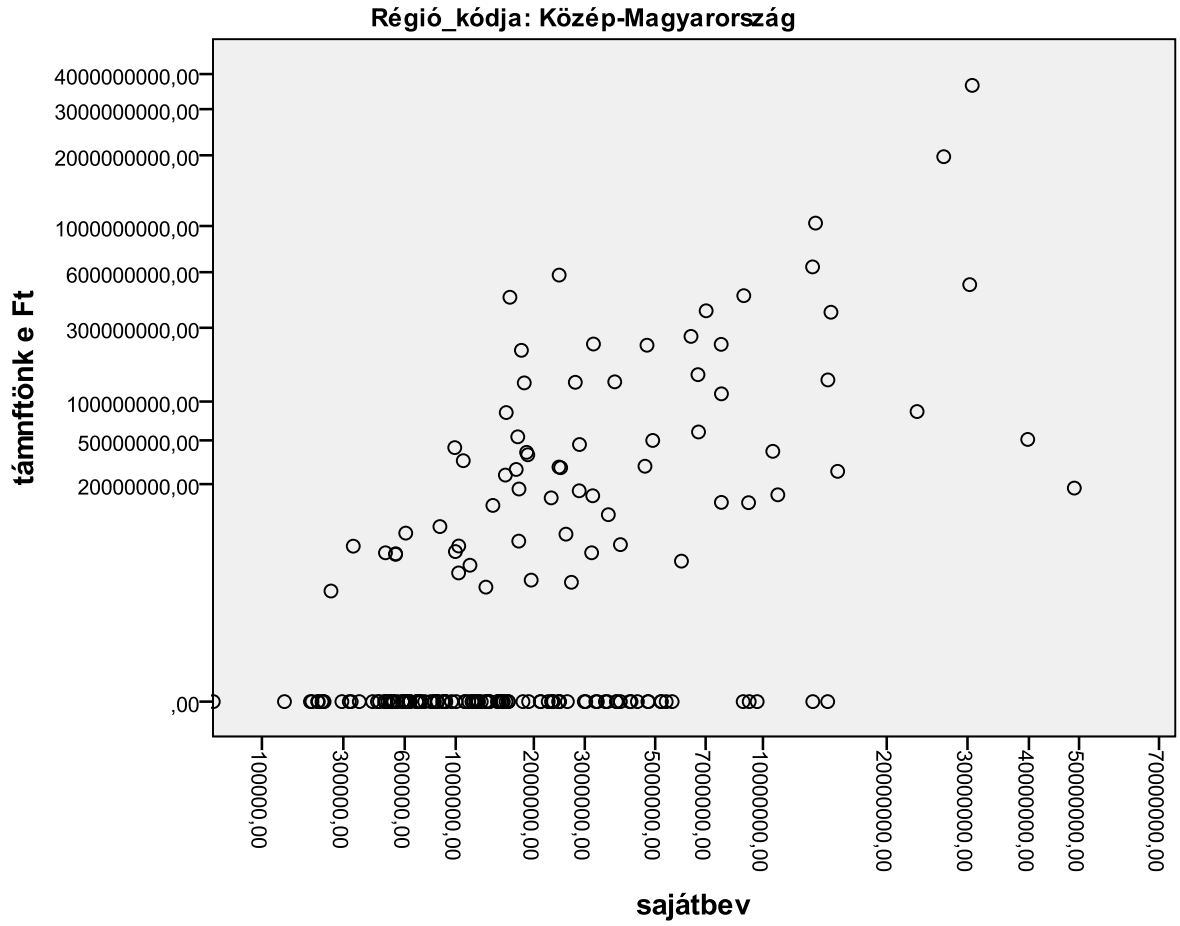
b2) Connections between own source revenues and EU funds according to large regions (NUTS1)



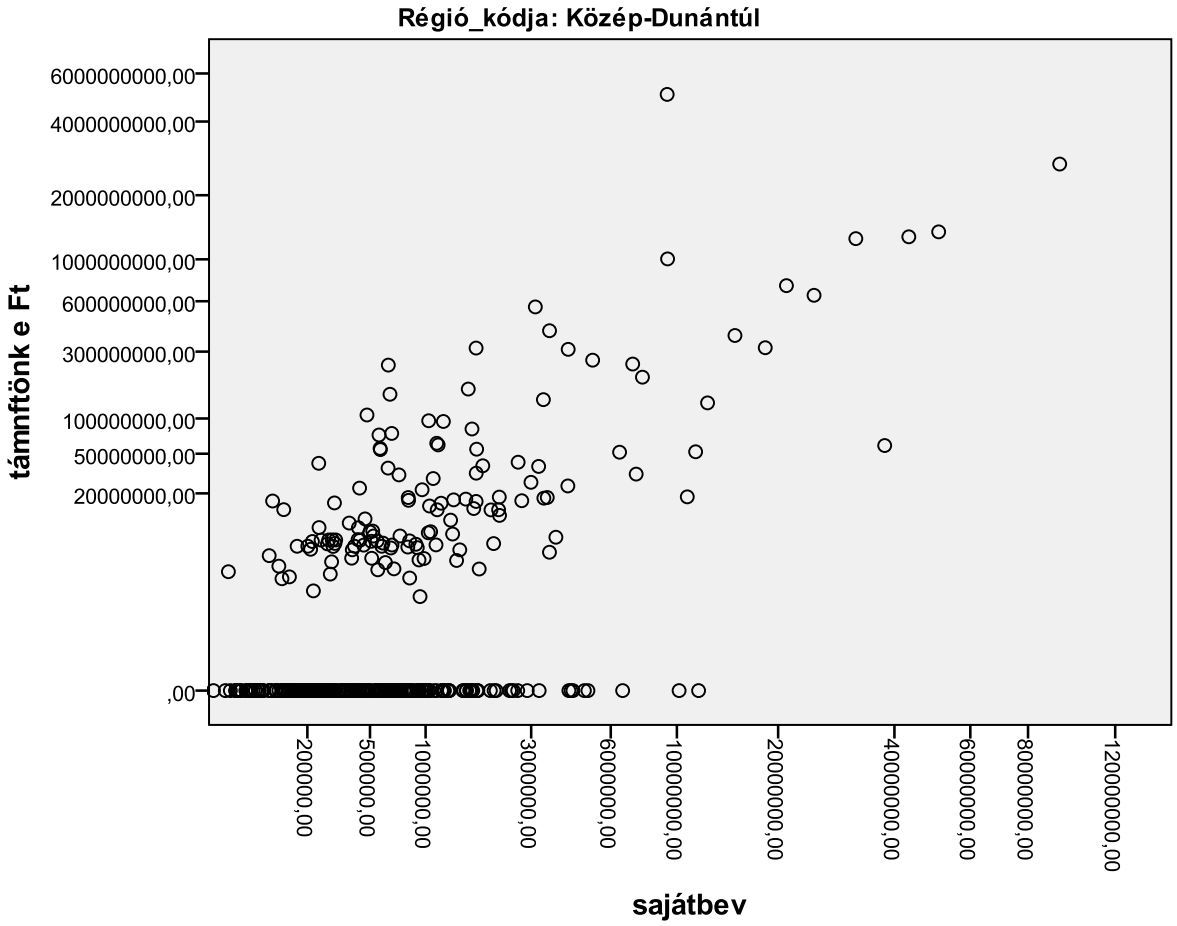
b3) Connections between own source revenues and EU funds according to large regions (NUTS1)



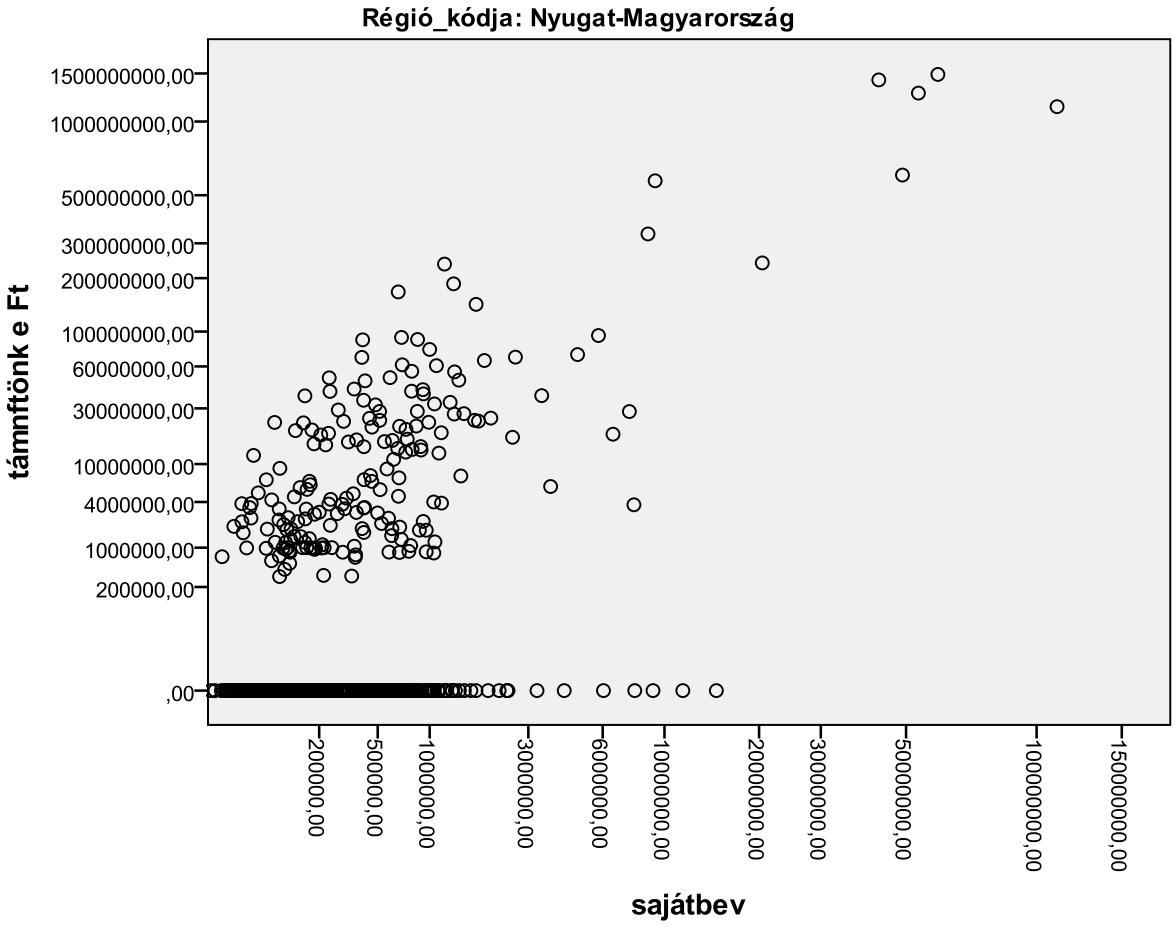
c1) Connections between own source revenues and EU funds according to regions (NUTS2)



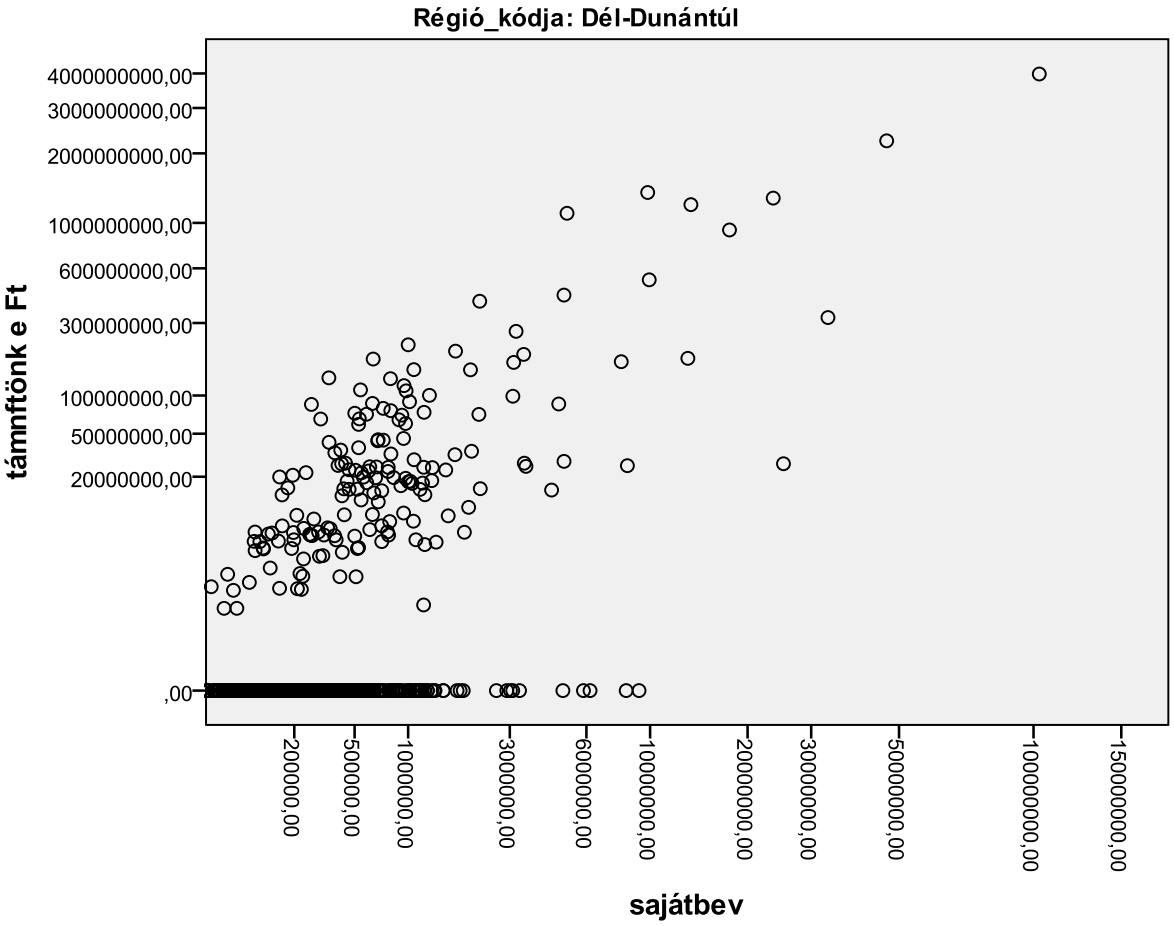
c2) Connections between own source revenues and EU funds according to regions (NUTS2)



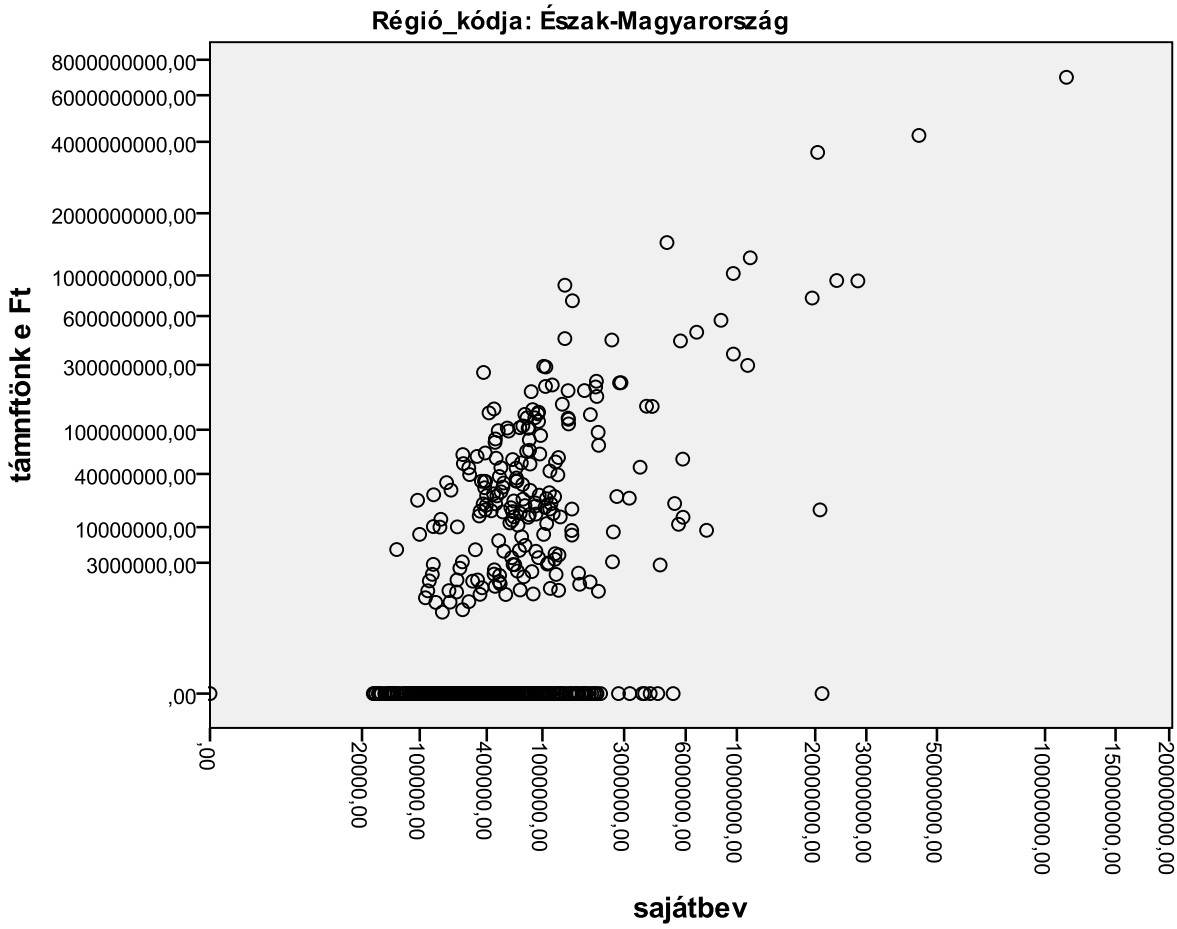
c3) Connections between own source revenues and EU funds according to regions (NUTS2)



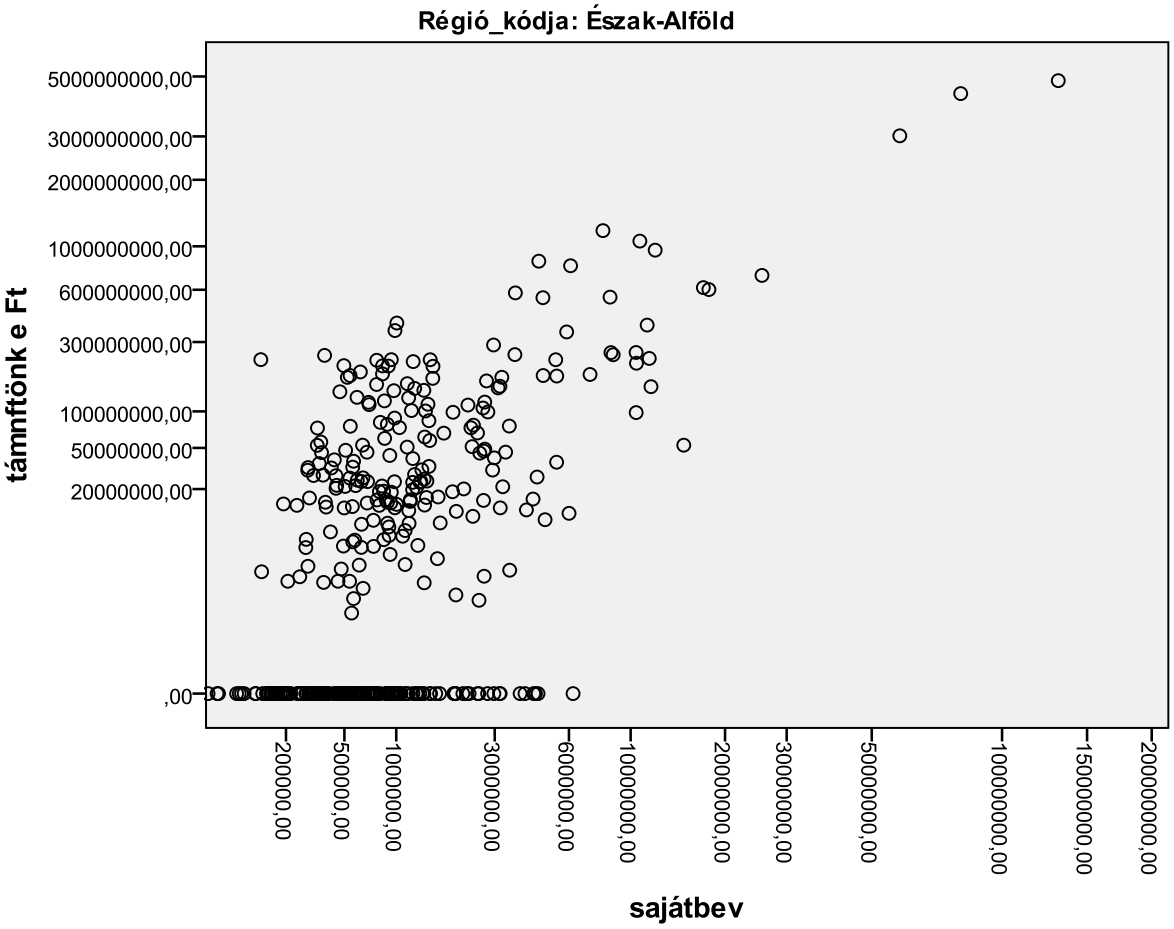
c4) Connections between own source revenues and EU funds according to regions (NUTS2)



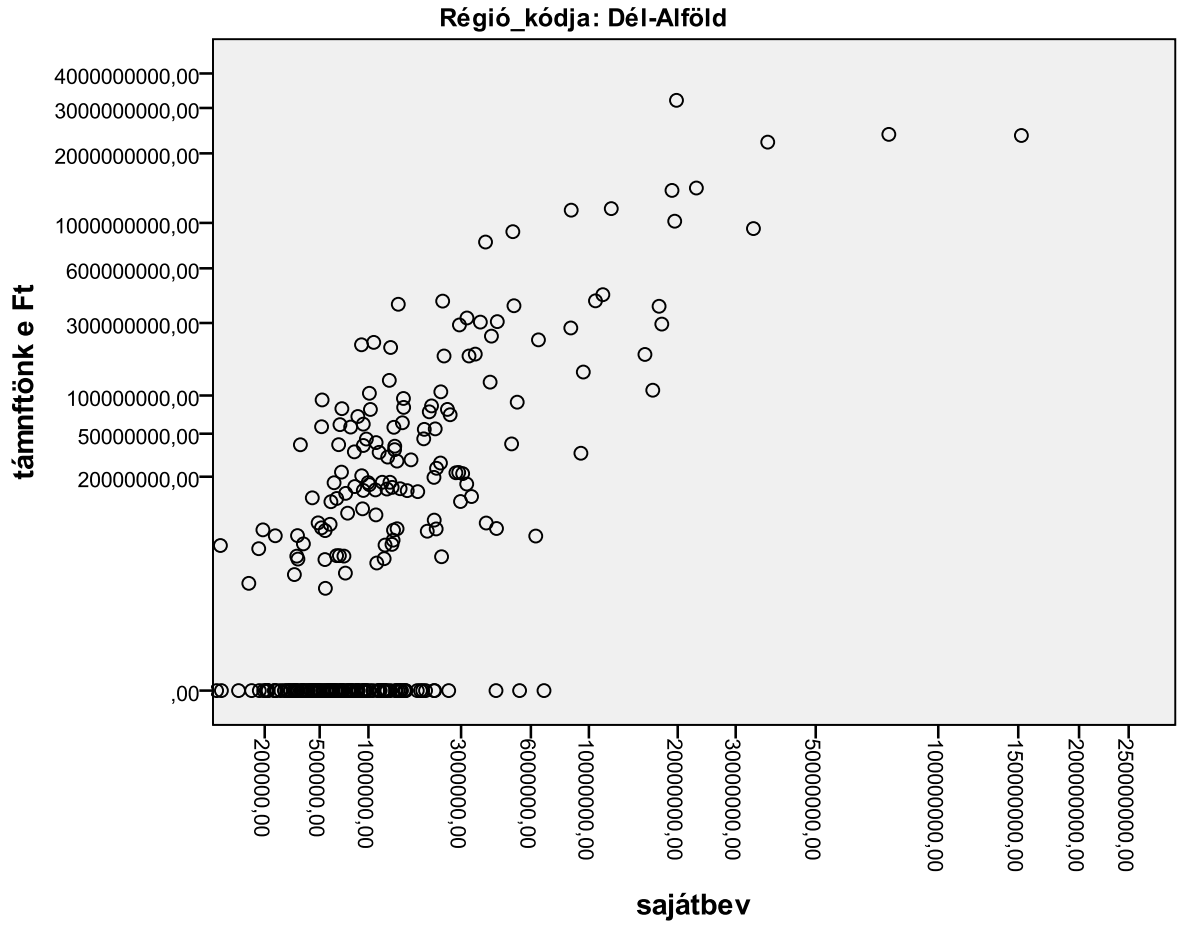
c5) Connections between own source revenues and EU funds according to regions (NUTS2)



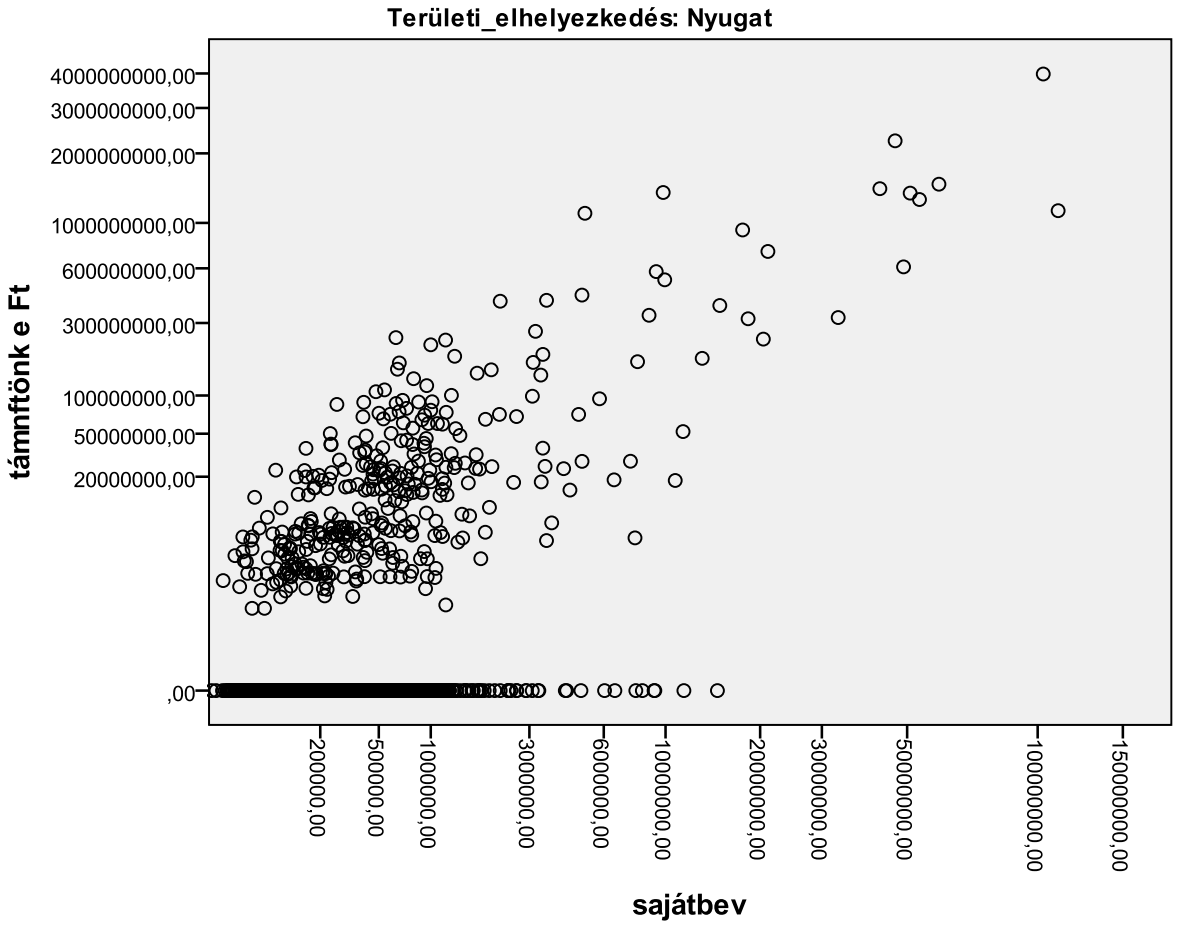
c6) Connections between own source revenues and EU funds according to regions (NUTS2)



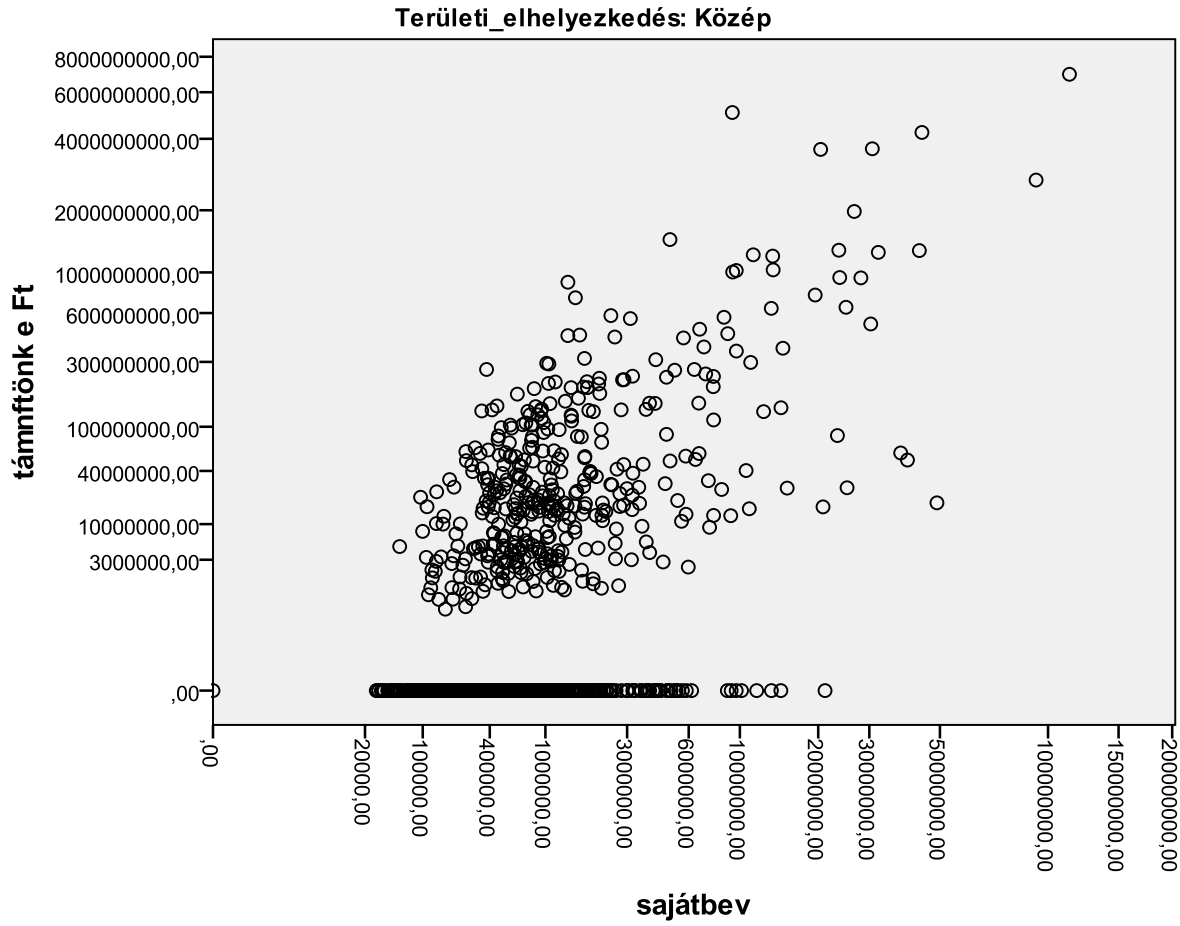
c7) Connections between own source revenues and EU funds according to regions (NUTS2)



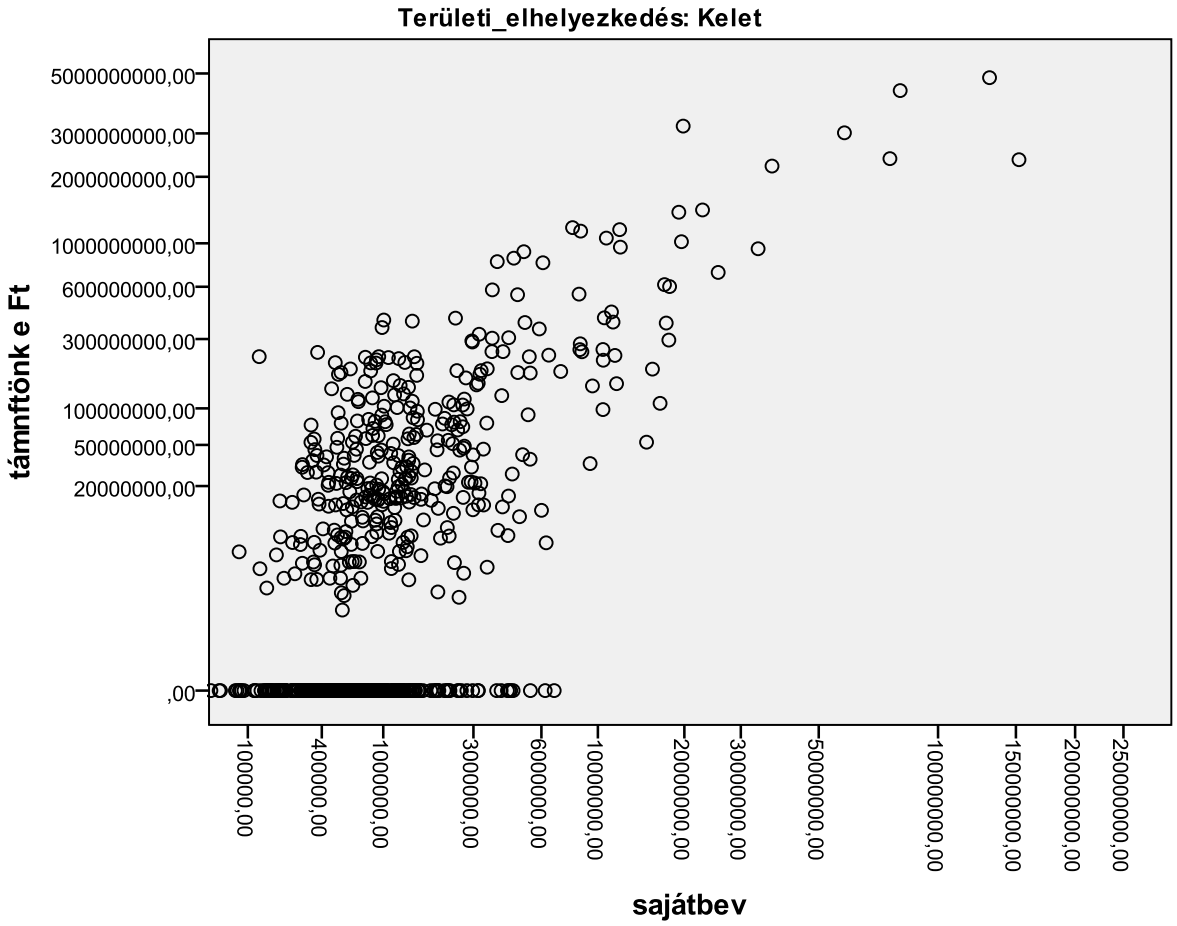
d1) Connections between own source revenues and EU funds according to the Author's own territorial classification



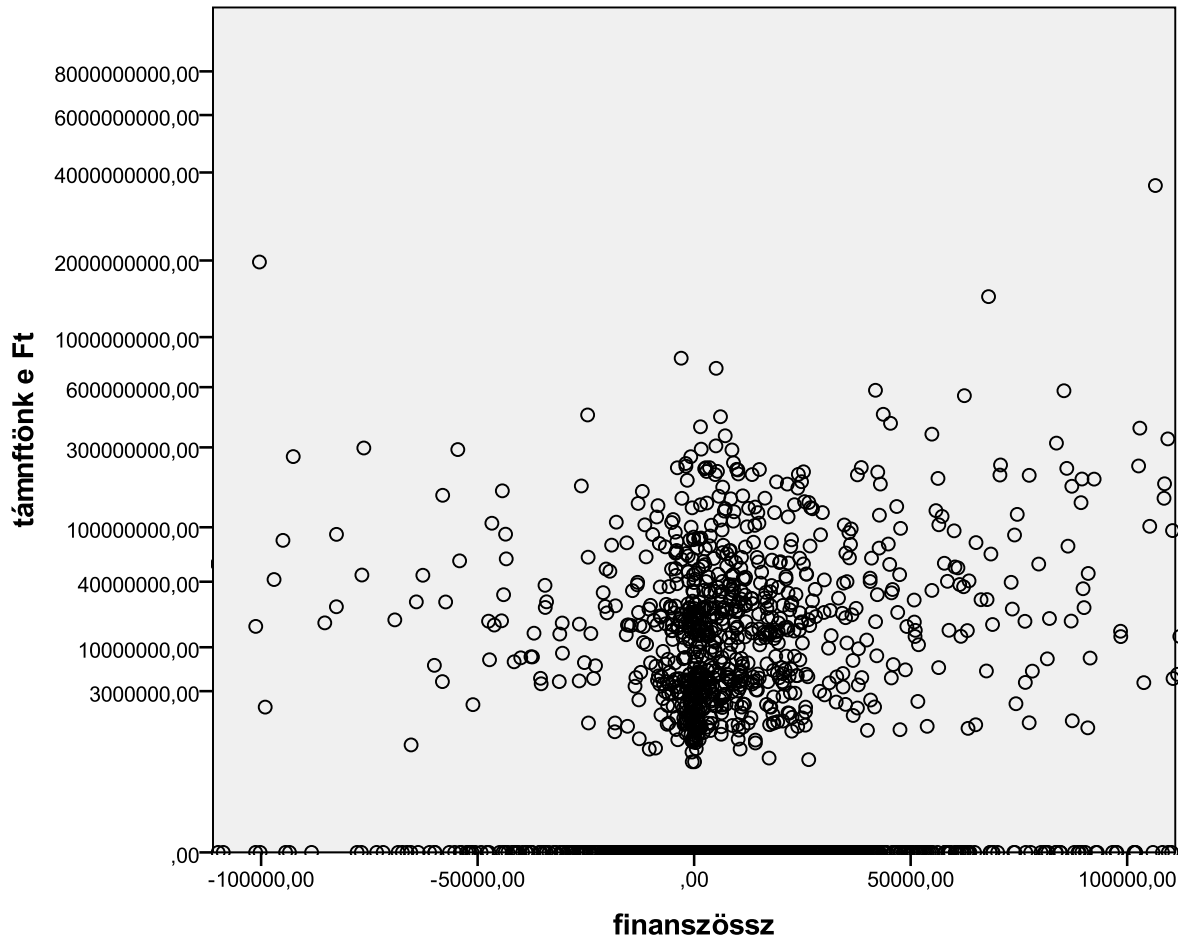
d2) Connections between own source revenues and EU funds according to the Author's own territorial classification



d3) Connections between own source revenues and EU funds according to the Author's own territorial classification



e) Connections between the financial balance and EU funds at national level, narrowed to items close to zero



Did the municipality receive EU funding in the programming period 2004-2006?	Frequency	%
No	1934	69,4
Yes	853	30,6
Total	2787	100,0

f1) Correlation between the EU funds granted to municipalities, own source revenues and the financial balance at national level

	Municipalities received EU funds		**All municipalities**	
	Own source revenues	Balance of financial revenues and expenses	Own source revenues	Balance of financial revenues and expenses
National	,757	,684	,753	,683

f2) Correlation between the EU funds granted to municipalities, own source revenues and the financial balance, in a breakdown according to large regions (NUTS1)

NUTS1	**Municipalities received EU funds**		**All municipalities**	
	Own source revenues	Balance of financial revenues and expenses	Own source revenues	Balance of financial revenues and expenses
Central Hungary	,484	,291	,449	,268
Transdanubia	,708	,672	,703	,670
Great Plain and North	,821	,774	,819	,769

f3) Correlation between the EU funds granted to municipalities, own source revenues and the financial balance, in a breakdown according to regions (NUTS2)

NUTS2	**Municipalities received EU funds**		**All municipalities**	
	Own source revenues	Balance of financial revenues and expenses	Own source revenues	Balance of financial revenues and expenses
Central Hungary	,484	,291	,449	,268
Central Transdanubia	,595	,439	,579	,419
Western Hungary	,865	,801	,873	,820
Southern Transdanubia	,895	,872	,899	,879
Northern Hungary	,894	,807	,905	,807
Northern Great Plain	,940	,920	,942	,921
Southern Great Plain	,724	,649	,713	,632

f4) Correlation between the EU funds granted to municipalities, own source revenues and the financial balance, in a breakdown according to counties (NUTS3)

County	Municipalities received EU funds		All municipalities	
	Own source revenues	Balance of financial revenues and expenses	Own source revenues	Balance of financial revenues and expenses
Baranya	,964	,949	,960	,945
Bács-Kiskun	,906	,876	,903	,881
Békés	,803	,808	,819	,823
Borsod-Abaúj-Zemplén	,949	,948	,933	,947
Csongrád	,829	,665	,833	,681
Fejér	,488	,351	,497	,359
Győr-Moson-Sopron	,978	,824	,974	,828
Hajdú-Bihar	,984	,948	,982	,947
Heves	,905	,709	,902	,705
Komárom-Esztergom	,898	,752	,892	,760
Nógrád	,840	,830	,849	,733
Pest	,447	,266	,484	,291
Somogy	,822	,904	,816	,891
Szabolcs-Szatmár-Bereg	,949	,949	,945	,947
Jász-Nagykun-Szolnok	,907	,865	,908	,867
Tolna	,657	,708	,661	,614
Vas	,958	,926	,932	,858
Veszprém	,918	,697	,914	,718
Zala	,970	,954	,941	,949

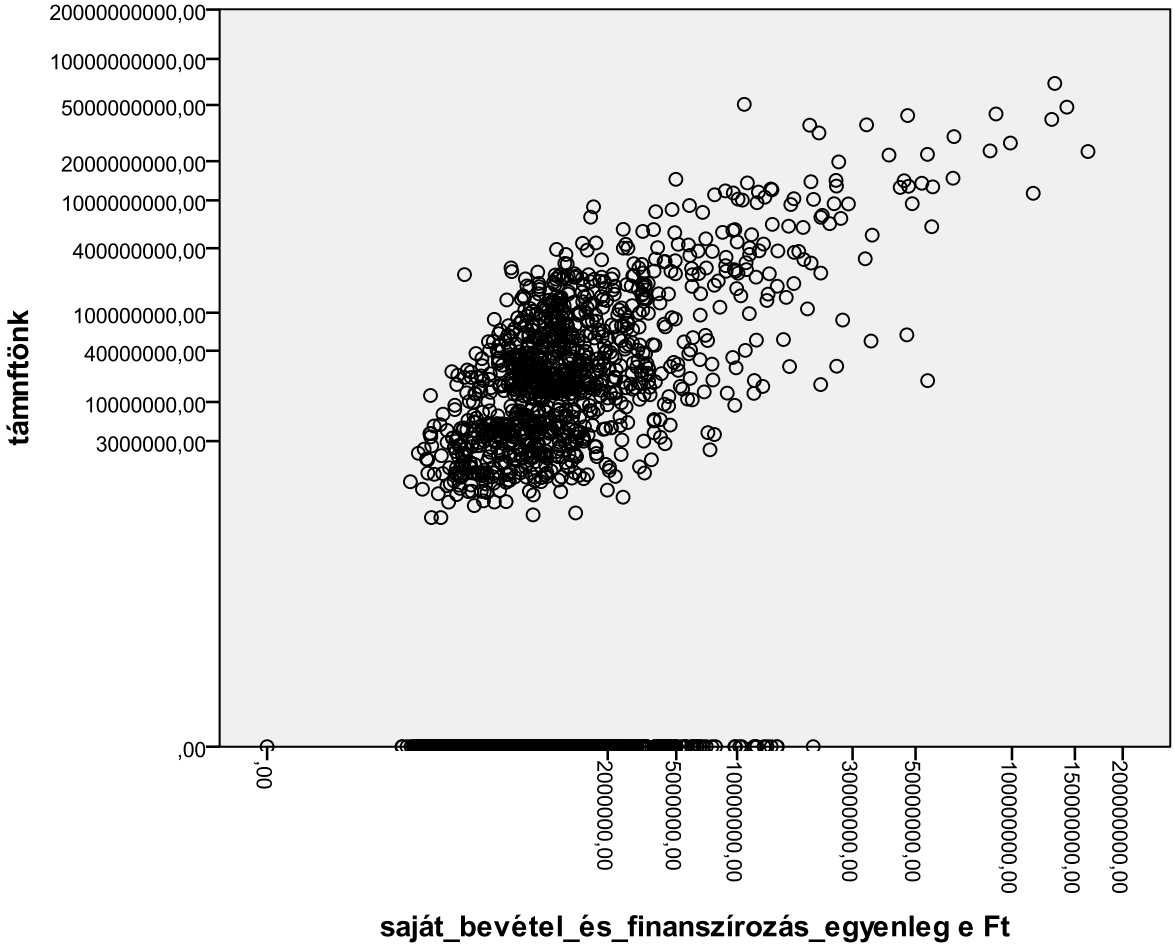
f5) Correlation between the EU funds granted to municipalities, own source revenues and the financial balance, in a breakdown according to the Author's own classification

Breakdown by the author	Municipalities received EU funds		All municipalities	
	Own source revenues	Balance of financial revenues and expenses	Own source revenues	Balance of financial revenues and expenses
West	,835	,860	,838	,867
Centre	,711	,596	,713	,600
East	,832	,765	,828	,758

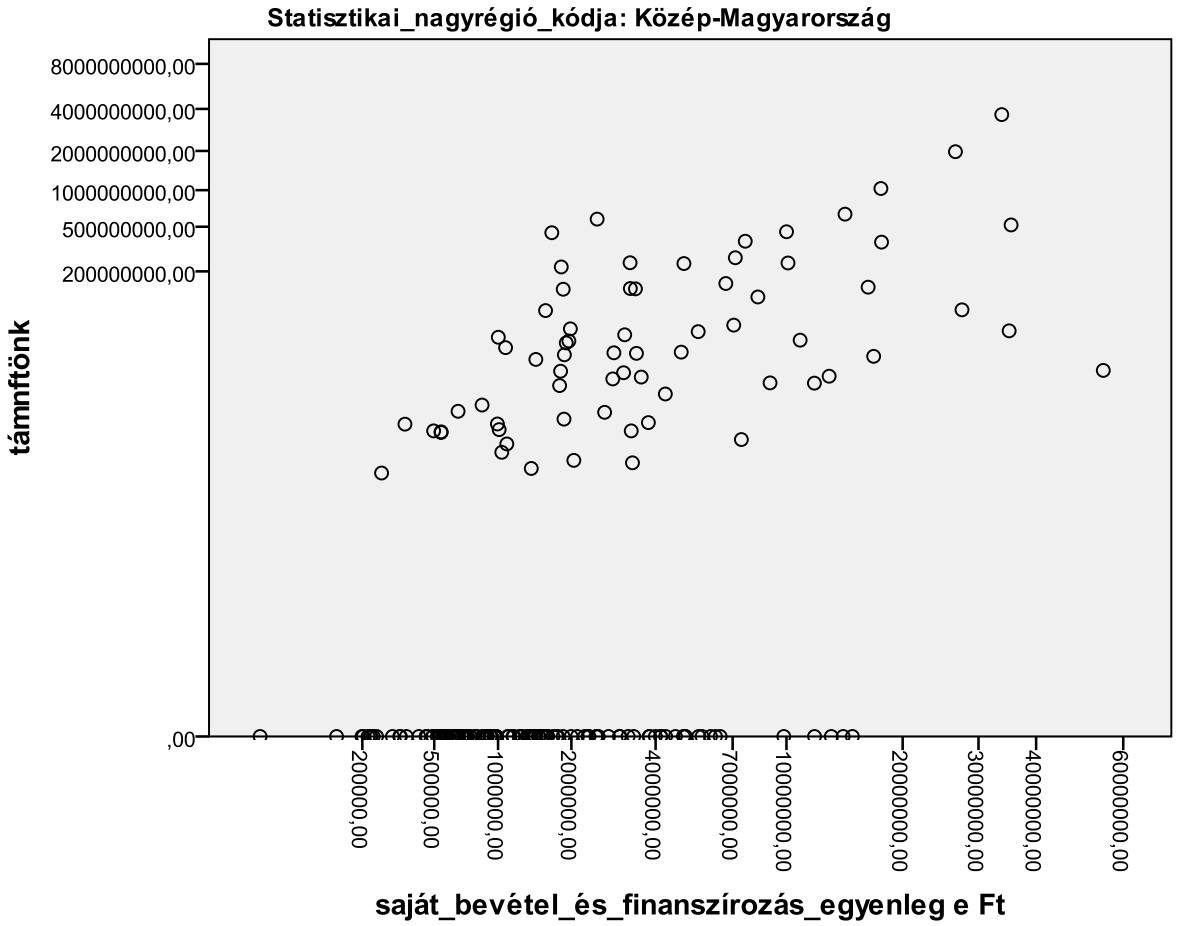
Vocabulary to Annex 12. g-j)

Identification in Annex	English term
Alföld és Észak	Great Plain and North
Dél-Alföld	Southern Great Plain
Dél-Dunántúl	Southern Transdanubia
Dunántúl	Transdanubia
Észak-Alföld	Northern Great Plain
Észak-Magyarország	Northern Hungary
Kelet	East
Közép	Centre
Közép-Dunántúl	Central Transdanubia
Közép-Magyarország	Central Hungary
Nyugat	West
Nyugat-Magyarország	Western Hungary
Régió_kódja	Code of the NUTS2 region
saját_bevétel_és_finanszírozás_egyenlege	balance of own source revenues and financing
Statisztikai_nagyrégió_kódja	Code of the NUTS1 large region
támnftönk	amount of EU funds received by a municipality in the programming period 2004-2006
Területi elhelyezkedés	Geographical location (breakdown by the author)

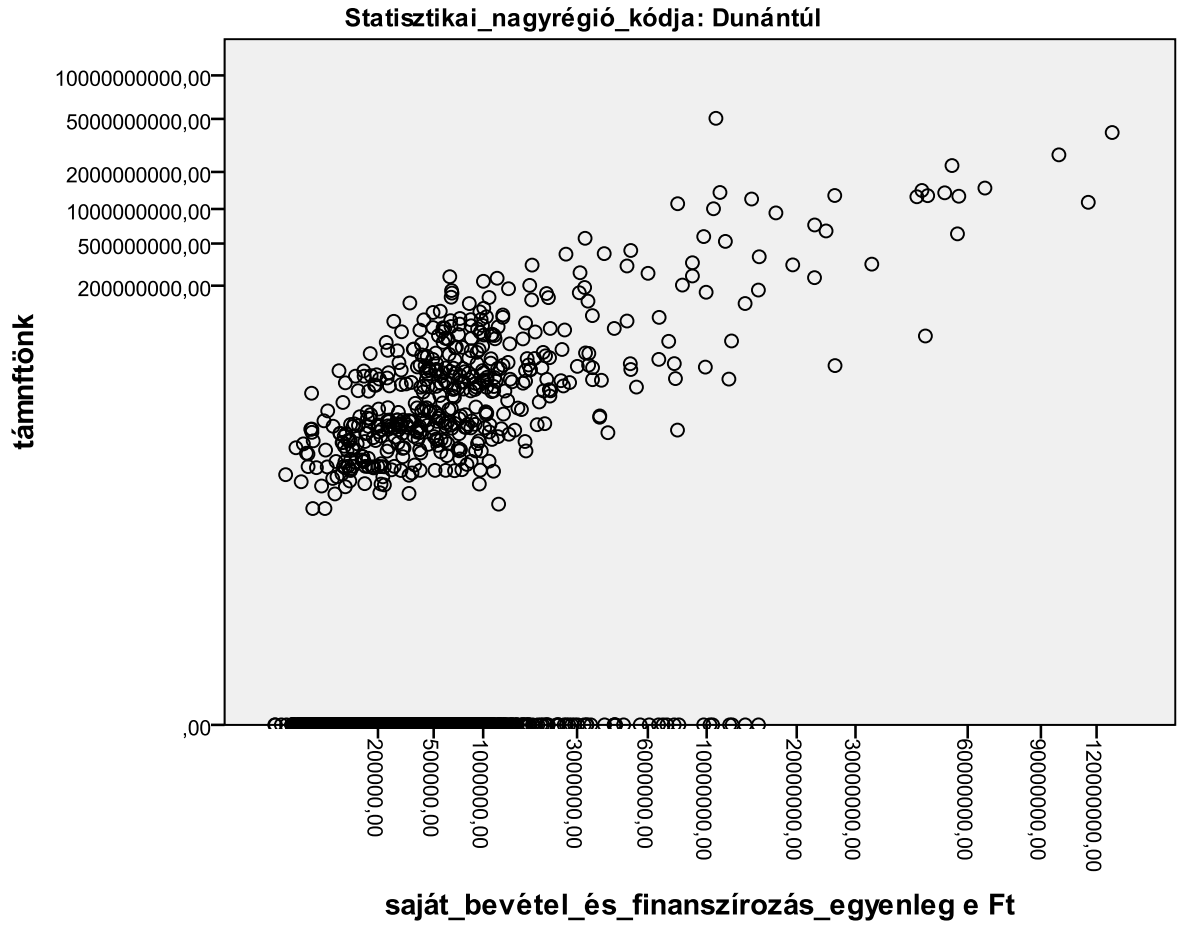
g) Relationship between the aggregated value of own source revenues and the financial balance and EU funds, at national level



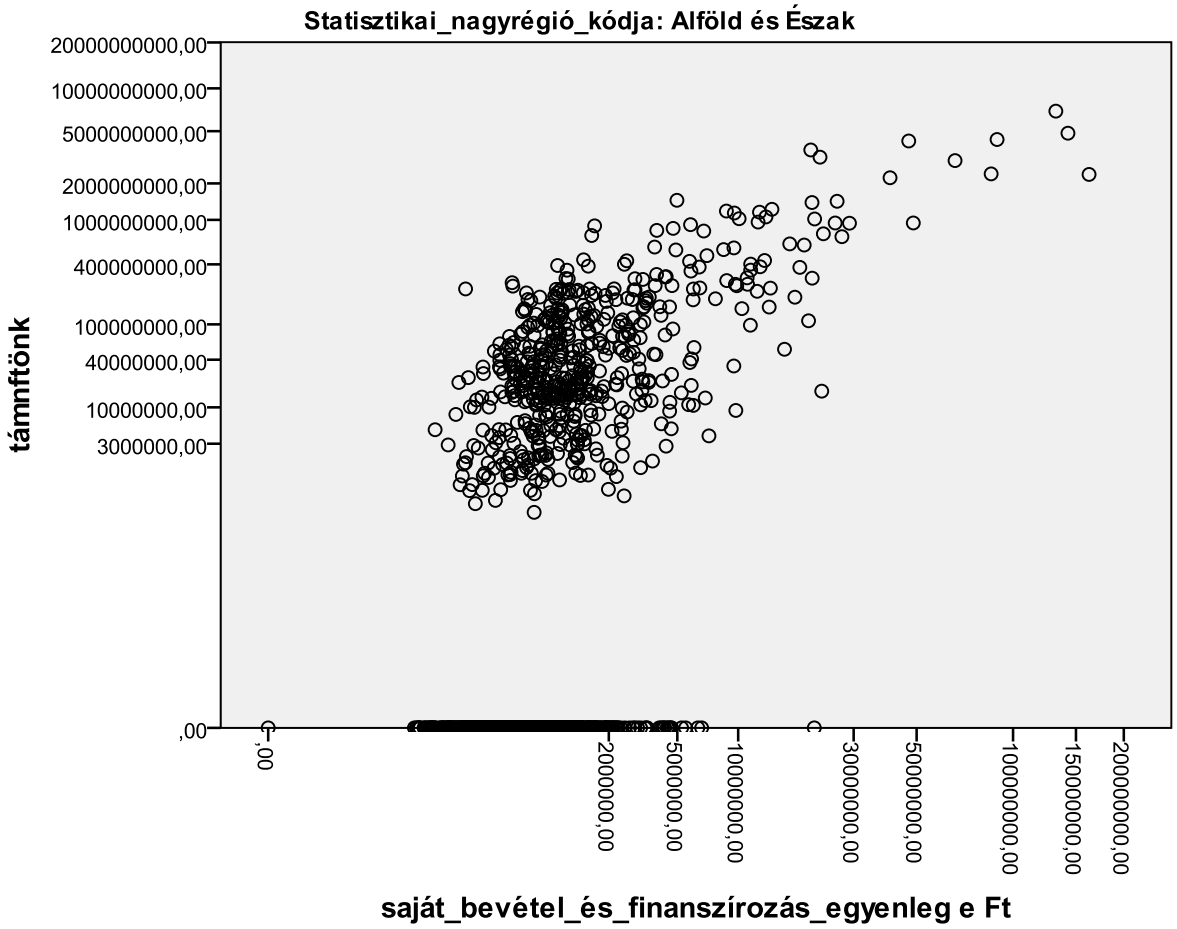
h1) Relationship between the aggregated value of own source revenues and the financial balance and EU funds, in a breakdown according to large regions (NUTS1)



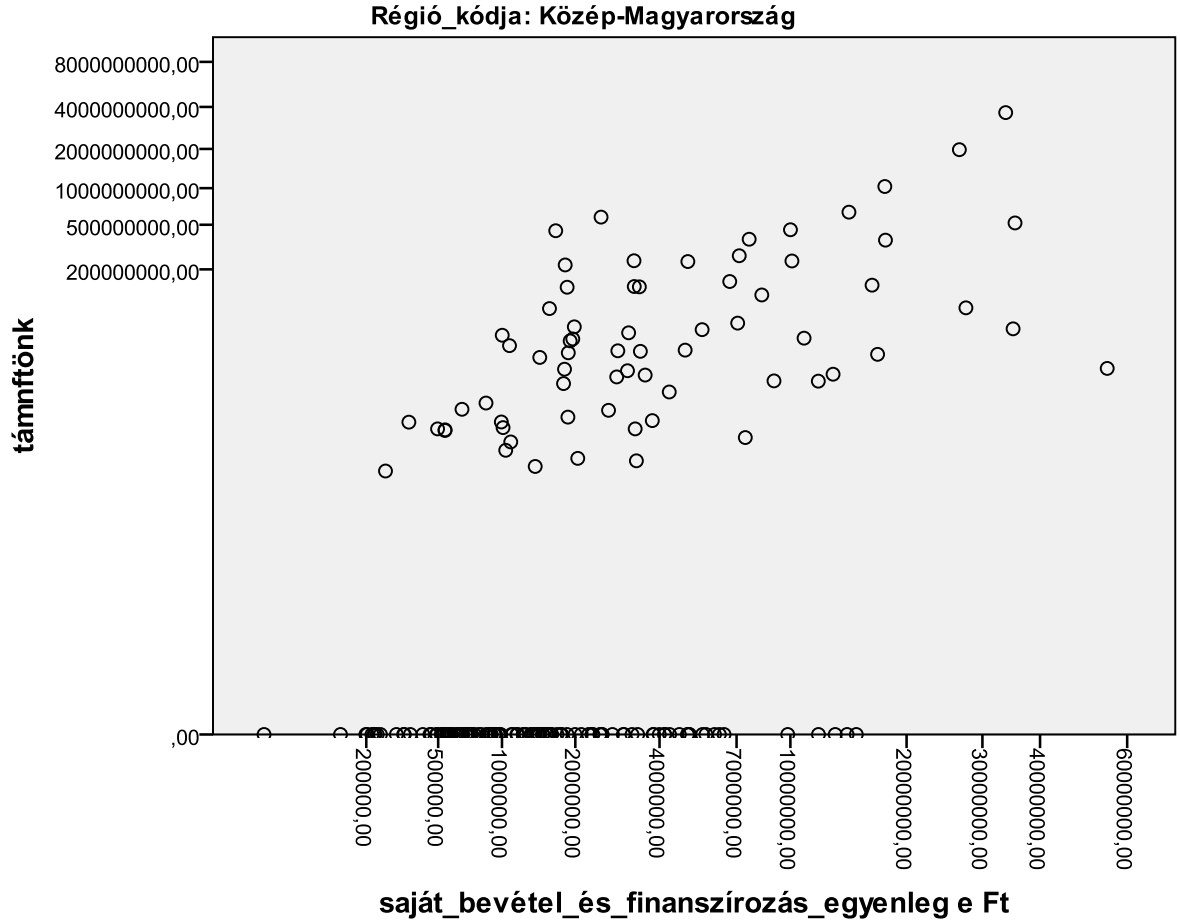
h2) Relationship between the aggregated value of own source revenues and the financial balance and EU funds, in a breakdown according to large regions (NUTS1)



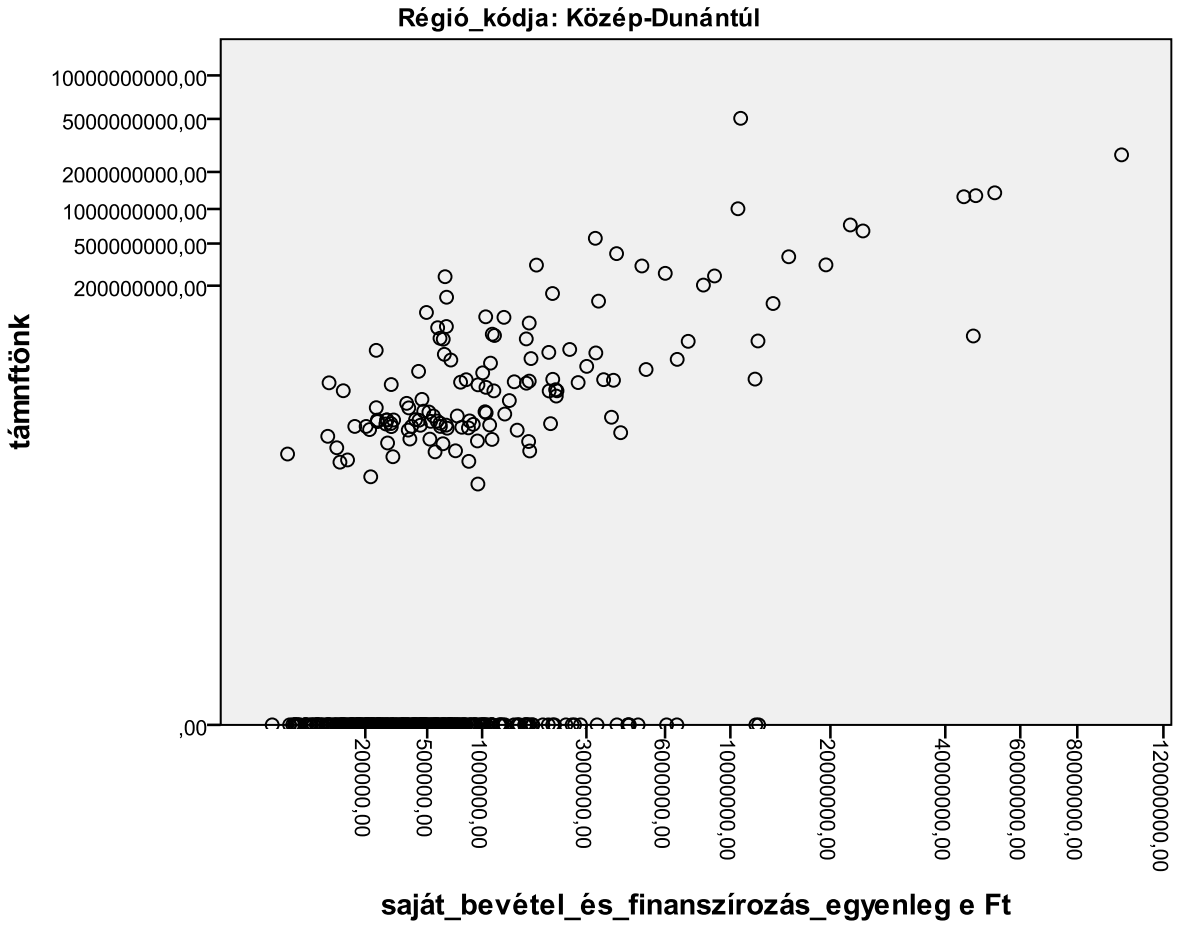
h3) Relationship between the aggregated value of own source revenues and the financial balance and EU funds, in a breakdown according to large regions (NUTS1)



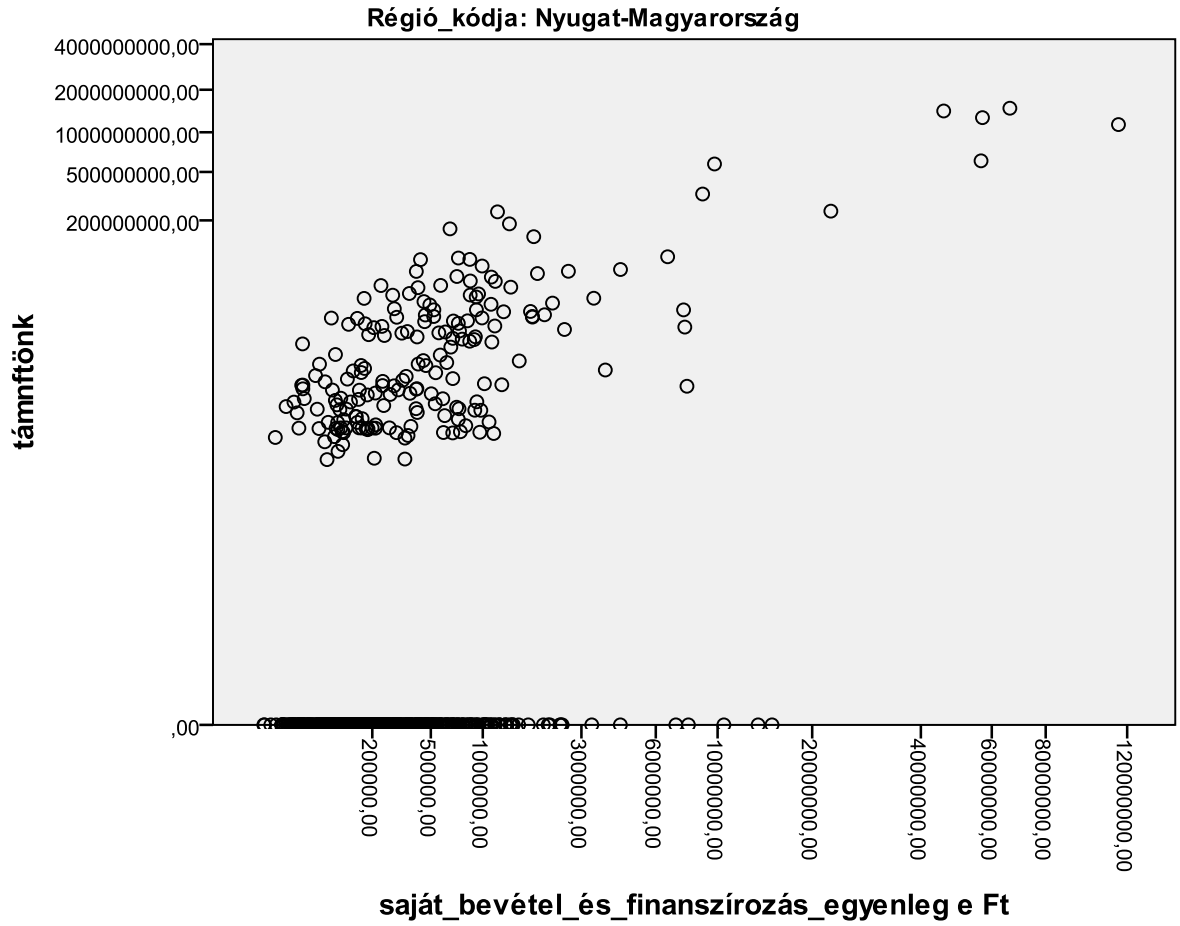
i1) Relationship between the aggregated value of own source revenues and the financial balance and EU funds, in a breakdown according to regions (NUTS2)



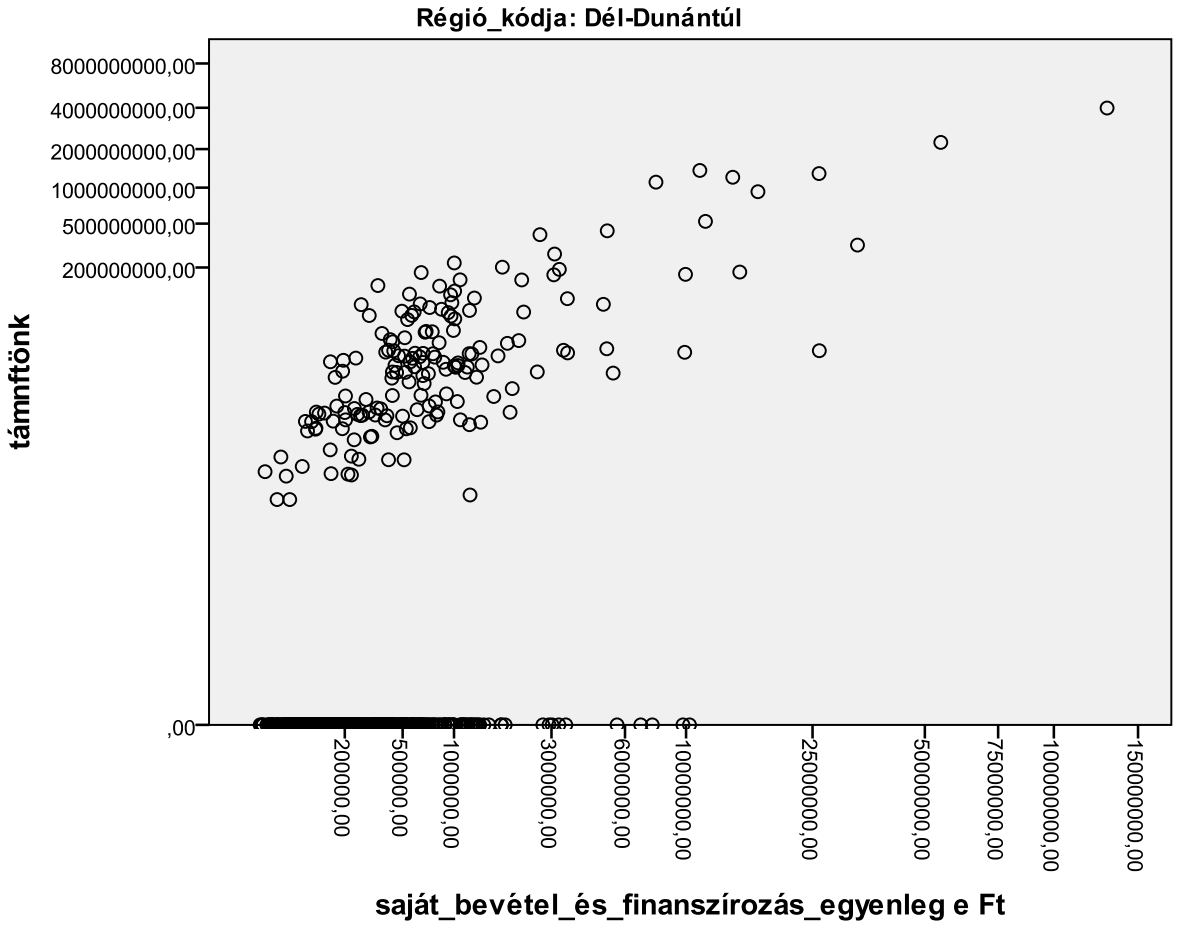
i2) Relationship between the aggregated value of own source revenues and the financial balance and EU funds, in a breakdown according to regions (NUTS2)



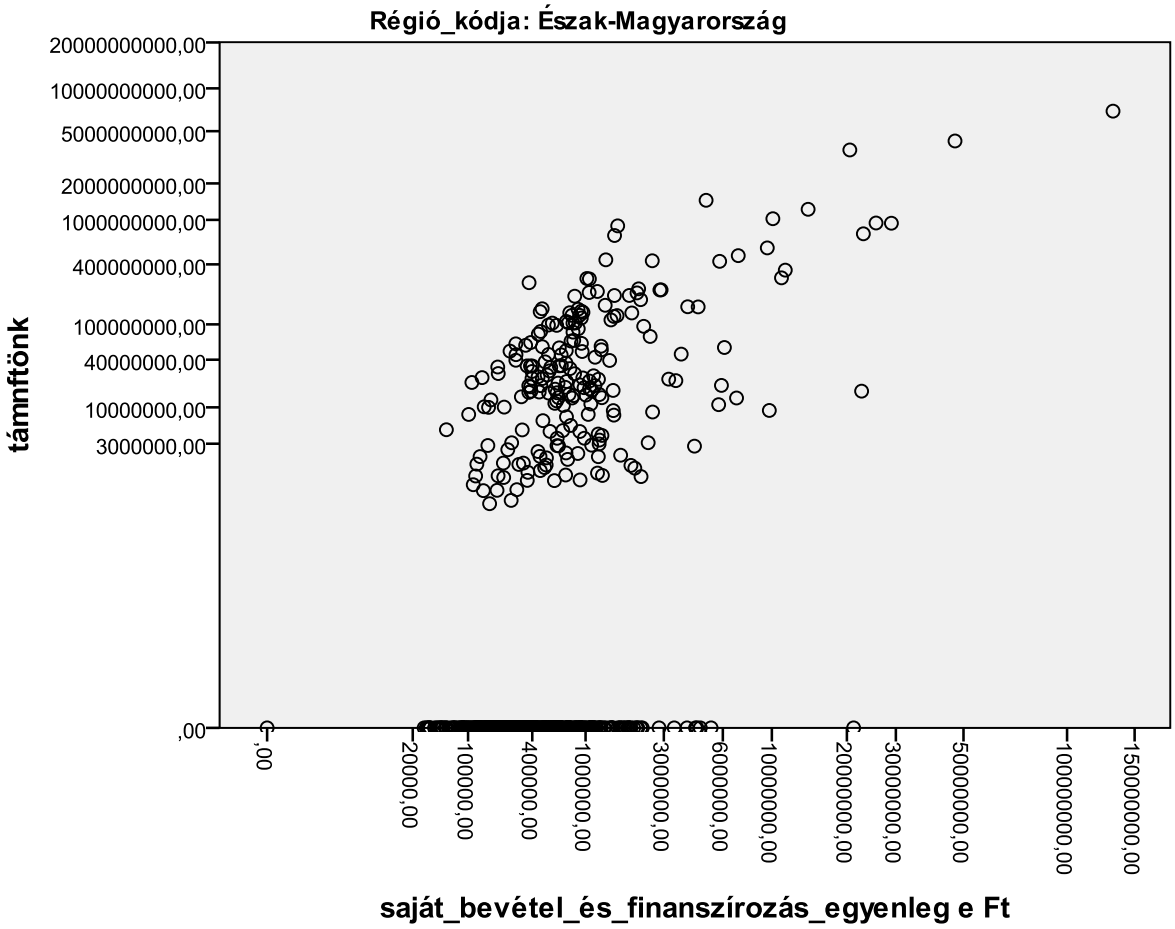
i3) Relationship between the aggregated value of own source revenues and the financial balance and EU funds, in a breakdown according to regions (NUTS2)



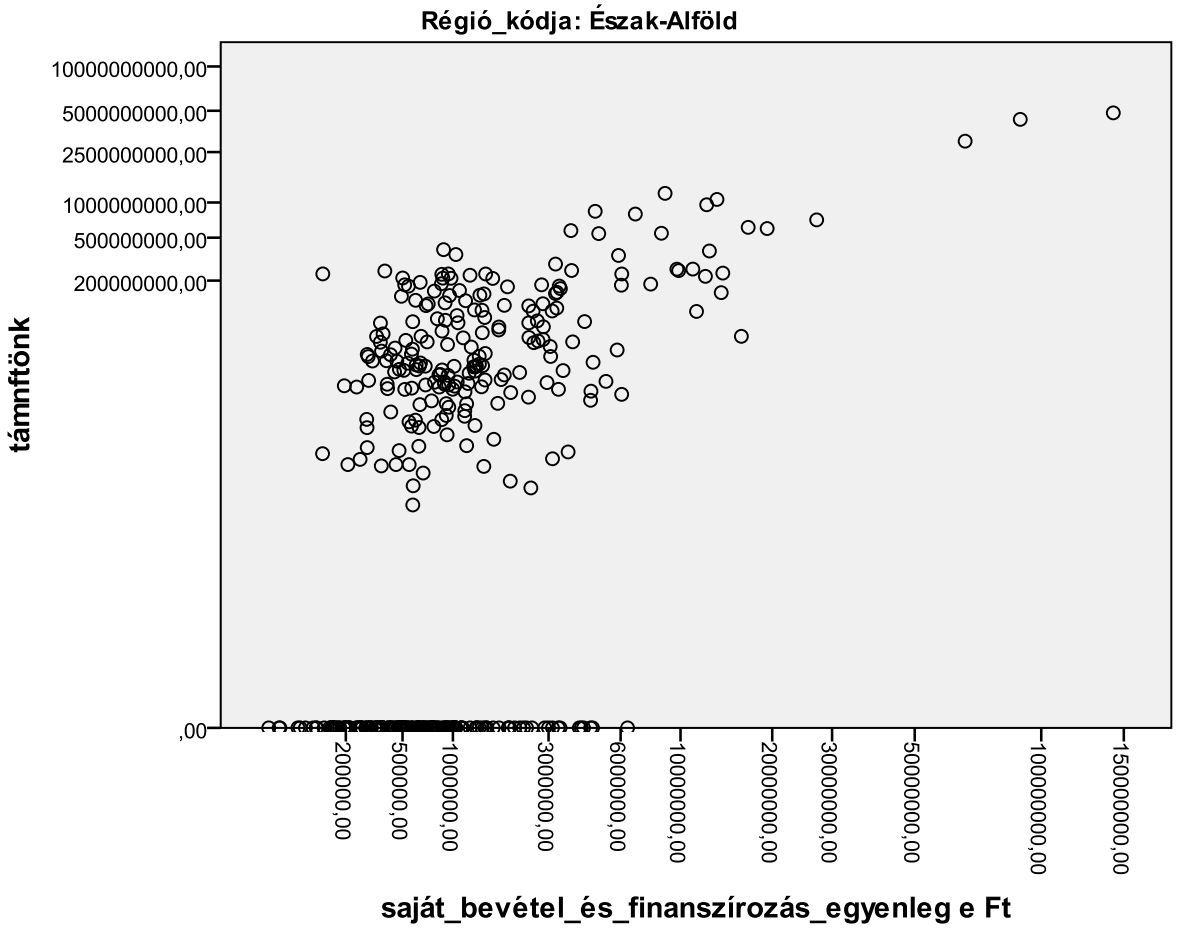
i4) Relationship between the aggregated value of own source revenues and the financial balance and EU funds, in a breakdown according to regions (NUTS2)



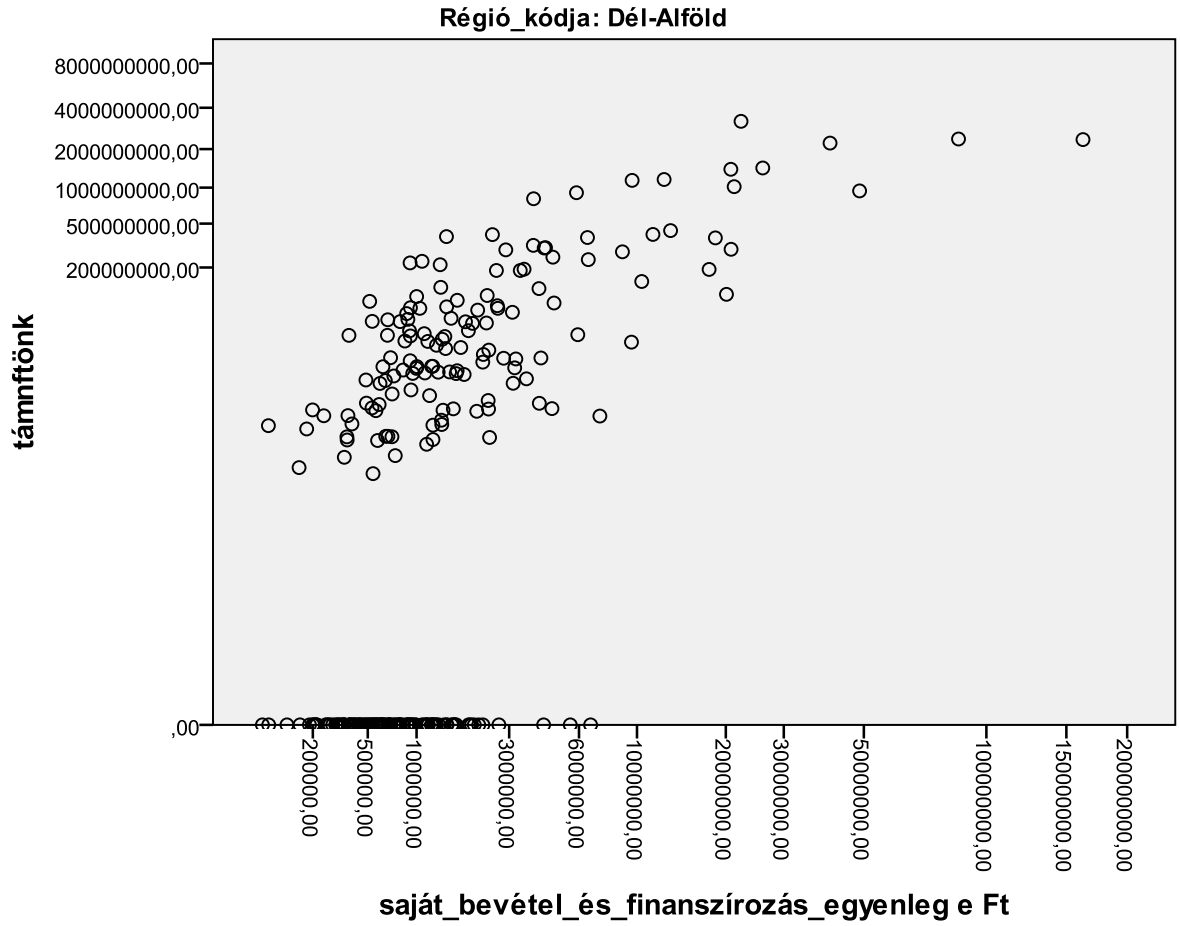
i5) Relationship between the aggregated value of own source revenues and the financial balance and EU funds, in a breakdown according to regions (NUTS2)



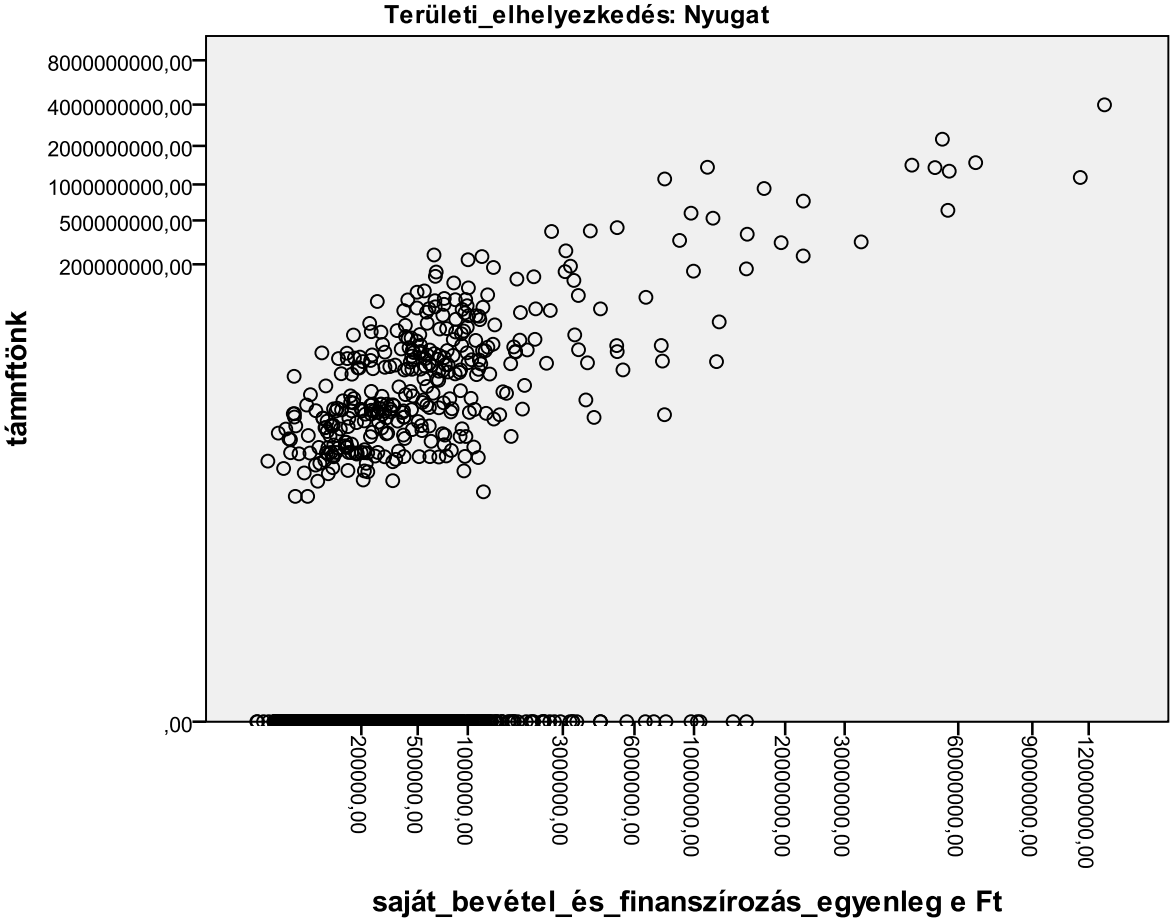
i6) Relationship between the aggregated value of own source revenues and the financial balance and EU funds, in a breakdown according to regions (NUTS2)



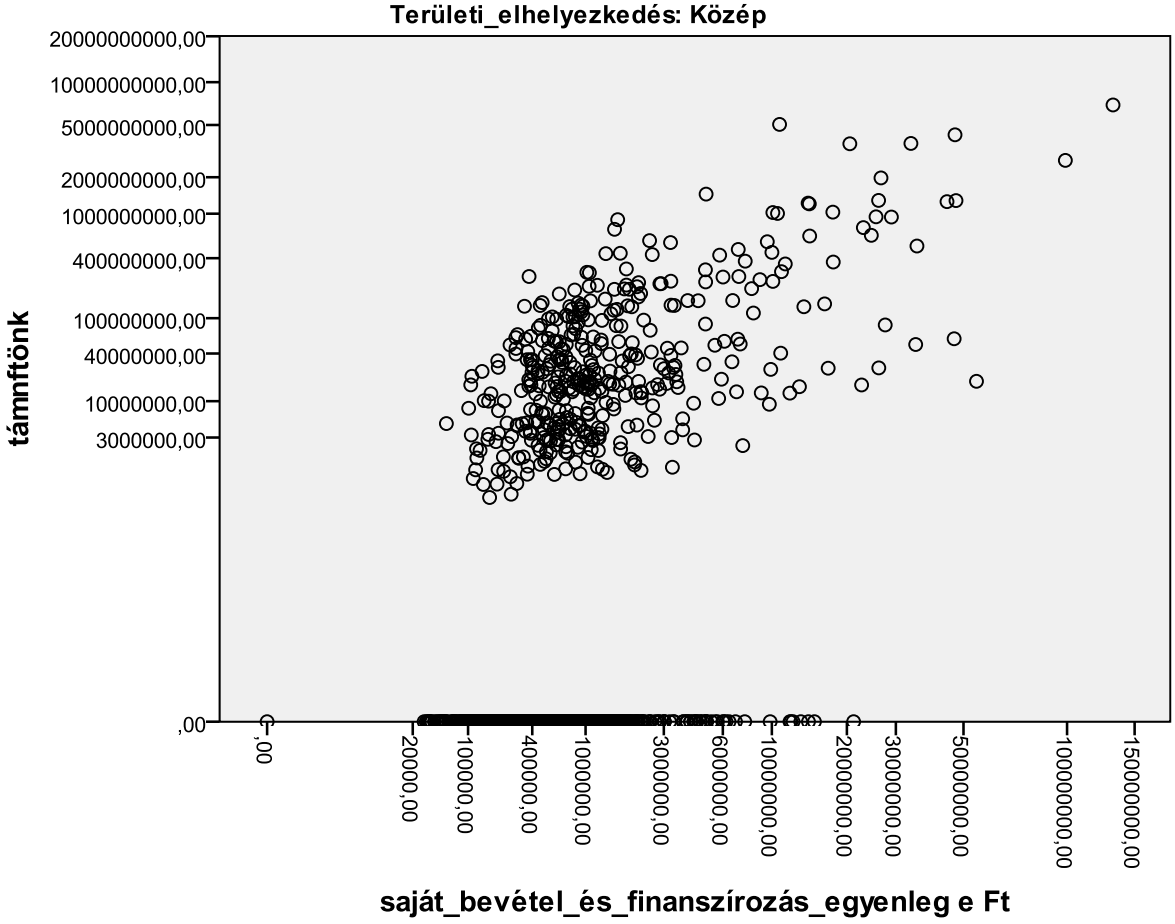
i7) Relationship between the aggregated value of own source revenues and the financial balance and EU funds, in a breakdown according to regions (NUTS2)



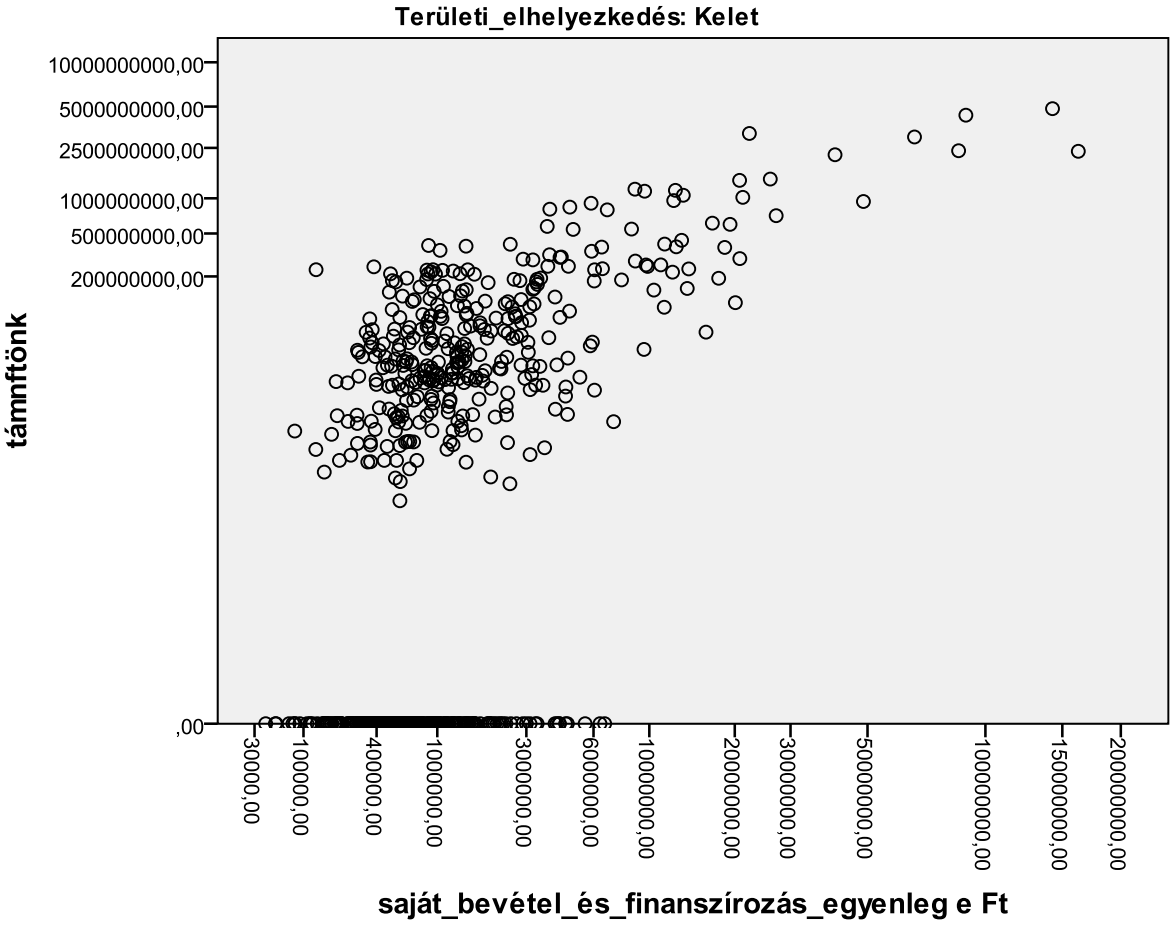
j1) Relationship between the aggregated value of own source revenues and the financial balance and EU funds, in a breakdown according to the Author's own territorial classification



j2) Relationship between the aggregated value of own source revenues and the financial balance and EU funds, in a breakdown according to the Author's own territorial classification



j3) Relationship between the aggregated value of own source revenues and the financial balance and EU funds, in a breakdown according to the Author's own territorial classification



k1) Correlation between the EU funds granted to a municipality and aggregated value of own source revenues and the financial balance, at national level

	Municipalities received EU funds	**All municipalities**
	Sum of own source and financial revenues	Sum of own source and financial revenues
National	0,764	0,761

k2) Correlation between the EU funds granted to a municipality and aggregated value of own source revenues and the financial balance, in a breakdown by large regions (NUTS1)

NUTS1	**Municipalities received EU funds**	**All municipalities**
	Sum of own source and financial revenues	Sum of own source and financial revenues
Central Hungary	0,486	0,454
Transdanubia	0,722	0,718
Great Plain and North	0,827	0,824

k3) Correlation between the EU funds granted to a municipality and aggregated value of own source revenues and the financial balance, in a breakdown by regions (NUTS2)

NUTS2	**Municipalities received EU funds**	**All municipalities**
	Sum of own source and financial revenues	Sum of own source and financial revenues
Central Hungary	0,486	0,454
Central Transdanubia	0,595	0,579
Western Hungary	0,869	0,878
Southern Transdanubia	0,902	0,907
Northern Hungary	0,890	0,899
Northern Great Plain	0,943	0,944
Southern Great Plain	0,731	0,72

k4) Correlation between the EU funds granted to a municipality and aggregated value of own source revenues and the financial balance, in a breakdown by counties (NUTS3)

NUTS3	Municipalities received EU funds	All municipalities
	Sum of own source and financial revenues	Sum of own source and financial revenues
Baranya	0,961	0,964
Bács-Kiskun	0,903	0,904
Békés	0,824	0,808
Borsod-Abaúj-Zemplén	0,938	0,950
Csongrád	0,840	0,835
Fejér	0,492	0,483
Győr-Moson-Sopron	0,976	0,979
Hajdú-Bihar	0,981	0,983
Heves	0,895	0,897
Komárom-Esztergom	0,909	0,914
Nógrád	0,852	0,843
Pest	0,486	0,452
Somogy	0,842	0,849
Szabolcs-Szatmár-Bereg	0,948	0,951
Jász-Nagykun-Szolnok	0,912	0,911
Tolna	0,667	0,668
Vas	0,928	0,958
Veszprém	0,913	0,915
Zala	0,944	0,972

k5) Correlation between the EU funds granted to a municipality and aggregated value of own source revenues and the financial balance, in a breakdown by the Author's own territorial classification

Breakdown by the author	Municipalities received EU funds	All municipalities
	Sum of own source and financial revenues	Sum of own source and financial revenues
West	0,860	0,864
Centre	0,714	0,716
East	0,836	0,833

Annex 13: Testing results for Hypothesis H3.1

All figures, charts and tables included in the Annex are based on data related only to those municipalities that received EU funds; as these are considered relevant for the purposes of testing the Hypothesis.

a) Definition of derived variables

(Vocabulary to Annex 13)

1. kül_hosszú_lejáratú_kölcsön: difference in long-term loans
2. kül_fejlesztési_célú_kötvénykibocsátás: difference of the issuance of bonds for development purposes
3. kül_működési_célú_kötvénykibocsátás: difference of the issuance of bonds for operating purposes
4. kül_beruházási_és_fejlesztési_hitelek: difference of investment and development bank loans
5. kül_működési_célú_hosszú_lejáratú_hitelek: difference of long-term bank loans for operating purposes
6. kül_egyéb_hosszú_lejáratú_kötelezettségek: difference of other long-term liabilities
7. kül_rövid_lejáratú_kölcsön: difference in short-term loans
8. kül_rövid_lejáratú_hitelek: difference of short-term bank loans
9. kül_szálló: difference of supplier liabilities from the purchase of goods and services
10. kül_egyéb_rövid_lejáratú_kötelezettségek: difference of other short-term liabilities
11. kül_törlesztés_hosszú_lejáratú_kölcsön: difference of short-term liabilities due next year from the service of long-term loans
12. kül_törlesztés_fejlesztési_célú_kötvénykibocsátás: difference of short-term liabilities due next year from the service of the issuance of bonds for development purposes
13. kül_törlesztés_működési_célú_kötvénykibocsátás: difference of short-term liabilities due next year from the service of the issuance of bonds for operating purposes
14. kül_törlesztés_beruházási_és_fejlesztési_hitel: difference of short-term liabilities due next year from the service of investment and development bank loans
15. kül_törlesztés_működési_célú_hosszú_lejáratú_hitel: difference of short-term liabilities due next year from the service of long-term bank loans for operating purposes
16. kül_törlesztés_egyéb_hosszú_kötelezettség: difference of short-term liabilities due next year from the service of other long-term liabilities
17. támnftönk: amount of EU funds received by a municipality in the programming period 2004-2006

Correlation study

b1) Study of correlation with the EU funds granted to a municipality, at national level, in a breakdown by NUTS1 large regions and by the Author's own territorial classification

Variable	National	NUTS1 Region			Breakdown by the author		
		Central Hungary	Transdanubia	Great Plain and North	West	Centre	East
difference in long-term loans	-0,09	0,06	-0,05	-0,41	-0,07	-0,01	-0,59
difference of the issuance of bonds for development purposes	0,53	0,39	0,51	0,56	0,66	0,49	0,56
difference of the issuance of bonds for operating purposes	0,10	0,08	0,51	0,01	0,72	0,04	0,01
difference of investment and development bank loans	0,54	-0,05	0,53	0,68	0,83	0,46	0,60
difference of long-term bank loans for operating purposes	0,18	0,20	0,57	0,17	0,19	0,24	0,23
difference of other long-term liabilities	0,14	-0,02	0,23	0,11	0,34	0,16	0,01
különbözet összes hosszú lejáratú kötelezettség	0,67	0,29	0,68	0,74	0,87	0,58	0,74
difference in short-term loans	-0,01	0,04	0,00	-0,05	0,00	0,01	-0,08
difference of short-term bank loans	0,37	0,01	0,07	0,53	0,16	0,45	0,46
difference of supplier liabilities from the purchase of goods and services	0,20	0,01	0,14	0,26	0,37	-0,05	0,46
difference of other short-term liabilities	0,29	0,08	0,09	0,43	0,15	0,09	0,58
különbözet váltó tartozások	0,00	-0,04	NA	0,00	NA	-0,01	0,00
különbözet munkavállalókkal szembeni kötelezettségek	0,14	NA	0,15	0,15	0,23	-0,01	0,22
különbözet költségvetéssel szembeni kötelezettségek	0,14	0,00	0,22	0,17	0,28	0,02	0,24
különbözet IPA feltöltés miatti kötelezettségek	0,62	0,14	0,57	0,79	0,71	0,48	0,81
különbözet helyi adó túlfizetés miatti kötelezettségek	0,55	0,11	0,58	0,67	0,74	0,33	0,73
különbözet szabálytalan kizetés miatti kötelezettségek	0,01	NA	0,10	0,00	0,14	NA	0,01
difference of short-term liabilities due next year from the service of long-term loans	0,07	-0,04	0,14	0,04	0,21	-0,02	0,13
difference of short-term liabilities due next year from the service of the issuance of bonds for development purposes	0,31	NA	0,17	0,37	0,18	0,07	0,52
difference of short-term liabilities due next year from the service of the issuance of bonds for operating purposes	0,02	-0,05	0,05	0,01	0,07	-0,01	0,02
difference of short-term liabilities due next year from the service of investment and development bank loans	0,22	-0,01	0,08	0,34	0,69	-0,12	0,54
difference of short-term liabilities due next year from the service of long-term bank loans for operating purposes	0,20	-0,04	0,53	0,14	0,20	0,24	0,21
difference of short-term liabilities due next year from the service of other long-term liabilities	0,15	0,16	0,15	0,16	0,09	0,10	0,23

b2) Study of correlation with the EU funds granted to a municipality, at the regional (NUTS2) level

Variable	NUTS2 Region						
	Central Hungary	**Central Transdanubia**	**Western Hungary**	**Southern Transdanubia**	**Northern Hungary**	**Northern Great Plain**	**Southern Great Plain**
difference in long-term loans	0,06	-0,06	-0,01	0,00	-0,02	-0,73	-0,24
difference of the issuance of bonds for development purposes	0,39	0,43	0,18	0,79	0,64	0,57	0,56
difference of the issuance of bonds for operating purposes	0,08	0,01	-0,01	0,85	0,06	0,01	0,01
difference of investment and development bank loans	-0,05	-0,01	0,88	0,80	0,82	0,65	0,52
difference of long-term bank loans for operating purposes	0,20	0,78	0,44	0,01	0,00	0,03	0,38
difference of other long-term liabilities	-0,02	0,24	0,37	0,39	0,21	0,08	0,01
különbözet összes hosszú lejáratú kötelezettség	0,29	0,45	0,84	0,89	0,76	0,83	0,64
difference in short-term loans	0,04	-0,03	0,02	-0,05	-0,01	0,00	-0,12
difference of short-term bank loans	0,01	0,13	0,20	-0,12	0,81	0,54	0,45
difference of supplier liabilities from the purchase of goods and services	0,01	0,02	0,01	0,55	-0,22	0,67	0,11
difference of other short-term liabilities	0,08	0,01	-0,09	0,81	0,18	0,72	0,56
különbözet váltó tartozások	-0,04	NA	NA	NA	NA	0,00	NA
különbözet munkavállalókkal szembeni kötelezettségek	NA	0,02	0,49	NA	-0,02	-0,02	0,39
különbözet költségvetéssel szembeni kötelezettségek	0,00	0,31	0,45	0,25	0,37	0,19	0,38
különbözet IPA feltöltés miatti kötelezettségek	0,14	0,45	0,72	0,84	0,91	0,88	0,69
különbözet helyi adó túlfizetés miatti kötelezettségek	0,11	0,41	0,68	0,89	0,83	0,74	0,73
különbözet szabálytalan kizetés miatti kötelezettségek	NA	NA	NA	0,16	NA	0,01	NA
difference of short-term liabilities due next year from the service of long-term loans	-0,04	0,02	0,44	-0,02	-0,01	0,01	0,21
difference of short-term liabilities due next year from the service of the issuance of bonds for development purposes	NA	0,18	0,20	0,24	0,07	0,66	0,01
difference of short-term liabilities due next year from the service of the issuance of bonds for operating purposes	-0,05	0,01	NA	0,08	NA	0,01	0,03
difference of short-term liabilities due next year from the service of investment and development bank loans	-0,01	-0,24	0,84	0,67	-0,08	0,64	0,47
difference of short-term liabilities due next year from the service of long-term bank loans for operating purposes	-0,04	0,78	0,44	0,00	0,02	0,01	0,38
difference of short-term liabilities due next year from the service of other long-term liabilities	0,16	0,12	0,44	0,41	0,00	-0,09	0,38

b3) Study of correlation with the EU funds granted to a municipality, at the county level (NUTS3)

Variable	Baranya	Bács-Kiskun	Békés	Borsod-Abaúj-Zemplén	Csongrád	Fejér	Győr-Moson-Sopron	Hajdú-Bihar	Heves	Komárom-Esztergom	Nógrád	Pest	Somogy	Szabolcs-Szatmár-Bereg	Jász-Nagykun-Szolnok	Tolna	Vas	Veszprém	Zala
difference in long-term loans	-0,07	-0,02	0,17	0,02	-0,73	-0,01	NA	-0,96	-0,69	-0,11	-0,04	0,06	-0,04	0,02	-0,91	0,04	-0,01	-0,27	NA
difference of the issuance of bonds for development purposes	0,81	0,88	0,71	0,84	0,31	0,42	0,40	-0,50	-0,07	0,51	-0,04	0,39	0,90	0,93	0,87	0,57	-0,02	0,34	0,03
difference of the issuance of bonds for operating purposes	0,91	NA	-0,07	0,08	0,05	0,00	-0,04	0,01	NA	NA	0,04	0,08	0,73	0,00	0,01	0,71	NA	NA	NA
difference of investment and development bank loans	0,93	0,53	0,51	0,95	0,78	-0,43	0,97	0,96	0,71	0,86	0,32	-0,05	0,88	-0,32	0,76	0,09	0,91	0,77	0,93
difference of long-term bank loans for operating purposes	-0,04	0,77	NA	-0,01	-0,04	0,86	NA	NA	-0,02	NA	0,04	0,20	-0,03	0,08	-0,07	0,07	NA	NA	0,66
difference of other long-term liabilities	-0,12	-0,01	0,02	0,30	0,56	0,44	-0,11	0,04	0,09	0,57	-0,04	-0,02	0,83	0,24	0,04	0,28	0,20	-0,57	0,54
difference in short-term loans	0,04	-0,01	NA	0,01	-0,24	-0,04	NA	-0,04	NA	-0,07	-0,45	0,04	-0,14	0,00	0,02	-0,04	NA	NA	0,02
difference of short-term bank loans	0,12	0,48	-0,40	0,91	0,88	-0,18	0,46	-0,01	0,68	0,63	0,66	0,01	-0,13	0,92	0,34	-0,68	0,11	0,78	-0,19
difference of supplier liabilities from the purchase of goods and services	0,92	-0,09	-0,05	-0,21	0,25	0,00	0,45	0,71	-0,30	0,45	0,22	0,01	-0,07	0,87	0,67	0,16	-0,82	0,16	0,04
difference of other short-term liabilities	0,93	0,80	0,67	0,01	0,75	-0,38	-0,76	0,96	0,74	0,84	-0,05	0,08	0,86	0,39	0,64	0,24	0,87	0,22	0,76
difference of short-term liabilities due next year from the service of long-term loans	-0,04	-0,04	0,05	0,00	0,40	-0,06	NA	0,01	-0,05	-0,04	NA	-0,04	NA	NA	NA	NA	NA	0,15	0,66
difference of short-term liabilities due next year from the service of the issuance of bonds for development purposes	NA	0,05	-0,09	0,10	NA	NA	0,43	0,96	NA	0,56	NA	NA	0,49	NA	0,91	NA	NA	NA	NA
difference of short-term liabilities due next year from the service of the issuance of bonds for operating purposes	NA	NA	-0,07	NA	0,05	0,00	NA	NA	NA	NA	NA	-0,05	0,16	NA	0,02	NA	NA	NA	NA
difference of short-term liabilities due next year from the service of investment and development bank loans	0,92	0,28	0,53	-0,61	0,70	-0,44	0,96	0,95	0,59	0,69	0,17	-0,01	-0,22	0,06	0,42	-0,15	0,92	0,40	0,85
difference of short-term liabilities due next year from the service of long-term bank loans for operating purposes	-0,04	0,77	NA	0,09	-0,04	0,86	NA	-0,05	-0,05	NA	0,04	-0,05	-0,03	0,08	-0,07	0,07	NA	NA	0,66
difference of short-term liabilities due next year from the service of other long-term liabilities	0,15	0,03	-0,04	-0,01	0,73	0,05	-0,39	0,08	-0,07	0,57	0,53	0,16	0,79	0,87	-0,83	0,31	0,01	-0,22	0,66

Factor analysis

c1) Results of the principal component analysis with varimax rotation, national level

Variable	Factors					
	1	2	3	4	5	6
amount of EU funds received by a municipality in the programming period 2004-2006	0,24	0,39	0,21	0,52	0,37	-0,01
difference in long-term loans	0,04	-0,29	0,07	-0,15	0,23	-0,49
difference of the issuance of bonds for development purposes	0,04	0,08	0,24	0,83	0,20	-0,06
difference of the issuance of bonds for operating purposes	-0,11	0,13	-0,01	0,00	0,62	-0,14
difference of investment and development bank loans	0,37	0,62	0,05	0,14	0,33	0,00
difference of long-term bank loans for operating purposes	0,03	-0,01	0,95	0,09	-0,02	-0,03
difference of other long-term liabilities	0,19	-0,17	-0,07	0,06	0,60	0,34
difference in short-term loans	0,02	0,04	0,09	-0,47	0,27	-0,17
difference of short-term bank loans	0,71	0,02	-0,08	0,44	-0,09	-0,11
difference of supplier liabilities from the purchase of goods and services	-0,06	0,58	-0,10	0,38	-0,02	0,02
difference of other short-term liabilities	0,75	0,29	0,26	-0,02	0,10	0,16
difference of short-term liabilities due next year from the service of long-term loans	0,05	-0,04	0,12	-0,04	0,09	0,80
difference of short-term liabilities due next year from the service of the issuance of bonds for development purposes	0,06	0,84	0,02	-0,09	-0,01	0,06
difference of short-term liabilities due next year from the service of investment and development bank loans	0,65	0,50	0,04	-0,18	-0,08	0,05
difference of short-term liabilities due next year from the service of long-term bank loans for operating purposes	0,03	-0,01	0,95	0,05	-0,01	0,11
difference of short-term liabilities due next year from the service of other long-term liabilities	0,87	-0,12	-0,06	-0,01	0,06	0,01

Communalities		
	Initial	Extraction
amount of EU funds received by a municipality in the programming period 2004-2006	1,00	0,67
difference in long-term loans	1,00	0,40
difference of the issuance of bonds for development purposes	1,00	0,79
difference of the issuance of bonds for operating purposes	1,00	0,43
difference of investment and development bank loans	1,00	0,65
difference of long-term bank loans for operating purposes	1,00	0,91
difference of other long-term liabilities	1,00	0,55
difference in short-term loans	1,00	0,34
difference of short-term bank loans	1,00	0,73
difference of supplier liabilities from the purchase of goods and services	1,00	0,50
difference of other short-term liabilities	1,00	0,75
difference of short-term liabilities due next year from the service of long-term loans	1,00	0,67
difference of short-term liabilities due next year from the service of the issuance of bonds for development purposes	1,00	0,73
difference of short-term liabilities due next year from the service of investment and development bank loans	1,00	0,71
difference of short-term liabilities due next year from the service of long-term bank loans for operating purposes	1,00	0,92
difference of short-term liabilities due next year from the service of other long-term liabilities	1,00	0,79

c2) Results of the principal component analysis with varimax rotation, Baranya County

Variable	Factors				
	1	2	3	4	5
amount of EU funds received by a municipality in the programming period 2004-2006	0,97	-0,02	0,07	0,15	-0,05
difference in long-term loans	-0,01	0,03	-0,03	-0,12	0,84
difference of the issuance of bonds for development purposes	0,79	-0,02	0,44	0,22	0,04
difference of the issuance of bonds for operating purposes	0,97	-0,01	0,10	-0,20	0,02
difference of investment and development bank loans	0,99	-0,01	-0,08	-0,06	0,02
difference of long-term bank loans for operating purposes	-0,02	1,00	-0,02	-0,01	-0,01
difference of other long-term liabilities	-0,08	-0,02	0,79	-0,54	-0,02
difference in short-term loans	0,03	0,04	-0,04	-0,11	-0,56
difference of short-term bank loans	0,04	-0,02	0,96	-0,07	0,05
difference of supplier liabilities from the purchase of goods and services	0,90	0,00	0,11	0,35	-0,05
difference of other short-term liabilities	0,98	-0,01	-0,14	-0,04	-0,03
difference of short-term liabilities due next year from the service of long-term loans	-0,01	0,96	-0,01	-0,01	-0,01
difference of short-term liabilities due next year from the service of investment and development bank loans	0,97	-0,01	-0,19	-0,07	-0,07
difference of short-term liabilities due next year from the service of long-term bank loans for operating purposes	-0,02	0,97	-0,02	-0,01	-0,01
difference of short-term liabilities due next year from the service of other long-term liabilities	0,04	-0,04	-0,24	0,95	0,04

Communalities		
	Initial	Extraction
amount of EU funds received by a municipality in the programming period 2004-2006	1,00	0,97
difference in long-term loans	1,00	0,72
difference of the issuance of bonds for development purposes	1,00	0,87
difference of the issuance of bonds for operating purposes	1,00	0,99
difference of investment and development bank loans	1,00	0,99
difference of long-term bank loans for operating purposes	1,00	1,00
difference of other long-term liabilities	1,00	0,92
difference in short-term loans	1,00	0,33
difference of short-term bank loans	1,00	0,93
difference of supplier liabilities from the purchase of goods and services	1,00	0,95
difference of other short-term liabilities	1,00	0,98
difference of short-term liabilities due next year from the service of long-term loans	1,00	0,92
difference of short-term liabilities due next year from the service of investment and development bank loans	1,00	0,99
difference of short-term liabilities due next year from the service of long-term bank loans for operating purposes	1,00	0,95
difference of short-term liabilities due next year from the service of other long-term liabilities	1,00	0,96

c3) Results of the principal component analysis with varimax rotation, Bács-Kiskun County

Variable	Factors					
	1	2	3	4	5	6
amount of EU funds received by a municipality in the programming period 2004-2006	0,86	0,05	0,24	-0,07	-0,08	-0,15
difference in long-term loans	0,00	0,03	-0,07	0,82	0,10	-0,25
difference of the issuance of bonds for development purposes	0,92	-0,14	0,19	0,01	-0,17	-0,09
difference of investment and development bank loans	0,73	-0,44	0,22	0,01	0,20	0,19
difference of long-term bank loans for operating purposes	0,98	0,04	-0,11	0,04	0,00	0,04
difference of other long-term liabilities	-0,03	0,96	0,02	-0,01	0,03	0,01
difference in short-term loans	0,03	-0,04	-0,01	0,83	-0,11	0,12
difference of short-term bank loans	0,11	0,07	0,83	-0,10	-0,32	-0,16
difference of supplier liabilities from the purchase of goods and services	-0,13	0,08	0,05	0,08	0,90	0,03
difference of other short-term liabilities	0,98	0,08	-0,03	-0,04	0,13	0,00
difference of short-term liabilities due next year from the service of long-term loans	-0,01	0,06	-0,03	-0,07	-0,05	0,90
difference of short-term liabilities due next year from the service of the issuance of bonds for development purposes	0,03	-0,03	0,88	0,02	0,21	0,10
difference of short-term liabilities due next year from the service of investment and development bank loans	0,31	-0,03	-0,17	-0,35	0,56	-0,20
difference of short-term liabilities due next year from the service of long-term bank loans for operating purposes	0,98	0,04	-0,11	0,04	0,01	0,04
difference of short-term liabilities due next year from the service of other long-term liabilities	0,03	0,95	0,02	0,00	0,05	0,07

Communalities		
	Initial	Extraction
amount of EU funds received by a municipality in the programming period 2004-2006	1,00	0,84
difference in long-term loans	1,00	0,76
difference of the issuance of bonds for development purposes	1,00	0,95
difference of investment and development bank loans	1,00	0,84
difference of long-term bank loans for operating purposes	1,00	0,97
difference of other long-term liabilities	1,00	0,92
difference in short-term loans	1,00	0,73
difference of short-term bank loans	1,00	0,85
difference of supplier liabilities from the purchase of goods and services	1,00	0,85
difference of other short-term liabilities	1,00	0,99
difference of short-term liabilities due next year from the service of long-term loans	1,00	0,83
difference of short-term liabilities due next year from the service of the issuance of bonds for development purposes	1,00	0,83
difference of short-term liabilities due next year from the service of investment and development bank loans	1,00	0,60
difference of short-term liabilities due next year from the service of long-term bank loans for operating purposes	1,00	0,97
difference of short-term liabilities due next year from the service of other long-term liabilities	1,00	0,91

c4) Results of the principal component analysis with varimax rotation, Békés County

Variable	Factors				
	1	2	3	4	5
amount of EU funds received by a municipality in the programming period 2004-2006	0,80	0,29	-0,06	-0,14	-0,11
difference in long-term loans	0,21	-0,04	-0,96	0,07	0,01
difference of the issuance of bonds for development purposes	0,89	0,23	-0,03	-0,07	0,00
difference of the issuance of bonds for operating purposes	-0,04	-0,01	-0,02	0,07	0,77
difference of investment and development bank loans	0,86	-0,10	0,01	0,02	0,15
difference of other long-term liabilities	-0,04	0,82	0,04	0,03	-0,01
difference of short-term bank loans	-0,23	-0,21	0,10	0,81	0,12
difference of supplier liabilities from the purchase of goods and services	-0,05	-0,22	0,21	-0,80	0,02
difference of other short-term liabilities	0,58	0,78	-0,03	-0,07	0,11
difference of short-term liabilities due next year from the service of long-term loans	0,15	-0,07	0,98	-0,04	0,00
difference of short-term liabilities due next year from the service of the issuance of bonds for development purposes	-0,05	0,02	-0,04	0,06	0,76
difference of short-term liabilities due next year from the service of investment and development bank loans	0,22	0,92	-0,07	0,02	0,04
difference of short-term liabilities due next year from the service of other long-term liabilities	-0,20	-0,05	-0,06	0,06	-0,29

Communalities		
	Initial	Extraction
amount of EU funds received by a municipality in the programming period 2004-2006	1,00	0,76
difference in long-term loans	1,00	0,97
difference of the issuance of bonds for development purposes	1,00	0,85
difference of the issuance of bonds for operating purposes	1,00	0,59
difference of investment and development bank loans	1,00	0,78
difference of other long-term liabilities	1,00	0,67
difference of short-term bank loans	1,00	0,78
difference of supplier liabilities from the purchase of goods and services	1,00	0,74
difference of other short-term liabilities	1,00	0,96
difference of short-term liabilities due next year from the service of long-term loans	1,00	0,99
difference of short-term liabilities due next year from the service of the issuance of bonds for development purposes	1,00	0,59
difference of short-term liabilities due next year from the service of investment and development bank loans	1,00	0,90
difference of short-term liabilities due next year from the service of other long-term liabilities	1,00	0,14

c5) Results of the principal component analysis with varimax rotation, Borsod-Abaúj-Zemplén County

Variable	Factors					
	1	2	3	4	5	6
amount of EU funds received by a municipality in the programming period 2004-2006	0,96	0,08	-0,02	0,01	0,07	0,03
difference in long-term loans	0,00	0,00	0,01	0,95	0,00	0,01
difference of the issuance of bonds for development purposes	0,88	-0,01	0,19	-0,06	0,18	-0,02
difference of the issuance of bonds for operating purposes	0,07	-0,01	0,94	-0,03	0,03	-0,04
difference of investment and development bank loans	0,97	-0,01	-0,04	0,00	0,13	0,02
difference of long-term bank loans for operating purposes	-0,02	0,01	-0,03	-0,01	0,02	-0,34
difference of other long-term liabilities	0,27	-0,04	-0,09	0,01	0,64	0,00
difference in short-term loans	-0,02	0,00	0,01	-0,02	0,04	0,94
difference of short-term bank loans	0,94	-0,02	-0,08	0,02	0,09	0,07
difference of supplier liabilities from the purchase of goods and services	-0,20	-0,03	0,89	0,10	0,04	0,16
difference of other short-term liabilities	0,10	0,25	0,26	-0,03	0,45	0,02
difference of short-term liabilities due next year from the service of long-term loans	-0,01	-0,01	0,04	0,95	0,00	0,00
difference of short-term liabilities due next year from the service of the issuance of bonds for development purposes	0,01	0,97	-0,05	0,00	0,02	-0,01
difference of short-term liabilities due next year from the service of investment and development bank loans	-0,75	0,00	0,25	-0,03	0,35	0,11
difference of short-term liabilities due next year from the service of long-term bank loans for operating purposes	0,00	0,96	0,01	0,00	0,02	-0,01
difference of short-term liabilities due next year from the service of other long-term liabilities	-0,10	-0,03	0,02	0,01	0,76	-0,03

Communalities		
	Initial	Extraction
amount of EU funds received by a municipality in the programming period 2004-2006	1,00	0,93
difference in long-term loans	1,00	0,91
difference of the issuance of bonds for development purposes	1,00	0,85
difference of the issuance of bonds for operating purposes	1,00	0,89
difference of investment and development bank loans	1,00	0,96
difference of long-term bank loans for operating purposes	1,00	0,12
difference of other long-term liabilities	1,00	0,49
difference in short-term loans	1,00	0,88
difference of short-term bank loans	1,00	0,90
difference of supplier liabilities from the purchase of goods and services	1,00	0,86
difference of other short-term liabilities	1,00	0,34
difference of short-term liabilities due next year from the service of long-term loans	1,00	0,91
difference of short-term liabilities due next year from the service of the issuance of bonds for development purposes	1,00	0,94
difference of short-term liabilities due next year from the service of investment and development bank loans	1,00	0,75
difference of short-term liabilities due next year from the service of long-term bank loans for operating purposes	1,00	0,93
difference of short-term liabilities due next year from the service of other long-term liabilities	1,00	0,59

c6) Results of the principal component analysis with varimax rotation, Csongrád County

Variable	Factors			
	1	2	3	4
amount of EU funds received by a municipality in the programming period 2004-2006	0,84	0,24	-0,01	0,22
difference in long-term loans	-0,96	0,08	0,02	0,06
difference of the issuance of bonds for development purposes	0,04	0,96	-0,03	0,04
difference of the issuance of bonds for operating purposes	-0,05	0,00	-0,02	0,92
difference of investment and development bank loans	0,94	0,29	-0,04	-0,04
difference of long-term bank loans for operating purposes	-0,02	-0,02	1,00	-0,01
difference of other long-term liabilities	0,48	-0,08	0,00	0,30
difference in short-term loans	-0,04	-0,99	0,01	0,04
difference of short-term bank loans	0,96	0,14	-0,01	0,14
difference of supplier liabilities from the purchase of goods and services	0,03	0,99	-0,01	-0,01
difference of other short-term liabilities	0,98	0,07	-0,01	-0,14
difference of short-term liabilities due next year from the service of long-term loans	0,25	0,96	-0,01	-0,05
difference of short-term liabilities due next year from the service of investment and development bank loans	0,90	0,20	-0,01	-0,38
difference of short-term liabilities due next year from the service of long-term bank loans for operating purposes	-0,02	-0,02	1,00	-0,01
difference of short-term liabilities due next year from the service of other long-term liabilities	0,98	-0,07	-0,01	-0,06

Communalities		
	Initial	Extraction
amount of EU funds received by a municipality in the programming period 2004-2006	1,00	0,81
difference in long-term loans	1,00	0,93
difference of the issuance of bonds for development purposes	1,00	0,93
difference of the issuance of bonds for operating purposes	1,00	0,84
difference of investment and development bank loans	1,00	0,97
difference of long-term bank loans for operating purposes	1,00	1,00
difference of other long-term liabilities	1,00	0,32
difference in short-term loans	1,00	0,99
difference of short-term bank loans	1,00	0,96
difference of supplier liabilities from the purchase of goods and services	1,00	0,98
difference of other short-term liabilities	1,00	0,98
difference of short-term liabilities due next year from the service of long-term loans	1,00	0,99
difference of short-term liabilities due next year from the service of investment and development bank loans	1,00	0,99
difference of short-term liabilities due next year from the service of long-term bank loans for operating purposes	1,00	1,00
difference of short-term liabilities due next year from the service of other long-term liabilities	1,00	0,96

c7) Results of the principal component analysis with varimax rotation, Fejér County

Variable	Factors					
	1	2	3	4	5	6
amount of EU funds received by a municipality in the programming period 2004-2006	-0,41	0,90	-0,01	0,02	0,00	-0,02
difference in long-term loans	-0,06	-0,03	0,97	0,05	-0,01	0,02
difference of the issuance of bonds for development purposes	-0,79	0,11	-0,06	0,01	0,48	-0,09
difference of the issuance of bonds for operating purposes	0,07	-0,02	0,04	0,30	-0,19	-0,05
difference of investment and development bank loans	0,97	-0,05	0,06	-0,03	0,13	0,01
difference of long-term bank loans for operating purposes	0,06	0,99	0,05	-0,01	0,01	0,00
difference of other long-term liabilities	-0,97	0,03	-0,05	-0,04	0,01	-0,01
difference in short-term loans	0,02	-0,03	0,04	-0,12	-0,04	0,92
difference of short-term bank loans	0,48	-0,02	0,17	-0,14	0,79	-0,06
difference of supplier liabilities from the purchase of goods and services	-0,27	-0,14	-0,91	-0,02	-0,10	-0,01
difference of other short-term liabilities	0,86	-0,02	0,08	0,02	0,39	-0,05
difference of short-term liabilities due next year from the service of long-term loans	0,06	-0,06	0,10	-0,71	-0,31	-0,37
difference of short-term liabilities due next year from the service of investment and development bank loans	0,98	-0,04	0,05	0,03	0,10	-0,01
difference of short-term liabilities due next year from the service of long-term bank loans for operating purposes	0,06	0,99	0,05	-0,01	0,01	-0,01
difference of short-term liabilities due next year from the service of other long-term liabilities	-0,03	0,00	0,08	0,77	-0,09	-0,25

Communalities		
	Initial	Extraction
amount of EU funds received by a municipality in the programming period 2004-2006	1,00	0,97
difference in long-term loans	1,00	0,96
difference of the issuance of bonds for development purposes	1,00	0,88
difference of the issuance of bonds for operating purposes	1,00	0,13
difference of investment and development bank loans	1,00	0,97
difference of long-term bank loans for operating purposes	1,00	0,99
difference of other long-term liabilities	1,00	0,95
difference in short-term loans	1,00	0,86
difference of short-term bank loans	1,00	0,90
difference of supplier liabilities from the purchase of goods and services	1,00	0,94
difference of other short-term liabilities	1,00	0,90
difference of short-term liabilities due next year from the service of long-term loans	1,00	0,76
difference of short-term liabilities due next year from the service of investment and development bank loans	1,00	0,98
difference of short-term liabilities due next year from the service of long-term bank loans for operating purposes	1,00	1,00
difference of short-term liabilities due next year from the service of other long-term liabilities	1,00	0,67

c8) Results of the principal component analysis with varimax rotation, Győr-Moson-Sopron County

Variable	Factors		
	1	2	3
amount of EU funds received by a municipality in the programming period 2004-2006	0,29	0,94	-0,02
difference of the issuance of bonds for development purposes	0,93	0,15	0,29
difference of the issuance of bonds for operating purposes	-0,01	-0,02	1,00
difference of investment and development bank loans	0,41	0,90	-0,01
difference of other long-term liabilities	-0,29	-0,03	0,04
difference of short-term bank loans	0,97	0,18	-0,03
difference of supplier liabilities from the purchase of goods and services	0,89	0,19	-0,08
difference of other short-term liabilities	0,36	-0,93	0,02
difference of short-term liabilities due next year from the service of the issuance of bonds for development purposes	0,96	0,17	0,00
difference of short-term liabilities due next year from the service of investment and development bank loans	0,40	0,90	0,01
difference of short-term liabilities due next year from the service of other long-term liabilities	-0,86	-0,15	-0,01

Communalities		
	Initial	Extraction
amount of EU funds received by a municipality in the programming period 2004-2006	1,00	0,98
difference of the issuance of bonds for development purposes	1,00	0,96
difference of the issuance of bonds for operating purposes	1,00	0,99
difference of investment and development bank loans	1,00	0,99
difference of other long-term liabilities	1,00	0,09
difference of short-term bank loans	1,00	0,97
difference of supplier liabilities from the purchase of goods and services	1,00	0,84
difference of other short-term liabilities	1,00	0,99
difference of short-term liabilities due next year from the service of the issuance of bonds for development purposes	1,00	0,95
difference of short-term liabilities due next year from the service of investment and development bank loans	1,00	0,98
difference of short-term liabilities due next year from the service of other long-term liabilities	1,00	0,76

c9) Results of the principal component analysis with varimax rotation, Hajdú-Bihar County

Variable	Factors				
	1	2	3	4	5
amount of EU funds received by a municipality in the programming period 2004-2006	0,97	0,01	-0,06	0,10	0,02
difference in long-term loans	-0,99	0,05	-0,05	0,01	0,06
difference of the issuance of bonds for development purposes	-0,54	0,76	0,08	0,03	0,04
difference of the issuance of bonds for operating purposes	0,04	0,72	-0,18	-0,05	0,01
difference of investment and development bank loans	0,99	0,03	0,06	0,03	0,01
difference of other long-term liabilities	0,17	-0,14	0,49	-0,07	-0,13
difference in short-term loans	-0,02	-0,11	-0,20	-0,71	0,34
difference of short-term bank loans	-0,02	0,92	0,03	0,02	0,02
difference of supplier liabilities from the purchase of goods and services	0,81	-0,21	0,07	-0,08	-0,02
difference of other short-term liabilities	0,99	-0,06	0,06	0,02	0,01
difference of short-term liabilities due next year from the service of long-term loans	-0,01	-0,05	-0,06	0,01	-0,86
difference of short-term liabilities due next year from the service of the issuance of bonds for development purposes	1,00	-0,05	0,06	-0,01	0,00
difference of short-term liabilities due next year from the service of investment and development bank loans	0,99	-0,09	0,06	-0,02	-0,01
difference of short-term liabilities due next year from the service of long-term bank loans for operating purposes	-0,06	0,04	0,81	0,07	0,19
difference of short-term liabilities due next year from the service of other long-term liabilities	0,00	-0,14	-0,24	0,71	0,33

Communalities		
	Initial	Extraction
amount of EU funds received by a municipality in the programming period 2004-2006	1,00	0,95
difference in long-term loans	1,00	1,00
difference of the issuance of bonds for development purposes	1,00	0,88
difference of the issuance of bonds for operating purposes	1,00	0,56
difference of investment and development bank loans	1,00	0,98
difference of other long-term liabilities	1,00	0,30
difference in short-term loans	1,00	0,67
difference of short-term bank loans	1,00	0,85
difference of supplier liabilities from the purchase of goods and services	1,00	0,71
difference of other short-term liabilities	1,00	0,99
difference of short-term liabilities due next year from the service of long-term loans	1,00	0,75
difference of short-term liabilities due next year from the service of the issuance of bonds for development purposes	1,00	1,00
difference of short-term liabilities due next year from the service of investment and development bank loans	1,00	0,99
difference of short-term liabilities due next year from the service of long-term bank loans for operating purposes	1,00	0,70
difference of short-term liabilities due next year from the service of other long-term liabilities	1,00	0,68

c10) Results of the principal component analysis with varimax rotation, Heves County

Variable	Factors			
	1	2	3	4
amount of EU funds received by a municipality in the programming period 2004-2006	0,80	-0,08	0,00	-0,05
difference in long-term loans	-0,89	0,23	0,36	0,01
difference of the issuance of bonds for development purposes	-0,11	0,71	-0,06	-0,06
difference of investment and development bank loans	0,97	-0,13	0,01	0,01
difference of long-term bank loans for operating purposes	-0,01	-0,01	0,00	0,74
difference of other long-term liabilities	0,23	0,89	0,02	-0,02
difference of short-term bank loans	0,93	0,34	0,01	-0,01
difference of supplier liabilities from the purchase of goods and services	-0,42	0,45	0,04	0,09
difference of other short-term liabilities	0,91	0,36	0,05	-0,01
difference of short-term liabilities due next year from the service of long-term loans	-0,05	-0,03	1,00	-0,03
difference of short-term liabilities due next year from the service of investment and development bank loans	0,91	-0,02	0,02	0,02
difference of short-term liabilities due next year from the service of long-term bank loans for operating purposes	-0,02	-0,02	-0,02	0,75
difference of short-term liabilities due next year from the service of other long-term liabilities	0,07	0,94	0,03	0,00

Communalities		
	Initial	Extraction
amount of EU funds received by a municipality in the programming period 2004-2006	1,00	0,64
difference in long-term loans	1,00	0,99
difference of the issuance of bonds for development purposes	1,00	0,52
difference of investment and development bank loans	1,00	0,96
difference of long-term bank loans for operating purposes	1,00	0,55
difference of other long-term liabilities	1,00	0,85
difference of short-term bank loans	1,00	0,98
difference of supplier liabilities from the purchase of goods and services	1,00	0,39
difference of other short-term liabilities	1,00	0,95
difference of short-term liabilities due next year from the service of long-term loans	1,00	0,99
difference of short-term liabilities due next year from the service of investment and development bank loans	1,00	0,84
difference of short-term liabilities due next year from the service of long-term bank loans for operating purposes	1,00	0,56
difference of short-term liabilities due next year from the service of other long-term liabilities	1,00	0,89

c11) Results of the principal component analysis with varimax rotation, Komárom-Esztergom County

Variable	Factors			
	1	2	3	4
amount of EU funds received by a municipality in the programming period 2004-2006	0,54	0,70	-0,06	0,03
difference in long-term loans	0,02	-0,01	0,83	-0,06
difference of the issuance of bonds for development purposes	0,89	0,05	-0,02	0,38
difference of investment and development bank loans	0,51	0,85	-0,04	-0,08
difference of other long-term liabilities	-0,11	0,98	-0,01	-0,02
difference in short-term loans	-0,04	-0,05	-0,04	0,97
difference of short-term bank loans	0,97	0,08	-0,02	-0,02
difference of supplier liabilities from the purchase of goods and services	0,89	0,07	-0,01	-0,37
difference of other short-term liabilities	0,31	0,91	-0,03	-0,01
difference of short-term liabilities due next year from the service of long-term loans	-0,07	-0,05	0,82	0,02
difference of short-term liabilities due next year from the service of the issuance of bonds for development purposes	0,99	0,07	-0,02	0,00
difference of short-term liabilities due next year from the service of investment and development bank loans	0,80	0,52	-0,01	-0,12
difference of short-term liabilities due next year from the service of other long-term liabilities	-0,11	0,98	-0,01	-0,02

Communalities		
	Initial	Extraction
amount of EU funds received by a municipality in the programming period 2004-2006	1,00	0,79
difference in long-term loans	1,00	0,69
difference of the issuance of bonds for development purposes	1,00	0,94
difference of investment and development bank loans	1,00	0,98
difference of other long-term liabilities	1,00	0,98
difference in short-term loans	1,00	0,95
difference of short-term bank loans	1,00	0,95
difference of supplier liabilities from the purchase of goods and services	1,00	0,94
difference of other short-term liabilities	1,00	0,92
difference of short-term liabilities due next year from the service of long-term loans	1,00	0,68
difference of short-term liabilities due next year from the service of the issuance of bonds for development purposes	1,00	0,98
difference of short-term liabilities due next year from the service of investment and development bank loans	1,00	0,93
difference of short-term liabilities due next year from the service of other long-term liabilities	1,00	0,98

c12) Results of the principal component analysis with varimax rotation, Nógrád County

Variable	Factors			
	1	2	3	4
amount of EU funds received by a municipality in the programming period 2004-2006	0,34	0,10	-0,15	0,88
difference in long-term loans	0,03	0,04	0,32	-0,06
difference of the issuance of bonds for development purposes	-0,11	0,19	0,16	0,01
difference of the issuance of bonds for operating purposes	0,01	0,99	0,01	-0,06
difference of investment and development bank loans	0,82	-0,07	0,36	0,19
difference of long-term bank loans for operating purposes	0,01	0,99	0,01	-0,06
difference of other long-term liabilities	-0,41	-0,02	-0,85	0,00
difference in short-term loans	-0,81	-0,02	0,18	-0,22
difference of short-term bank loans	0,26	-0,47	0,13	0,77
difference of supplier liabilities from the purchase of goods and services	-0,17	-0,10	0,78	0,51
difference of other short-term liabilities	0,35	0,04	0,90	-0,04
difference of short-term liabilities due next year from the service of investment and development bank loans	0,87	0,00	0,46	-0,07
difference of short-term liabilities due next year from the service of long-term bank loans for operating purposes	0,01	0,99	0,01	-0,06
difference of short-term liabilities due next year from the service of other long-term liabilities	0,88	-0,08	0,19	0,25

Communalities		
	Initial	Extraction
amount of EU funds received by a municipality in the programming period 2004-2006	1,00	0,93
difference in long-term loans	1,00	0,11
difference of the issuance of bonds for development purposes	1,00	0,07
difference of the issuance of bonds for operating purposes	1,00	0,99
difference of investment and development bank loans	1,00	0,84
difference of long-term bank loans for operating purposes	1,00	0,99
difference of other long-term liabilities	1,00	0,90
difference in short-term loans	1,00	0,74
difference of short-term bank loans	1,00	0,90
difference of supplier liabilities from the purchase of goods and services	1,00	0,90
difference of other short-term liabilities	1,00	0,94
difference of short-term liabilities due next year from the service of investment and development bank loans	1,00	0,97
difference of short-term liabilities due next year from the service of long-term bank loans for operating purposes	1,00	0,99
difference of short-term liabilities due next year from the service of other long-term liabilities	1,00	0,88

c13) Results of the principal component analysis with varimax rotation, Pest County

Variable	Factors					
	1	2	3	4	5	6
amount of EU funds received by a municipality in the programming period 2004-2006	0,03	0,03	0,00	-0,01	0,76	0,32
difference in long-term loans	0,77	-0,03	0,04	-0,41	0,16	-0,18
difference of the issuance of bonds for development purposes	0,01	-0,27	0,62	0,20	0,52	0,05
difference of the issuance of bonds for operating purposes	0,24	0,04	-0,03	-0,02	-0,05	0,73
difference of investment and development bank loans	-0,87	0,02	0,05	0,26	-0,02	-0,01
difference of long-term bank loans for operating purposes	0,01	0,03	0,17	0,09	0,71	-0,21
difference of other long-term liabilities	-0,16	0,06	0,91	-0,16	-0,09	0,03
difference in short-term loans	0,06	0,99	-0,02	0,10	0,01	-0,01
difference of short-term bank loans	0,59	-0,11	0,24	0,53	-0,20	0,13
difference of supplier liabilities from the purchase of goods and services	0,76	0,19	-0,01	0,09	-0,01	0,14
difference of other short-term liabilities	-0,17	0,29	-0,07	0,89	0,11	0,08
difference of short-term liabilities due next year from the service of long-term loans	-0,05	-0,99	0,02	-0,10	0,00	0,00
difference of short-term liabilities due next year from the service of investment and development bank loans	-0,27	0,00	-0,31	0,66	0,16	-0,27
difference of short-term liabilities due next year from the service of long-term bank loans for operating purposes	0,11	0,04	0,00	0,00	-0,07	-0,54
difference of short-term liabilities due next year from the service of other long-term liabilities	0,20	-0,02	0,81	-0,09	0,28	-0,10

Communalities		
	Initial	Extraction
amount of EU funds received by a municipality in the programming period 2004-2006	1,00	0,68
difference in long-term loans	1,00	0,83
difference of the issuance of bonds for development purposes	1,00	0,77
difference of the issuance of bonds for operating purposes	1,00	0,60
difference of investment and development bank loans	1,00	0,83
difference of long-term bank loans for operating purposes	1,00	0,58
difference of other long-term liabilities	1,00	0,89
difference in short-term loans	1,00	0,99
difference of short-term bank loans	1,00	0,76
difference of supplier liabilities from the purchase of goods and services	1,00	0,64
difference of other short-term liabilities	1,00	0,92
difference of short-term liabilities due next year from the service of long-term loans	1,00	0,99
difference of short-term liabilities due next year from the service of investment and development bank loans	1,00	0,70
difference of short-term liabilities due next year from the service of long-term bank loans for operating purposes	1,00	0,31
difference of short-term liabilities due next year from the service of other long-term liabilities	1,00	0,80

c14) Results of the principal component analysis with varimax rotation, Somogy County

Variable	Factors				
	1	2	3	4	5
amount of EU funds received by a municipality in the programming period 2004-2006	0,93	-0,02	0,31	-0,08	-0,06
difference in long-term loans	0,02	0,02	-0,17	-0,07	0,54
difference of the issuance of bonds for development purposes	0,97	-0,01	0,01	0,07	-0,13
difference of the issuance of bonds for operating purposes	0,80	-0,02	0,08	0,49	0,15
difference of investment and development bank loans	0,98	-0,01	-0,04	-0,02	0,02
difference of long-term bank loans for operating purposes	-0,01	1,00	-0,01	0,00	0,02
difference of other long-term liabilities	0,97	-0,01	-0,20	0,03	-0,05
difference in short-term loans	-0,01	0,01	-0,63	-0,13	0,26
difference of short-term bank loans	-0,03	0,00	-0,12	0,96	0,04
difference of supplier liabilities from the purchase of goods and services	0,01	0,01	-0,09	0,19	0,76
difference of other short-term liabilities	0,84	0,02	0,34	-0,22	0,22
difference of short-term liabilities due next year from the service of the issuance of bonds for development purposes	0,15	0,00	0,76	-0,29	-0,26
difference of short-term liabilities due next year from the service of investment and development bank loans	-0,43	0,00	0,63	-0,29	0,44
difference of short-term liabilities due next year from the service of long-term bank loans for operating purposes	-0,01	1,00	-0,01	0,00	0,02
difference of short-term liabilities due next year from the service of other long-term liabilities	0,94	-0,01	-0,24	-0,01	-0,04

Communalities		
	Initial	Extraction
amount of EU funds received by a municipality in the programming period 2004-2006	1,00	0,96
difference in long-term loans	1,00	0,32
difference of the issuance of bonds for development purposes	1,00	0,96
difference of the issuance of bonds for operating purposes	1,00	0,92
difference of investment and development bank loans	1,00	0,97
difference of long-term bank loans for operating purposes	1,00	1,00
difference of other long-term liabilities	1,00	0,98
difference in short-term loans	1,00	0,48
difference of short-term bank loans	1,00	0,94
difference of supplier liabilities from the purchase of goods and services	1,00	0,62
difference of other short-term liabilities	1,00	0,92
difference of short-term liabilities due next year from the service of the issuance of bonds for development purposes	1,00	0,75
difference of short-term liabilities due next year from the service of investment and development bank loans	1,00	0,85
difference of short-term liabilities due next year from the service of long-term bank loans for operating purposes	1,00	1,00
difference of short-term liabilities due next year from the service of other long-term liabilities	1,00	0,95

c15) Results of the principal component analysis with varimax rotation, Szabolcs-Szatmár-Bereg County

Variable	Factors				
	1	2	3	4	5
amount of EU funds received by a municipality in the programming period 2004-2006	0,94	0,10	-0,01	0,14	0,01
difference in long-term loans	0,10	0,02	-0,09	-0,32	0,76
difference of the issuance of bonds for development purposes	0,95	0,04	0,03	0,16	-0,01
difference of the issuance of bonds for operating purposes	0,05	-0,02	-0,79	-0,10	0,02
difference of investment and development bank loans	-0,37	0,16	0,09	-0,57	0,06
difference of long-term bank loans for operating purposes	-0,03	0,98	-0,07	0,04	-0,01
difference of other long-term liabilities	0,17	0,10	-0,01	0,62	-0,05
difference in short-term loans	-0,12	-0,02	0,11	0,48	0,66
difference of short-term bank loans	0,95	0,07	0,02	0,17	0,00
difference of supplier liabilities from the purchase of goods and services	0,93	0,08	0,08	0,13	0,00
difference of other short-term liabilities	0,38	0,77	0,20	-0,09	0,02
difference of short-term liabilities due next year from the service of investment and development bank loans	0,15	-0,01	0,82	-0,16	0,01
difference of short-term liabilities due next year from the service of long-term bank loans for operating purposes	-0,03	0,97	-0,05	0,03	0,00
difference of short-term liabilities due next year from the service of other long-term liabilities	0,94	0,00	0,03	0,02	0,02

Communalities		
	Initial	Extraction
amount of EU funds received by a municipality in the programming period 2004-2006	1,00	0,91
difference in long-term loans	1,00	0,71
difference of the issuance of bonds for development purposes	1,00	0,94
difference of the issuance of bonds for operating purposes	1,00	0,63
difference of investment and development bank loans	1,00	0,50
difference of long-term bank loans for operating purposes	1,00	0,96
difference of other long-term liabilities	1,00	0,43
difference in short-term loans	1,00	0,69
difference of short-term bank loans	1,00	0,93
difference of supplier liabilities from the purchase of goods and services	1,00	0,89
difference of other short-term liabilities	1,00	0,78
difference of short-term liabilities due next year from the service of investment and development bank loans	1,00	0,72
difference of short-term liabilities due next year from the service of long-term bank loans for operating purposes	1,00	0,95
difference of short-term liabilities due next year from the service of other long-term liabilities	1,00	0,88

c16) Results of the principal component analysis with varimax rotation, Jász-Nagykun-Szolnok County

Variable	Factors			
	1	2	3	4
amount of EU funds received by a municipality in the programming period 2004-2006	0,94	-0,07	0,07	-0,05
difference in long-term loans	-0,97	0,13	-0,01	-0,01
difference of the issuance of bonds for development purposes	0,94	0,09	0,17	-0,02
difference of the issuance of bonds for operating purposes	0,03	0,87	0,04	-0,03
difference of investment and development bank loans	0,71	0,01	0,16	-0,10
difference of long-term bank loans for operating purposes	-0,03	0,01	0,10	0,80
difference of other long-term liabilities	-0,05	-0,62	0,04	-0,06
difference in short-term loans	0,00	0,08	0,92	0,01
difference of short-term bank loans	0,34	-0,85	-0,08	0,12
difference of supplier liabilities from the purchase of goods and services	0,65	-0,21	0,66	-0,18
difference of other short-term liabilities	0,78	0,34	-0,17	-0,04
difference of short-term liabilities due next year from the service of the issuance of bonds for development purposes	0,97	-0,13	0,01	0,01
difference of short-term liabilities due next year from the service of investment and development bank loans	0,54	0,45	-0,26	-0,06
difference of short-term liabilities due next year from the service of long-term bank loans for operating purposes	-0,04	-0,05	-0,15	0,81
difference of short-term liabilities due next year from the service of other long-term liabilities	-0,90	0,11	0,00	-0,04

Communalities		
	Initial	Extraction
amount of EU funds received by a municipality in the programming period 2004-2006	1,00	0,90
difference in long-term loans	1,00	0,96
difference of the issuance of bonds for development purposes	1,00	0,92
difference of the issuance of bonds for operating purposes	1,00	0,75
difference of investment and development bank loans	1,00	0,55
difference of long-term bank loans for operating purposes	1,00	0,64
difference of other long-term liabilities	1,00	0,39
difference in short-term loans	1,00	0,84
difference of short-term bank loans	1,00	0,85
difference of supplier liabilities from the purchase of goods and services	1,00	0,94
difference of other short-term liabilities	1,00	0,75
difference of short-term liabilities due next year from the service of the issuance of bonds for development purposes	1,00	0,96
difference of short-term liabilities due next year from the service of investment and development bank loans	1,00	0,57
difference of short-term liabilities due next year from the service of long-term bank loans for operating purposes	1,00	0,68
difference of short-term liabilities due next year from the service of other long-term liabilities	1,00	0,82

c17) Results of the principal component analysis with varimax rotation, Tolna County

Variable	Factors					
	1	2	3	4	5	6
amount of EU funds received by a municipality in the programming period 2004-2006	0,86	0,06	0,08	0,11	0,06	0,06
difference in long-term loans	0,07	0,07	0,11	-0,27	0,19	0,52
difference of the issuance of bonds for development purposes	0,55	0,69	-0,05	0,14	0,41	0,05
difference of the issuance of bonds for operating purposes	0,94	0,00	-0,04	0,18	0,02	0,07
difference of investment and development bank loans	0,06	-0,12	-0,08	-0,06	-0,38	0,69
difference of long-term bank loans for operating purposes	0,00	-0,01	0,99	0,04	-0,01	-0,02
difference of other long-term liabilities	0,17	0,11	0,06	0,91	0,03	0,01
difference in short-term loans	-0,08	0,01	-0,03	0,06	0,94	0,02
difference of short-term bank loans	-0,92	-0,01	0,06	-0,16	0,27	-0,08
difference of supplier liabilities from the purchase of goods and services	0,26	-0,95	0,01	-0,08	0,00	-0,04
difference of other short-term liabilities	0,22	0,94	0,01	0,08	-0,06	-0,05
difference of short-term liabilities due next year from the service of investment and development bank loans	-0,08	-0,06	0,10	-0,40	-0,13	-0,69
difference of short-term liabilities due next year from the service of long-term bank loans for operating purposes	0,00	-0,01	0,99	0,04	-0,01	-0,02
difference of short-term liabilities due next year from the service of other long-term liabilities	0,24	0,10	0,05	0,90	0,06	-0,04

Communalities		
	Initial	Extraction
amount of EU funds received by a municipality in the programming period 2004-2006	1,00	0,76
difference in long-term loans	1,00	0,40
difference of the issuance of bonds for development purposes	1,00	0,97
difference of the issuance of bonds for operating purposes	1,00	0,93
difference of investment and development bank loans	1,00	0,64
difference of long-term bank loans for operating purposes	1,00	0,99
difference of other long-term liabilities	1,00	0,88
difference in short-term loans	1,00	0,91
difference of short-term bank loans	1,00	0,94
difference of supplier liabilities from the purchase of goods and services	1,00	0,98
difference of other short-term liabilities	1,00	0,95
difference of short-term liabilities due next year from the service of investment and development bank loans	1,00	0,68
difference of short-term liabilities due next year from the service of long-term bank loans for operating purposes	1,00	0,99
difference of short-term liabilities due next year from the service of other long-term liabilities	1,00	0,89

c18) Results of the principal component analysis with varimax rotation, Vas County

Variable	Factors			
	1	2	3	4
amount of EU funds received by a municipality in the programming period 2004-2006	0,94	-0,01	0,19	-0,03
difference in long-term loans	0,01	0,01	0,01	1,00
difference of the issuance of bonds for development purposes	0,00	1,00	-0,05	0,01
difference of investment and development bank loans	0,99	-0,02	-0,02	0,03
difference of other long-term liabilities	0,04	-0,02	0,87	-0,02
difference of short-term bank loans	-0,02	0,01	0,86	0,03
difference of supplier liabilities from the purchase of goods and services	-0,91	-0,32	0,08	-0,04
difference of other short-term liabilities	0,96	-0,20	-0,04	0,04
difference of short-term liabilities due next year from the service of investment and development bank loans	0,99	-0,02	-0,01	-0,04
difference of short-term liabilities due next year from the service of other long-term liabilities	0,00	0,99	0,04	0,01

Communalities		
	Initial	Extraction
amount of EU funds received by a municipality in the programming period 2004-2006	1,00	0,92
difference in long-term loans	1,00	1,00
difference of the issuance of bonds for development purposes	1,00	0,99
difference of investment and development bank loans	1,00	0,99
difference of other long-term liabilities	1,00	0,76
difference of short-term bank loans	1,00	0,75
difference of supplier liabilities from the purchase of goods and services	1,00	0,93
difference of other short-term liabilities	1,00	0,97
difference of short-term liabilities due next year from the service of investment and development bank loans	1,00	0,99
difference of short-term liabilities due next year from the service of other long-term liabilities	1,00	0,99

c19) Results of the principal component analysis with varimax rotation, Veszprém County

Variable	Factors			
	1	2	3	4
amount of EU funds received by a municipality in the programming period 2004-2006	0,89	0,05	0,14	0,06
difference in long-term loans	-0,19	0,06	-0,97	-0,03
difference of the issuance of bonds for development purposes	0,10	-0,21	0,23	0,68
difference of investment and development bank loans	0,94	0,13	0,03	0,07
difference of other long-term liabilities	-0,76	0,57	-0,09	0,09
difference of short-term bank loans	0,92	-0,10	0,12	-0,14
difference of supplier liabilities from the purchase of goods and services	0,18	0,46	-0,02	0,84
difference of other short-term liabilities	0,21	0,96	0,12	-0,08
difference of short-term liabilities due next year from the service of long-term loans	0,04	-0,05	0,99	0,04
difference of short-term liabilities due next year from the service of investment and development bank loans	0,35	0,06	0,14	-0,82
difference of short-term liabilities due next year from the service of other long-term liabilities	-0,28	0,91	-0,29	0,05

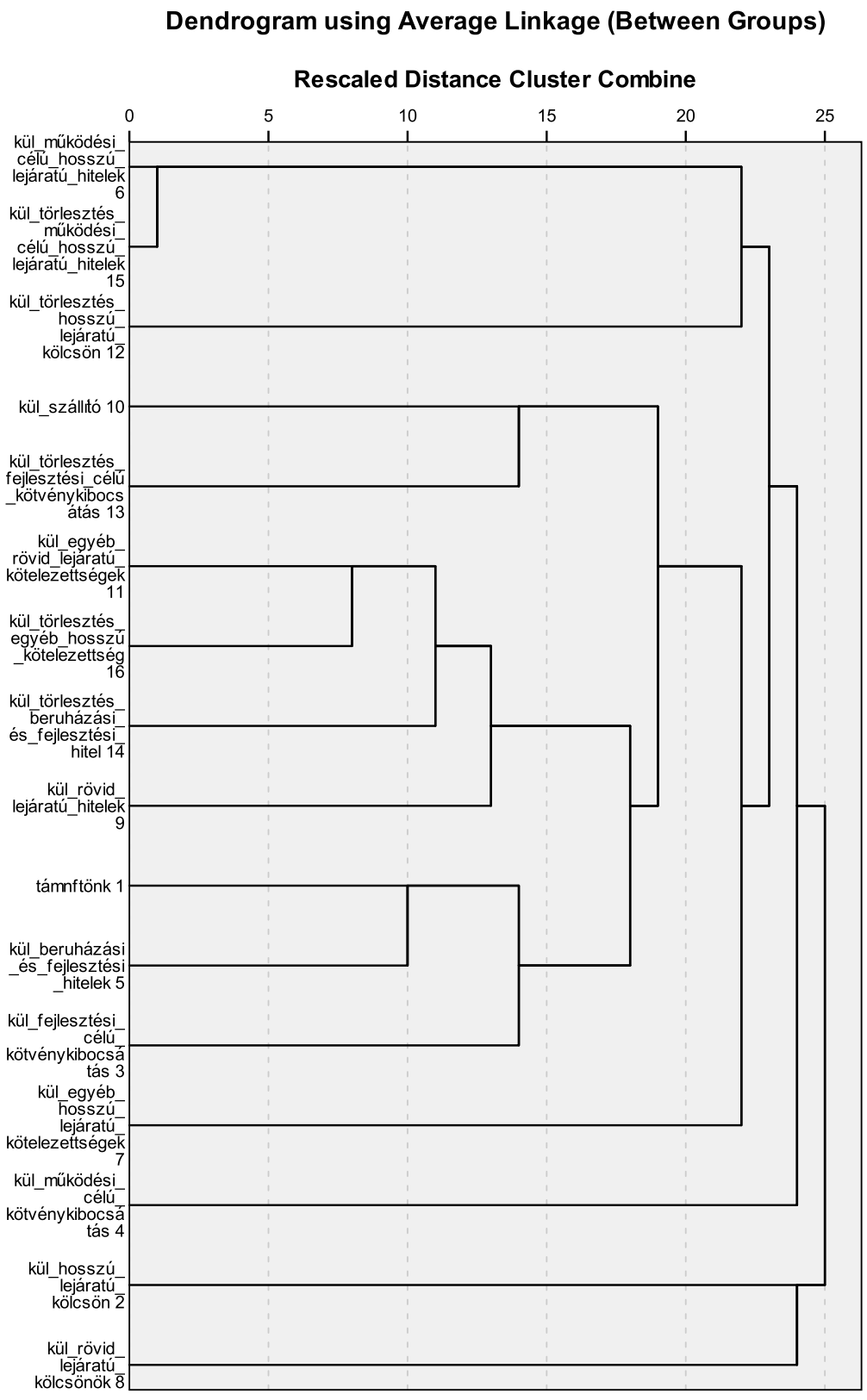
Communalities		
	Initial	Extraction
amount of EU funds received by a municipality in the programming period 2004-2006	1,00	0,82
difference in long-term loans	1,00	0,99
difference of the issuance of bonds for development purposes	1,00	0,58
difference of investment and development bank loans	1,00	0,91
difference of other long-term liabilities	1,00	0,92
difference of short-term bank loans	1,00	0,90
difference of supplier liabilities from the purchase of goods and services	1,00	0,95
difference of other short-term liabilities	1,00	0,99
difference of short-term liabilities due next year from the service of long-term loans	1,00	0,99
difference of short-term liabilities due next year from the service of investment and development bank loans	1,00	0,82
difference of short-term liabilities due next year from the service of other long-term liabilities	1,00	0,99

c20) Results of the principal component analysis with varimax rotation, Zala County

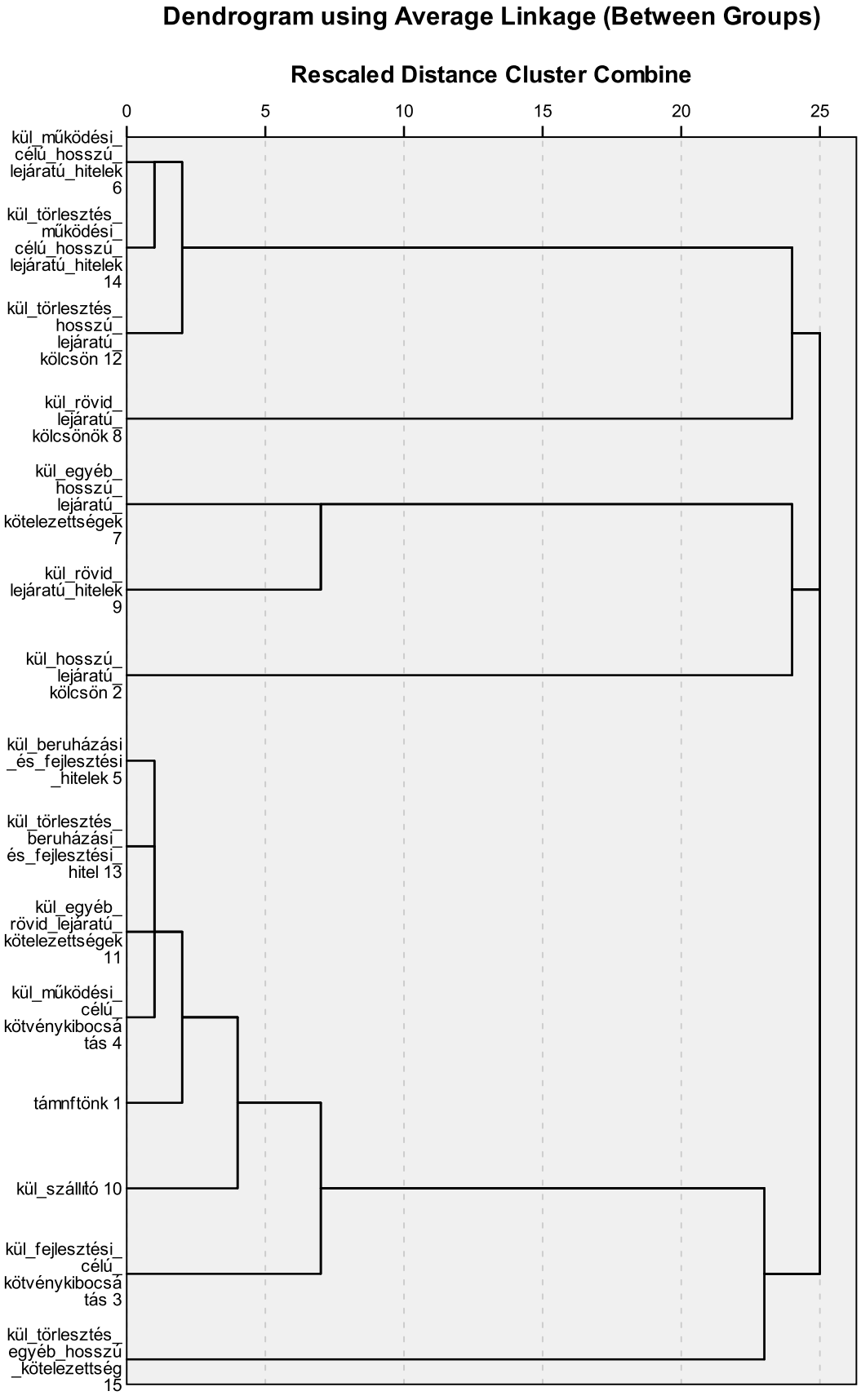
Variable	Factors			
	1	2	3	4
amount of EU funds received by a municipality in the programming period 2004-2006	0,69	-0,08	0,63	0,06
difference of the issuance of bonds for development purposes	0,03	0,95	0,00	0,03
difference of investment and development bank loans	0,45	-0,11	0,82	0,05
difference of long-term bank loans for operating purposes	0,99	-0,01	0,01	0,00
difference of other long-term liabilities	0,85	0,00	-0,02	-0,01
difference in short-term loans	0,00	0,01	-0,01	1,00
difference of short-term bank loans	-0,02	0,96	-0,06	-0,02
difference of supplier liabilities from the purchase of goods and services	-0,25	0,03	0,68	-0,06
difference of other short-term liabilities	0,99	0,01	0,14	0,01
difference of short-term liabilities due next year from the service of long-term loans	0,99	-0,01	0,01	0,00
difference of short-term liabilities due next year from the service of investment and development bank loans	0,90	0,06	0,37	0,03
difference of short-term liabilities due next year from the service of long-term bank loans for operating purposes	0,99	-0,01	0,01	0,00
difference of short-term liabilities due next year from the service of other long-term liabilities	0,99	-0,01	0,01	0,00

Communalities		
	Initial	Extraction
amount of EU funds received by a municipality in the programming period 2004-2006	1,00	0,88
difference of the issuance of bonds for development purposes	1,00	0,90
difference of investment and development bank loans	1,00	0,90
difference of long-term bank loans for operating purposes	1,00	0,98
difference of other long-term liabilities	1,00	0,72
difference in short-term loans	1,00	0,99
difference of short-term bank loans	1,00	0,94
difference of supplier liabilities from the purchase of goods and services	1,00	0,52
difference of other short-term liabilities	1,00	0,99
difference of short-term liabilities due next year from the service of long-term loans	1,00	0,98
difference of short-term liabilities due next year from the service of investment and development bank loans	1,00	0,95
difference of short-term liabilities due next year from the service of long-term bank loans for operating purposes	1,00	0,98
difference of short-term liabilities due next year from the service of other long-term liabilities	1,00	0,97

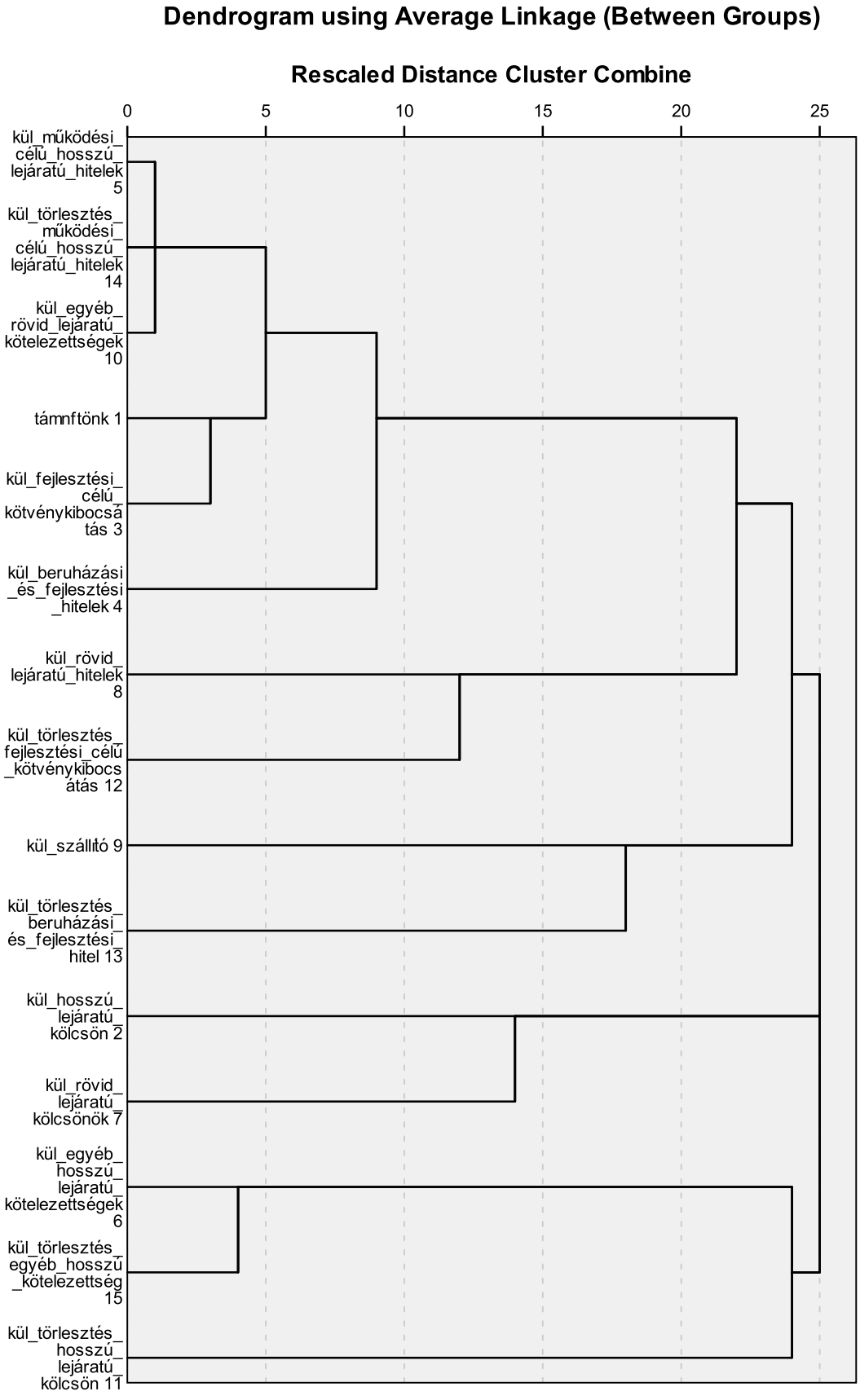
d1) Cluster analysis at national level



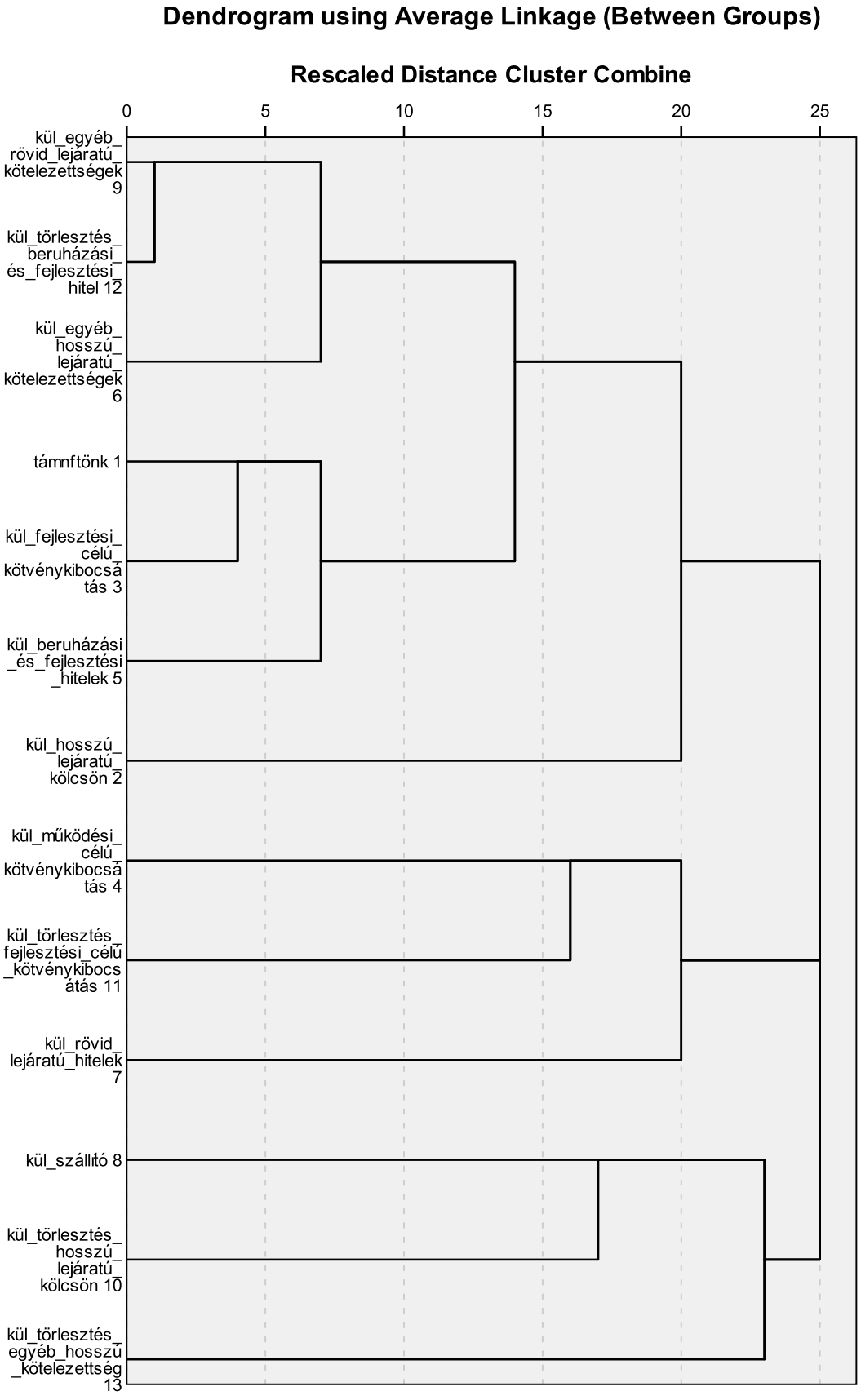
d2) Cluster analysis at the county (NUTS3) level (Baranya)



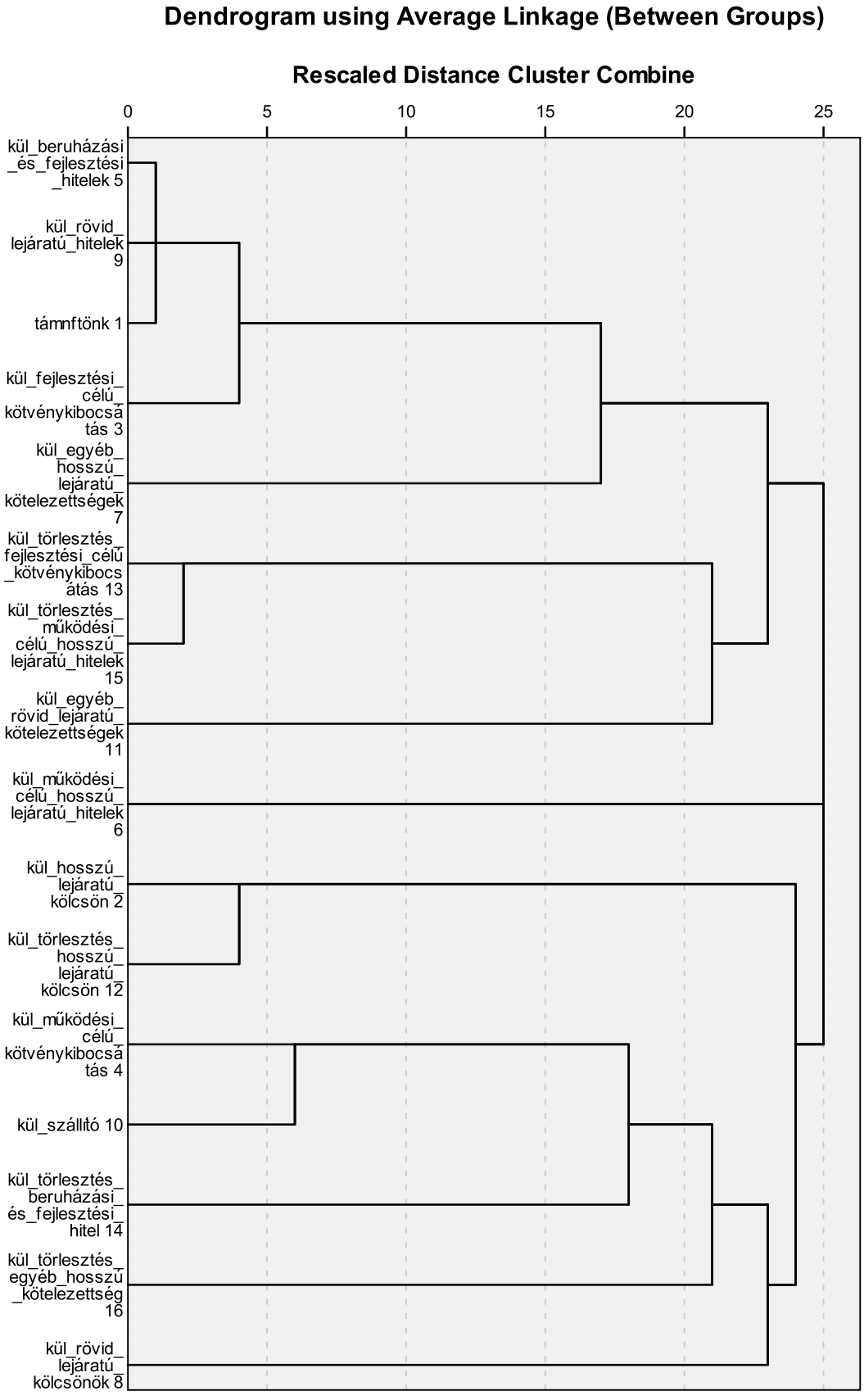
d3) Cluster analysis at the county (NUTS3) level (Bács-Kiskun)



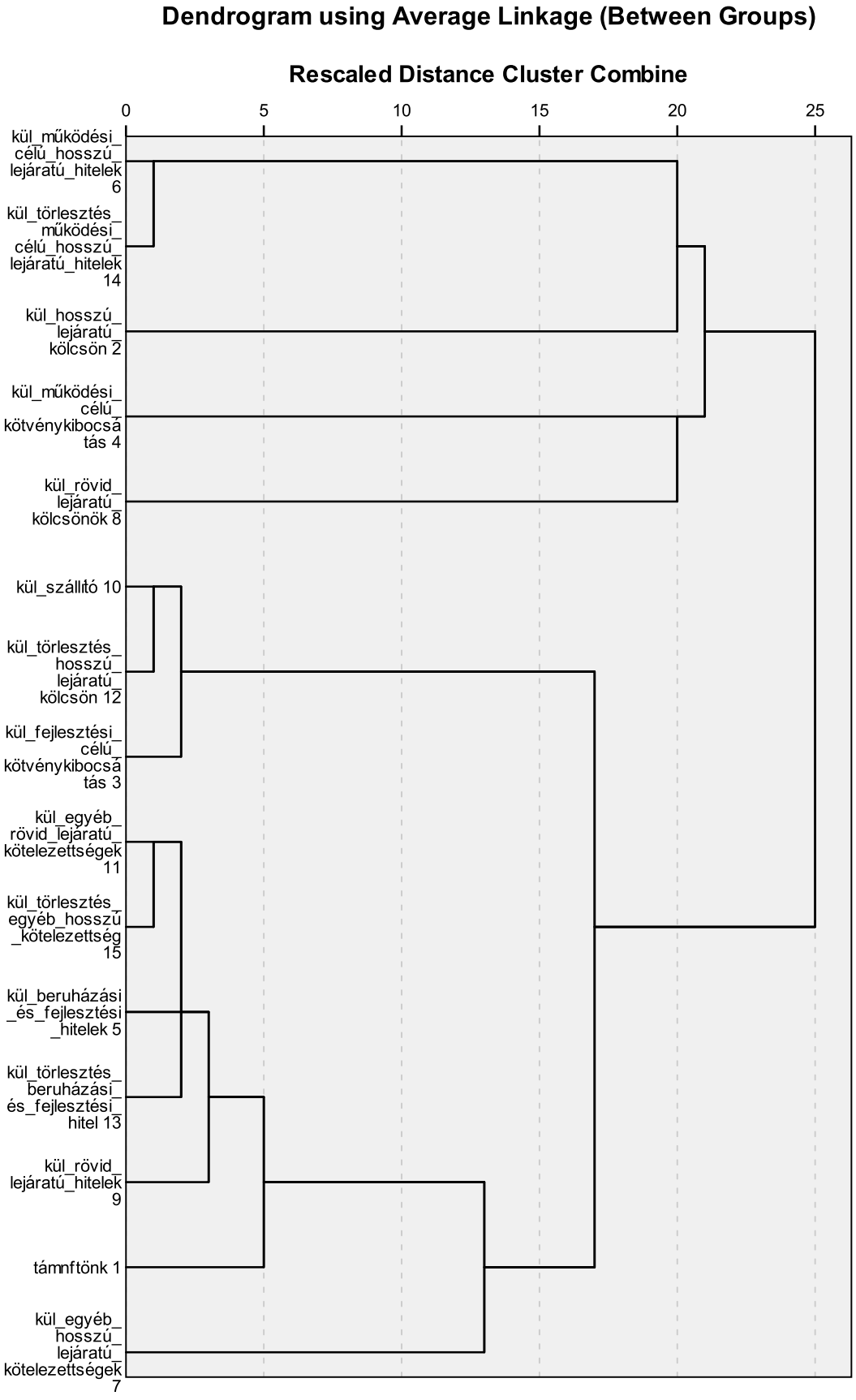
d4) Cluster analysis at the county (NUTS3) level (Békés)



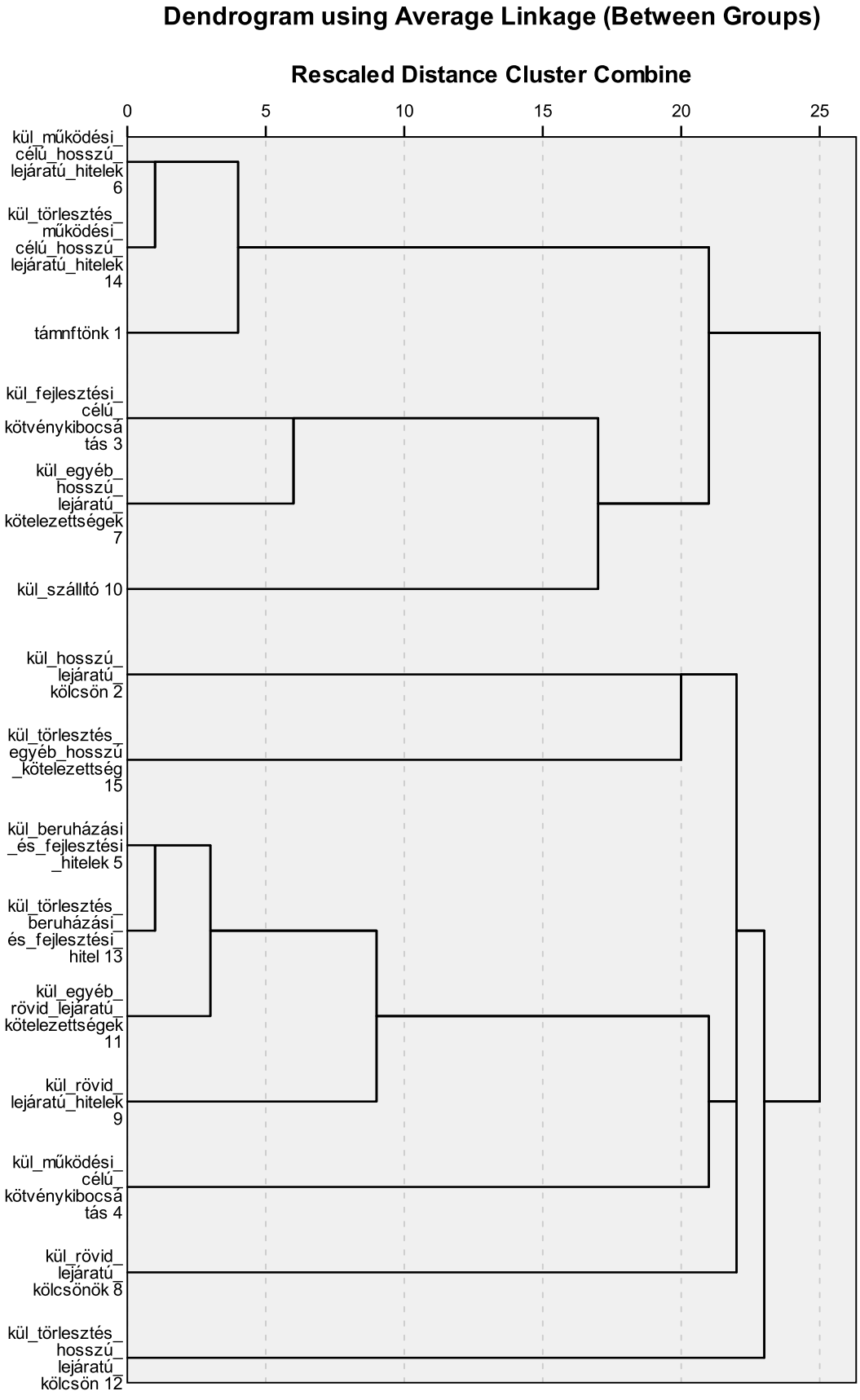
d5) Cluster analysis at the county (NUTS3) level (Borsod-Abaúj-Zemplén)



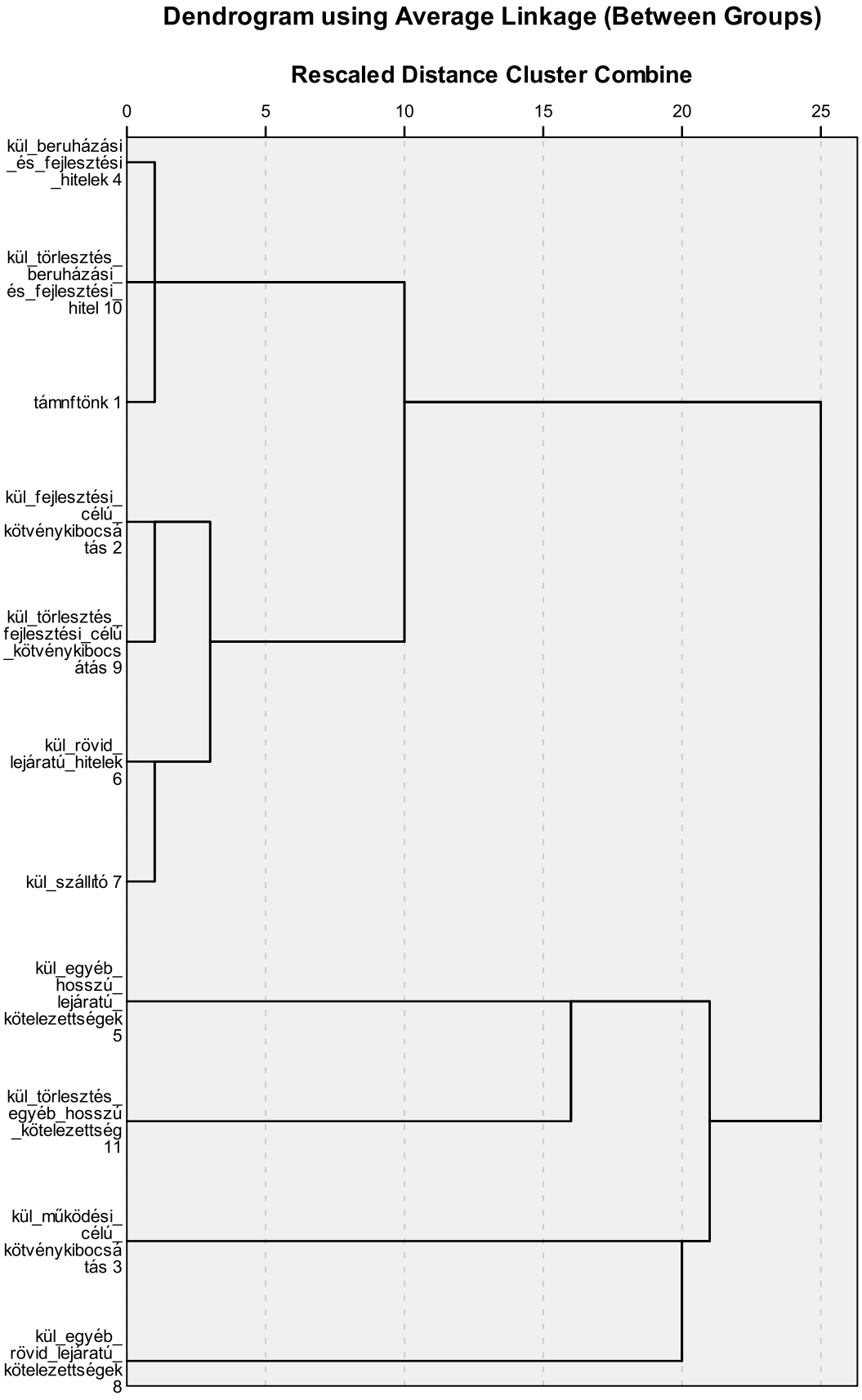
d6) Cluster analysis at the county (NUTS3) level (Csongrád)



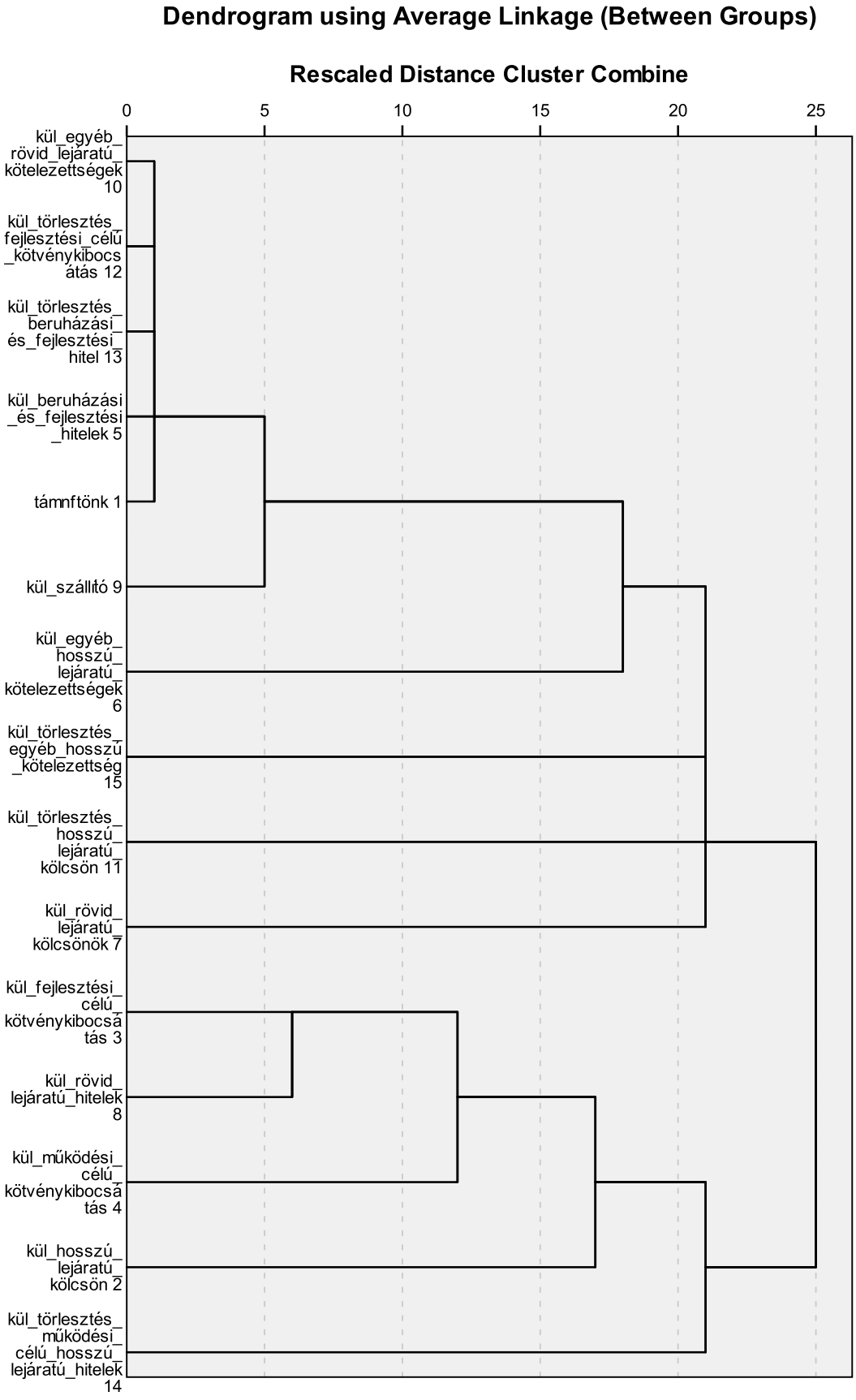
d7) Cluster analysis at the county (NUTS3) level (Fejér)



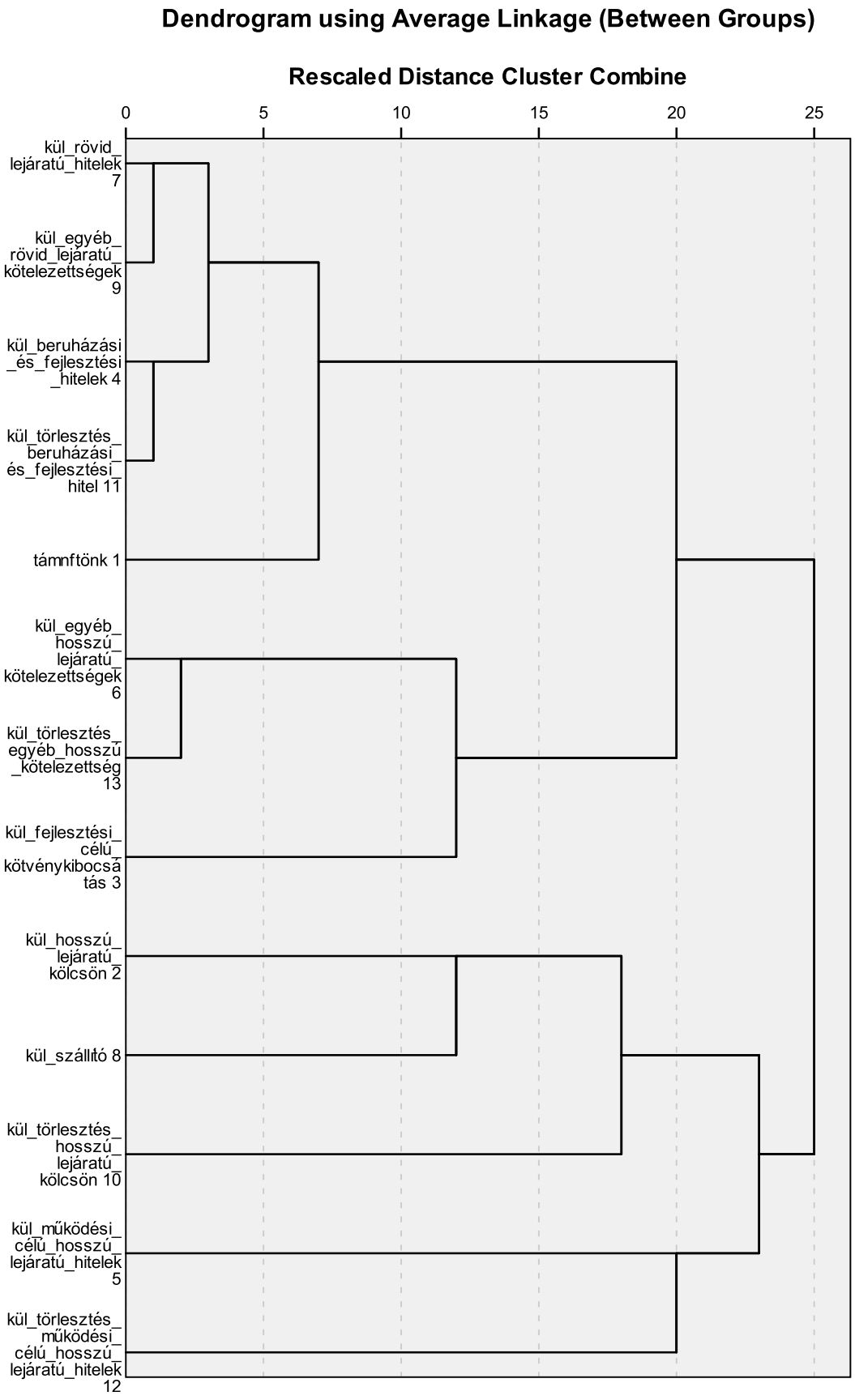
d8) Cluster analysis at the county (NUTS3) level (Győr-Moson-Sopron)



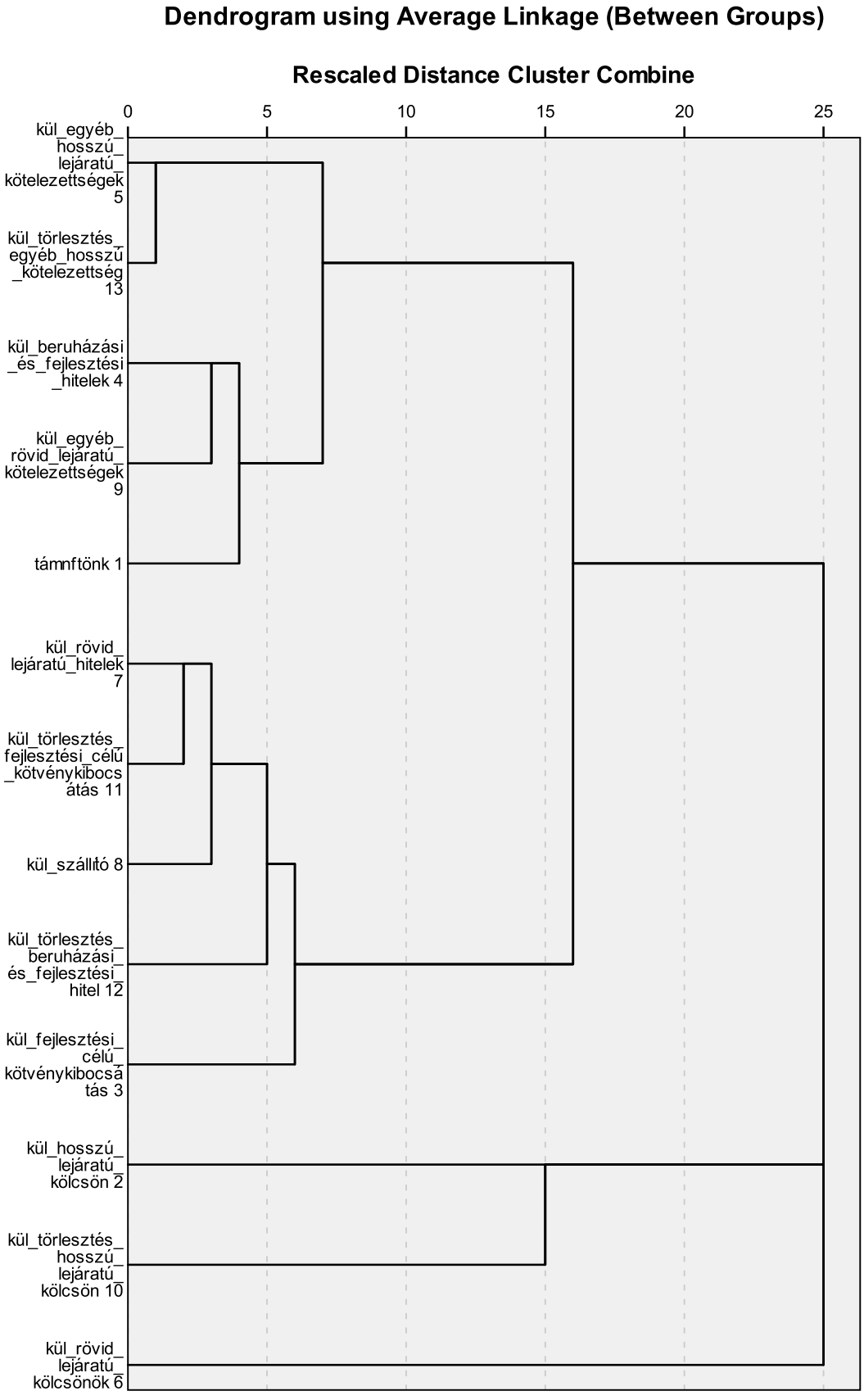
d9) Cluster analysis at the county (NUTS3) level (Hajdú-Bihar)



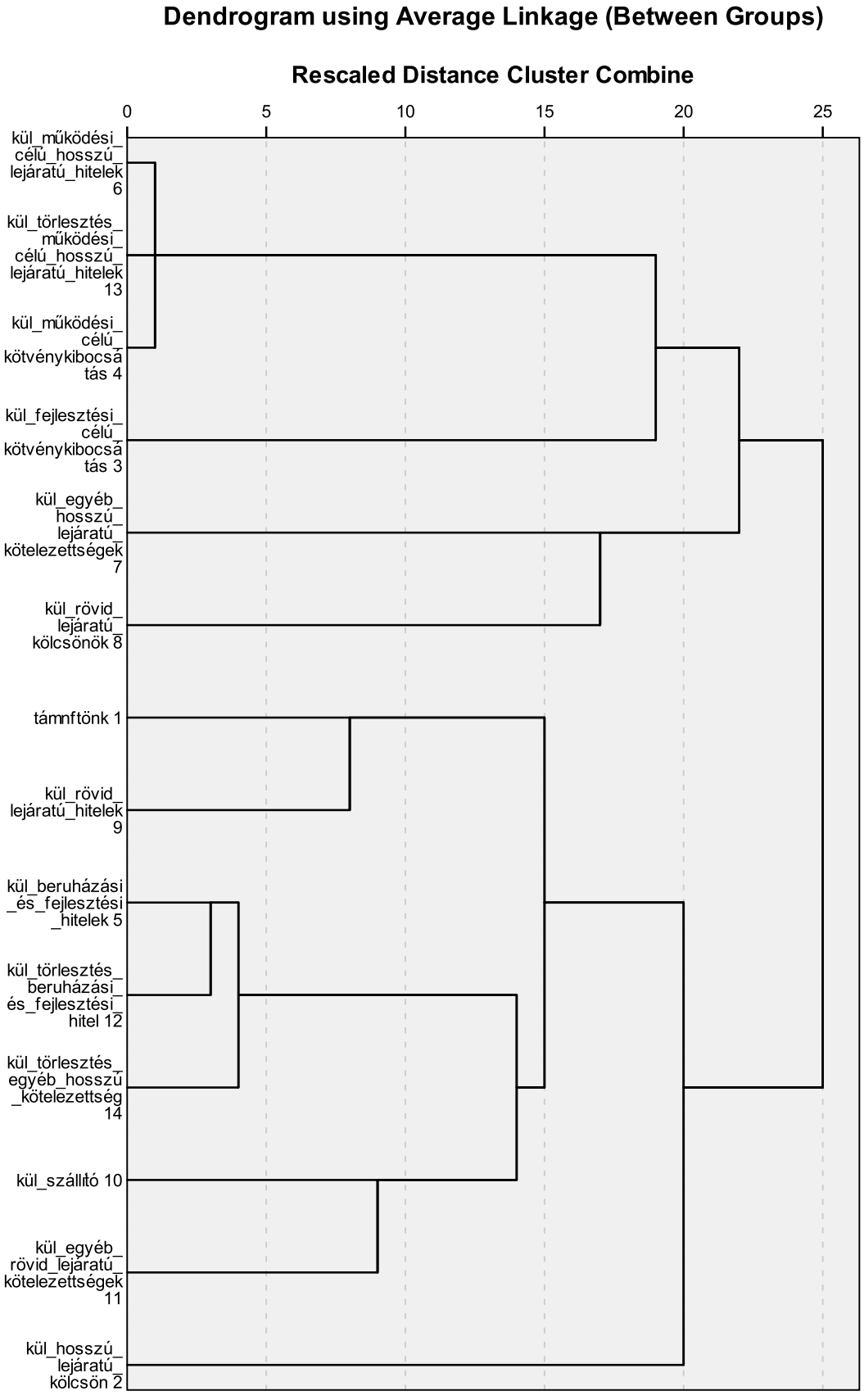
d10) Cluster analysis at the county (NUTS3) level (Heves)



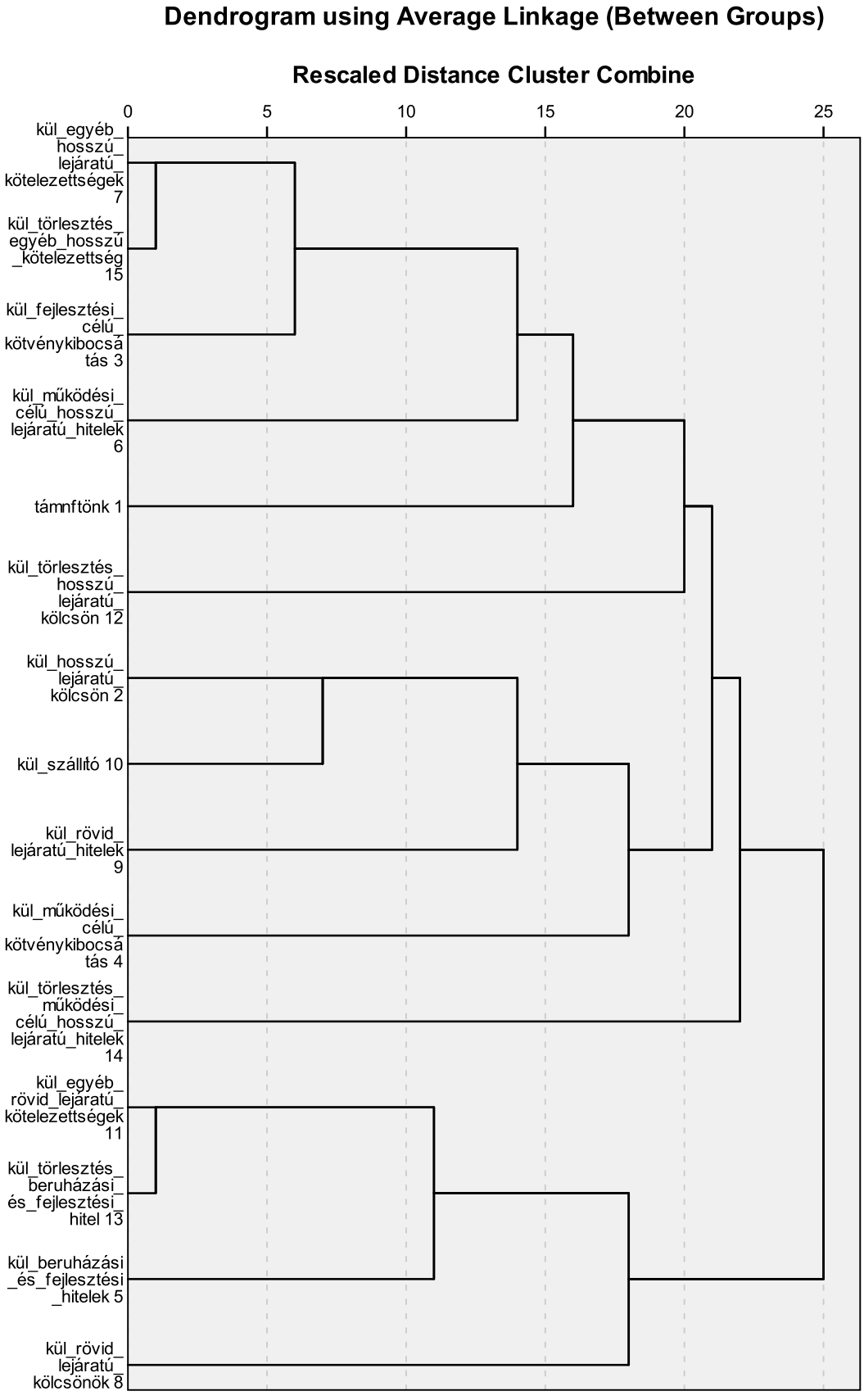
d11) Cluster analysis at the county (NUTS3) level (Komárom-Esztergom)



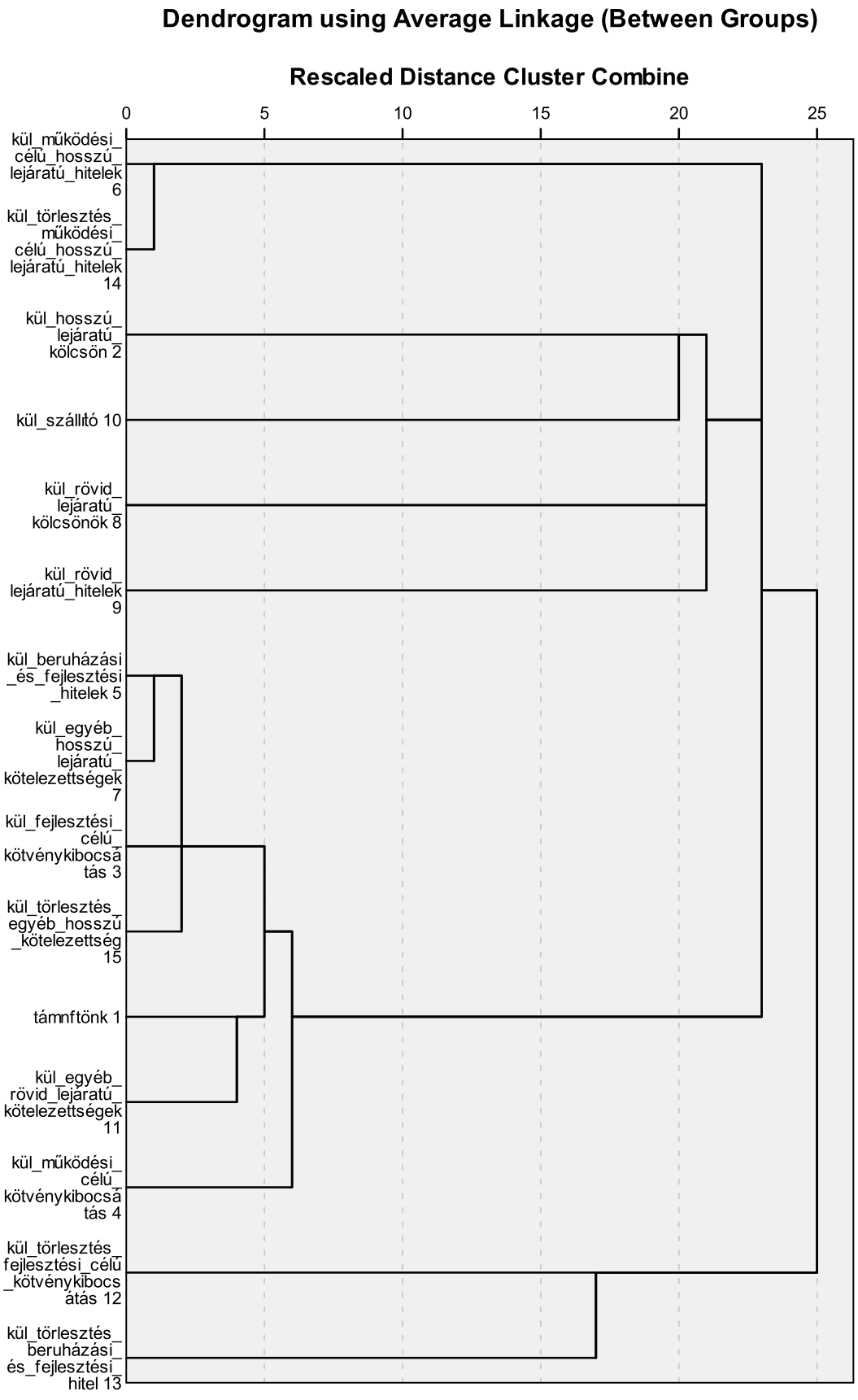
d12) Cluster analysis at the county (NUTS3) level (Nógrád)



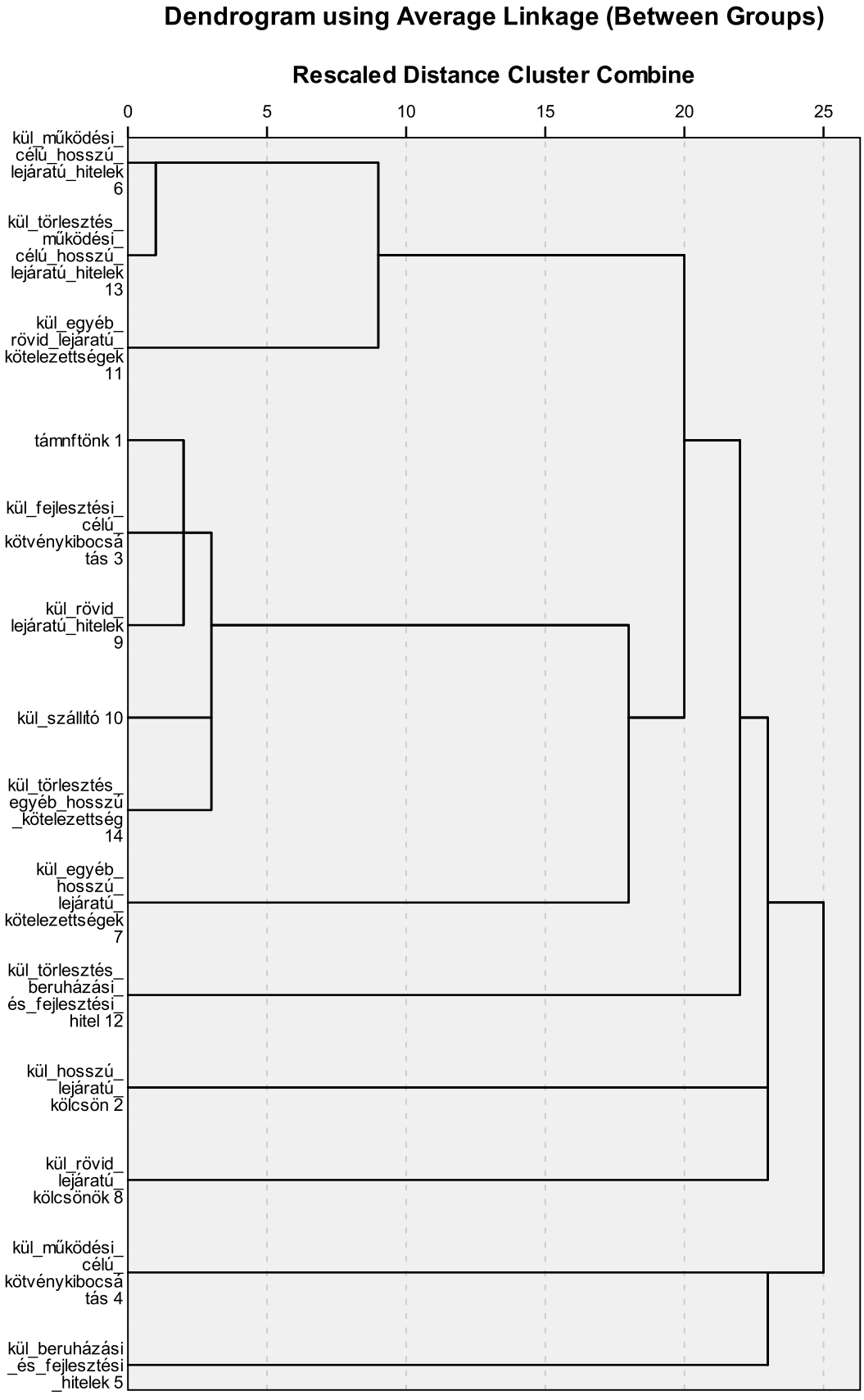
d13) Cluster analysis at the county (NUTS3) level (Pest)



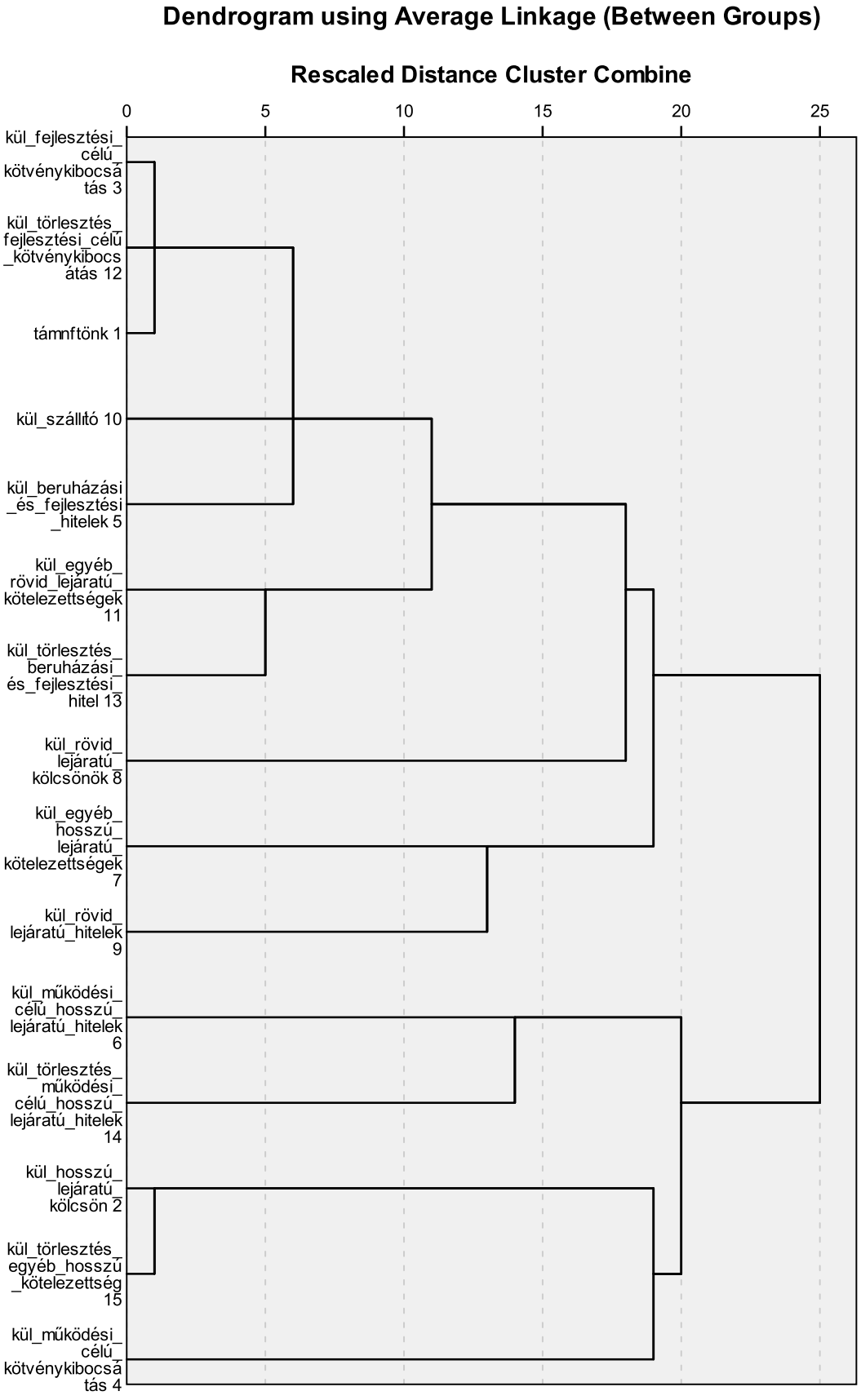
d14) Cluster analysis at the county (NUTS3) level (Somogy)



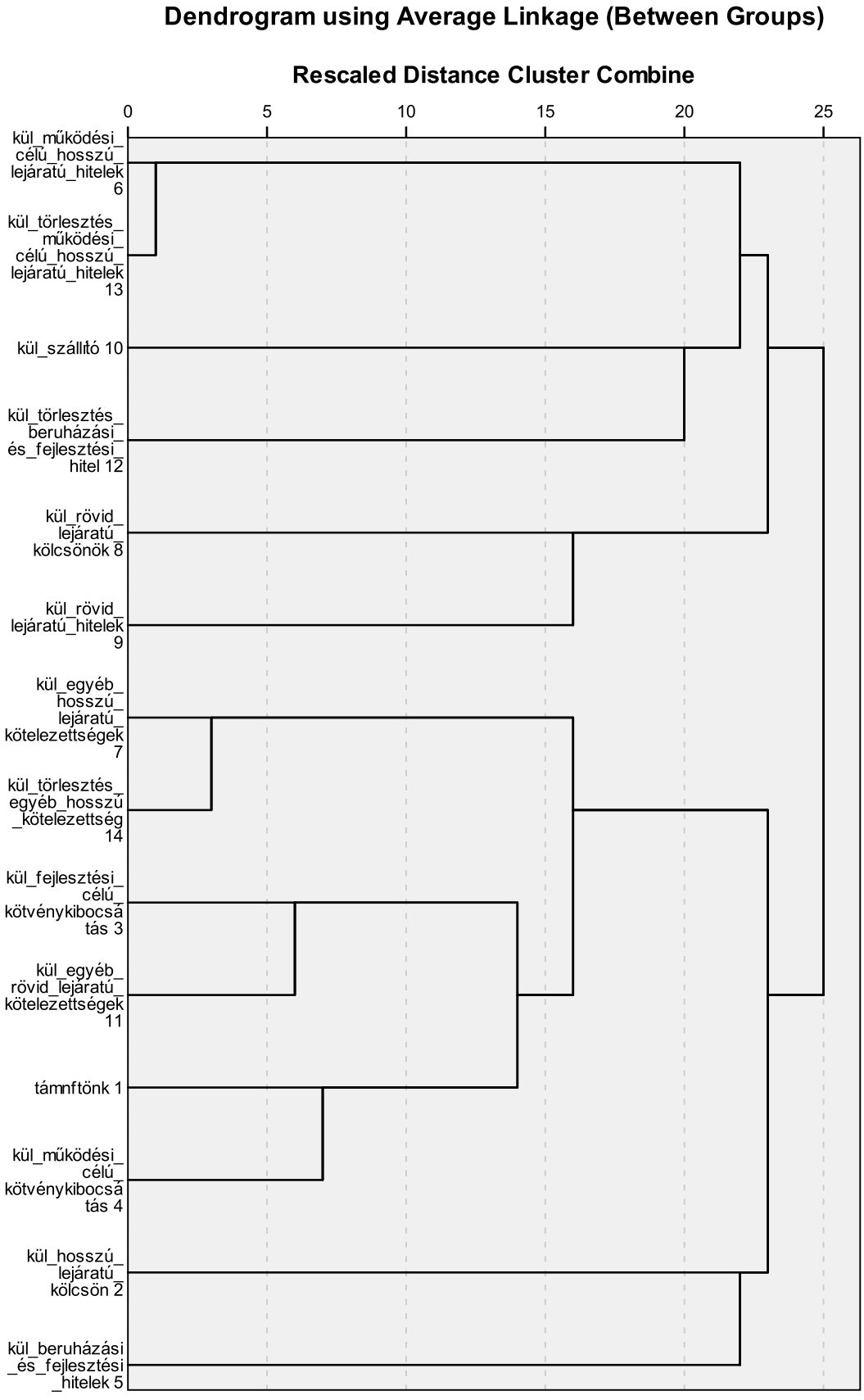
d15) Cluster analysis at the county (NUTS3) level (Szabolcs-Szatmár-Bereg)



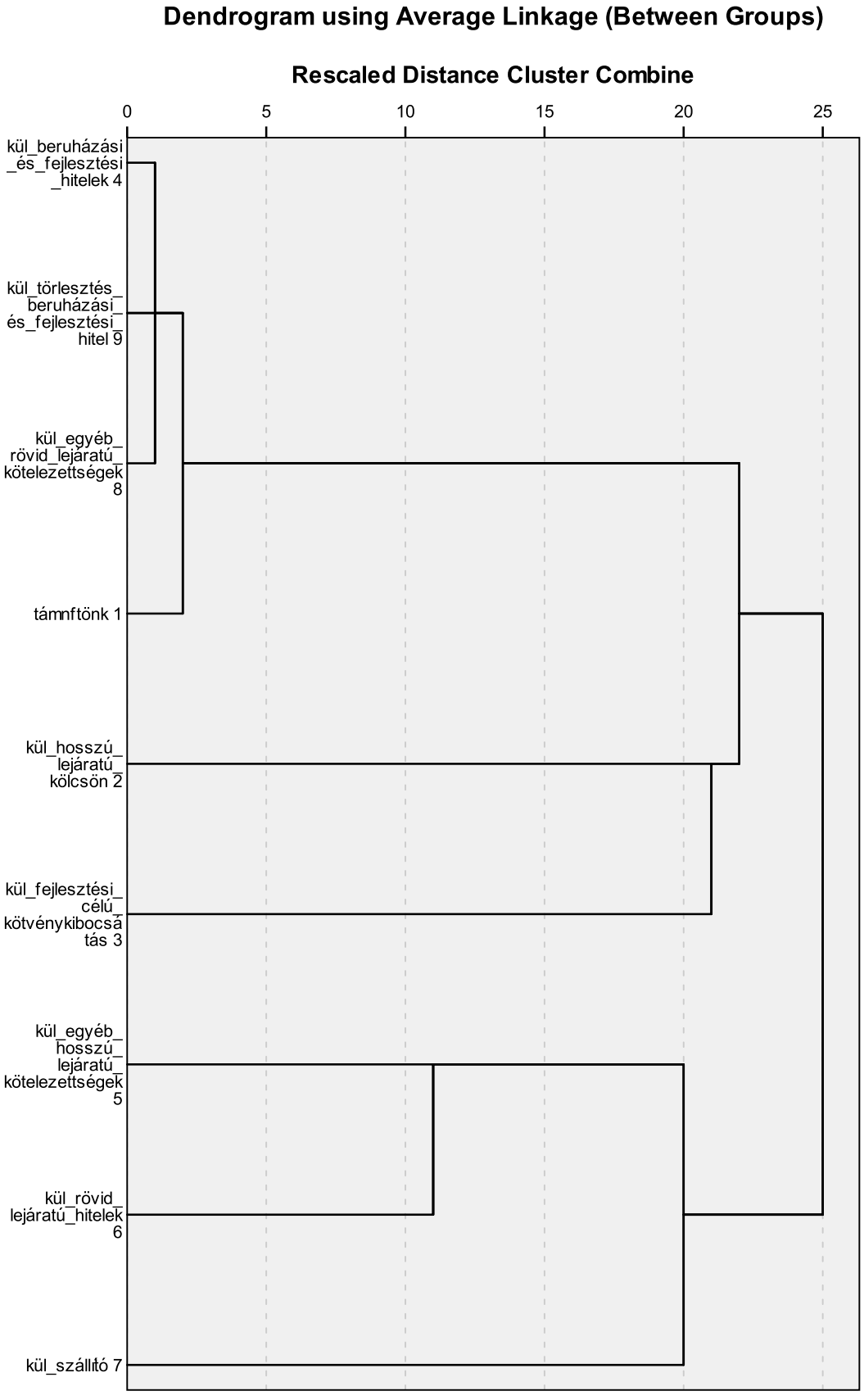
d16) Cluster analysis at the county (NUTS3) level (Jász-Nagykun-Szolnok)



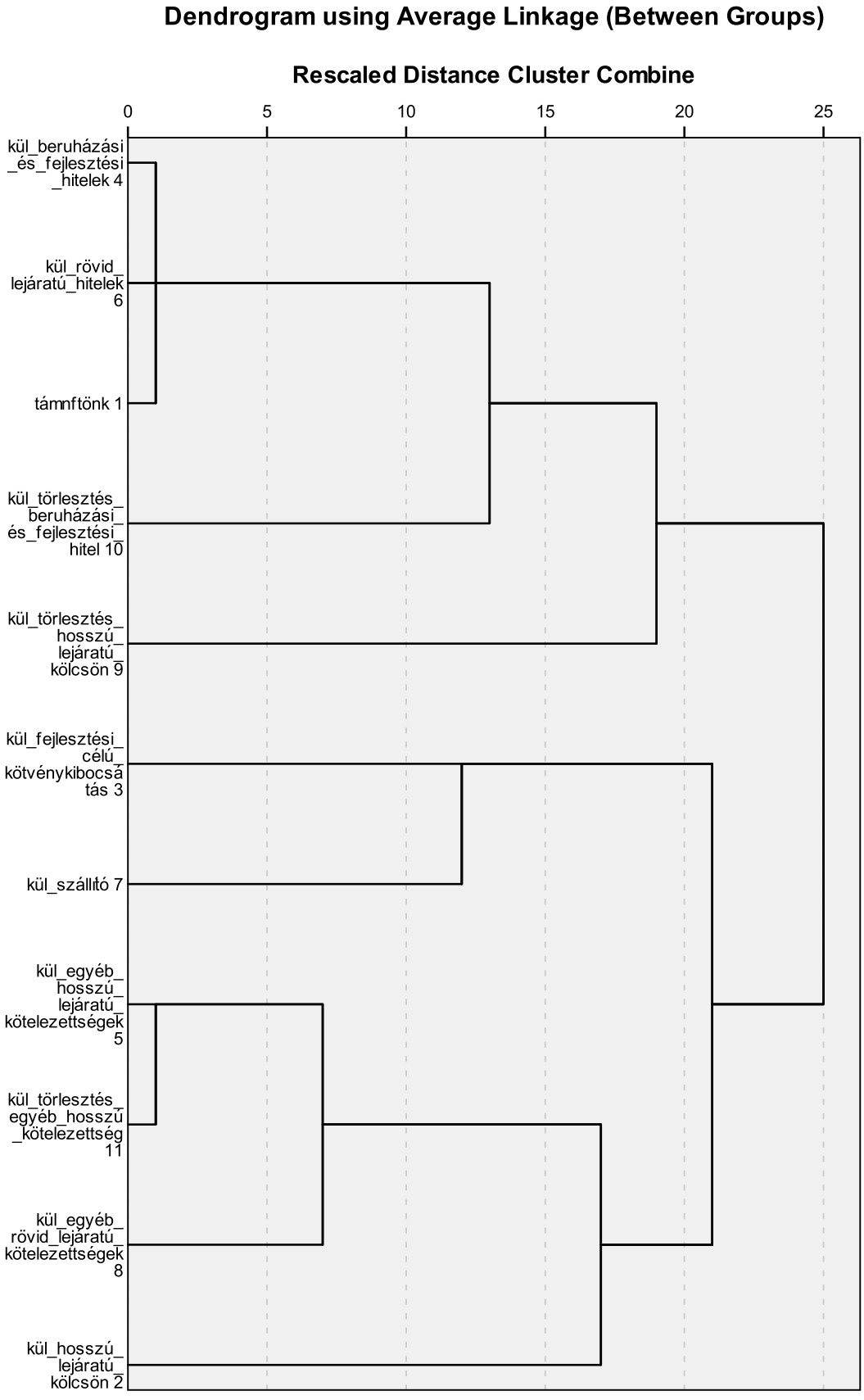
d17) Cluster analysis at the county (NUTS3) level (Tolna)



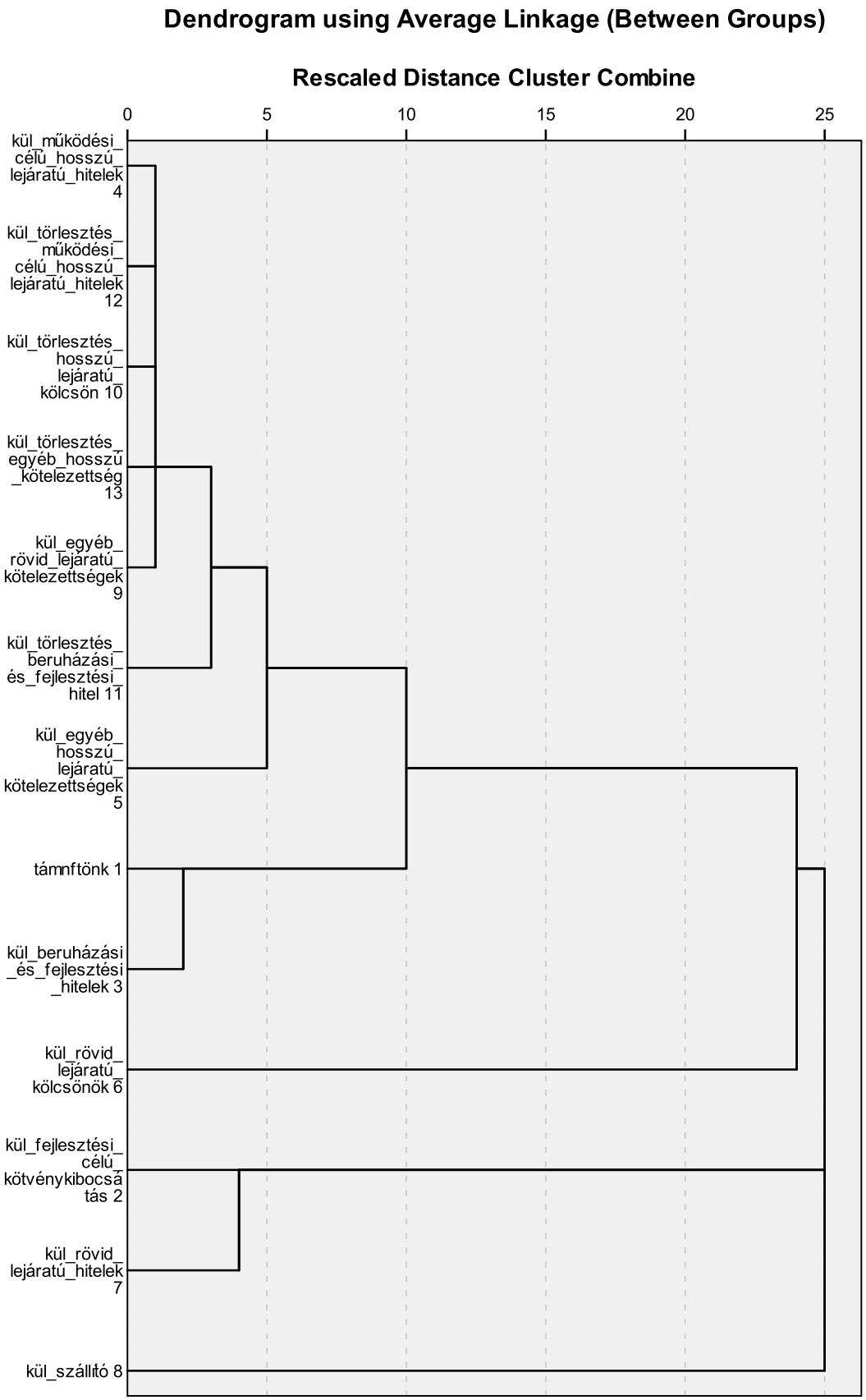
d18) Cluster analysis at the county (NUTS3) level (Vas)



d19) Cluster analysis at the county (NUTS3) level (Veszprém)



d20) Cluster analysis at the county (NUTS3) level (Zala)



Annex 14: Testing results for Hypothesis H4

a) Pearson-correlation study on municipalities

Pearson Correlation national level												
National	Number of permanent residents in 2008	Stock of money	Budgetary grants to a municipality	Revenues from personal income taxes	Sale of tangible assets and immaterial goods	Municipal own soure revenues	Total local taxes	Total business taxes	Tax charge	Interest revenues	Short-term and liquid loans	Long-term loans
Number of permanent residents in 2008	1	0,852	0,977	0,968	0,849	0,974	0,886	0,866	0,782	0,727	0,556	0,87

Pearson Correlation NUTS1 level													
NUTS1 Region		Number of permanent residents in 2008	Stock of money	Budgetary grants to a municipality	Revenues from personal income taxes	Sale of tangible assets and immaterial goods	Municipal own soure revenues	Total local taxes	Total business taxes	Tax charge	Interest revenues	Short-term and liquid loans	Long-term loans
Central Transdanubia	Number of permanent residents in 2008	1	0,561	0,946	0,89	0,679	0,827	0,565	0,539	0,753	0,384	0,471	0,771
Transdanubia		1	0,895	0,986	0,966	0,877	0,982	0,934	0,919	0,786	0,784	0,672	0,855
Great Plain and North		1	0,885	0,984	0,983	0,901	0,984	0,964	0,96	0,806	0,843	0,533	0,891

Pearson Correlation NUTS2 level													
NUTS2 Region		Number of permanent residents in 2008	Stock of money	Budgetary grants to a municipality	Revenues from personal income taxes	Sale of tangible assets and immaterial goods	Municipal own soure revenues	Total local taxes	Total business taxes	Tax charge	Interest revenues	Short-term and liquid loans	Long-term loans
Central Hungary	Number of permanent residents in 2008	1	0,561	0,946	0,89	0,679	0,827	0,565	0,539	0,753	0,384	0,471	0,771
Central Transdanubia		1	0,81	0,981	0,975	0,84	0,976	0,943	0,917	0,916	0,626	0,36	0,815
Western Hungary		1	0,929	0,994	0,966	0,909	0,993	0,971	0,976	0,708	0,868	0,742	0,857
Southern Transdanubia		1	0,939	0,984	0,977	0,947	0,983	0,934	0,942	0,849	0,885	0,812	0,952
Northern Hungary		1	0,887	0,991	0,987	0,927	0,989	0,923	0,913	0,788	0,93	0,41	0,959
Northern Great Plain		1	0,915	0,987	0,987	0,927	0,994	0,979	0,977	0,75	0,854	0,51	0,913
Southern Great Plain		1	0,845	0,989	0,983	0,864	0,981	0,979	0,976	0,91	0,849	0,649	0,818

Pearson Correlation NUTS3 level													
County		Number of permanent residents in 2008	Stock of money	Budgetary grants to a municipality	Revenues from personal income taxes	Sale of tangible assets and immaterial goods	Municipal own soure revenues	Total local taxes	Total business taxes	Tax charge	Interest revenues	Short-term and liquid loans	Long-term loans
Baranya	Number of permanent residents in 2008	1	0,959	0,998	0,985	0,967	0,997	0,991	0,988	0,986	0,913	0,935	0,963
Bács-Kiskun		1	0,885	0,983	0,974	0,941	0,994	0,978	0,976	0,894	0,934	0,456	0,966
Békés		1	0,86	0,977	0,99	0,669	0,987	0,955	0,941	0,896	0,935	0,755	0,966
Borsod-Abaúj-Zemplén		1	0,914	0,996	0,991	0,982	0,992	0,919	0,909	0,972	0,96	0,348	0,98
Csongrád		1	0,835	0,999	0,992	0,984	0,995	0,989	0,985	0,981	0,873	0,769	0,729
Fejér		1	0,978	0,992	0,981	0,908	0,992	0,988	0,986	0,985	0,865	0,223	0,974
Győr-Moson-Sopron		1	0,974	0,994	0,968	0,976	0,997	0,984	0,98	0,606	0,945	0,818	0,834
Hajdú-Bihar		1	0,984	0,995	0,992	0,982	0,999	0,99	0,99	0,995	0,983	0,118	0,984
Heves		1	0,896	0,985	0,986	0,82	0,988	0,964	0,959	0,9	0,873	0,574	0,937
Komárom-Esztergom		1	0,654	0,983	0,984	0,758	0,952	0,881	0,835	0,975	0,639	0,378	0,67
Nógrád		1	0,94	0,959	0,993	0,476	0,994	0,966	0,972	0,885	0,942	0,908	0,889
Pest		1	0,56	0,946	0,89	0,679	0,827	0,565	0,539	0,752	0,384	0,471	0,771
Somogy		1	0,956	0,976	0,992	0,908	0,964	0,942	0,971	0,937	0,966	0,25	0,937
Szabolcs-Szatmár-Bereg		1	0,77	0,985	0,99	0,976	0,997	0,98	0,98	0,977	0,735	0,937	0,942
Jász-Nagykun-Szolnok		1	0,815	0,992	0,97	0,372	0,984	0,931	0,922	0,868	0,929	0,685	0,933
Tolna		1	0,726	0,97	0,935	0,849	0,943	0,709	0,741	0,828	0,561	0,815	0,947
Vas		1	0,897	0,995	0,989	0,898	0,997	0,986	0,987	0,954	0,69	0,388	0,981
Veszprém		1	0,729	0,978	0,987	0,851	0,978	0,94	0,922	0,898	0,77	0,503	0,892
Zala		1	0,885	0,995	0,972	0,917	0,989	0,985	0,985	0,782	0,831	0,887	0,886

Pearson Correlation (breakdown by the author)													
Breakdown by the author		Number of permanent residents in 2008	Stock of money	Budgetary grants to a municipality	Revenues from personal income taxes	Sale of tangible assets and immaterial goods	Municipal own soure revenues	Total local taxes	Total business taxes	Tax charge	Interest revenues	Short-term and liquid loans	Long-term loans
West	Number of permanent residents in 2008	1	0,924	0,988	0,966	0,901	0,986	0,95	0,951	0,745	0,877	0,759	0,876
Centre		1	0,777	0,954	0,952	0,782	0,95	0,791	0,76	0,817	0,557	0,411	0,876
East		1	0,886	0,987	0,985	0,9	0,983	0,979	0,976	0,818	0,832	0,573	0,867

b) Pearson-correlation study on municipalities that received EU funds

Pearson Correlation national level (municipalities received EU funds)												
	Number of permanent residents in 2008	Stock of money	Budgetary grants to a municipality	Revenues from personal income taxes	Sale of tangible assets and immaterial goods	Municipal own soure revenues	Total local taxes	Total business taxes	Tax charge	Interest revenues	Short-term and liquid loans	Long-term loans
Number of permanent residents in 2008	1	0,851	0,979	0,969	0,859	0,975	0,89	0,87	0,783	0,737	0,559	0,893

Pearson Correlation NUTS1 level (municipalities received EU funds)													
NUTS1 Region		Number of permanent residents in 2008	Stock of money	Budgetary grants to a municipality	Revenues from personal income taxes	Sale of tangible assets and immaterial goods	Municipal own soure revenues	Total local taxes	Total business taxes	Tax charge	Interest revenues	Short-term and liquid loans	Long-term loans
Central Transdanubia	Number of permanent residents in 2008	1	0,485	0,938	0,874	0,69	0,791	0,503	0,48	0,746	0,324	0,456	0,76
Transdanubia		1	0,896	0,987	0,967	0,889	0,982	0,935	0,922	0,781	0,792	0,661	0,853
Great Plain and North		1	0,895	0,985	0,984	0,907	0,985	0,98	0,978	0,809	0,896	0,526	0,936

Pearson Correlation NUTS2 level (municipalities received EU funds)													
NUTS2 Region		Number of permanent residents in 2008	Stock of money	Budgetary grants to a municipality	Revenues from personal income taxes	Sale of tangible assets and immaterial goods	Municipal own soure revenues	Total local taxes	Total business taxes	Tax charge	Interest revenues	Short-term and liquid loans	Long-term loans
Central Hungary	Number of permanent residents in 2008	1	0,485	0,938	0,874	0,69	0,791	0,503	0,48	0,746	0,324	0,456	0,76
Central Transdanubia		1	0,79	0,982	0,974	0,868	0,975	0,942	0,914	0,914	0,638	0,256	0,787
Western Hungary		1	0,935	0,995	0,976	0,954	0,995	0,976	0,981	0,703	0,875	0,747	0,865
Southern Transdanubia		1	0,942	0,985	0,978	0,953	0,984	0,936	0,944	0,852	0,884	0,81	0,958
Northern Hungary		1	0,889	0,993	0,991	0,949	0,994	0,975	0,974	0,786	0,94	0,397	0,965
Northern Great Plain		1	0,916	0,988	0,988	0,932	0,995	0,983	0,981	0,772	0,853	0,497	0,914
Southern Great Plain		1	0,888	0,989	0,984	0,86	0,982	0,983	0,981	0,914	0,941	0,746	0,956

Pearson Correlation NUTS3 level (municipalities received EU funds)													
County		Number of permanent residents in 2008	Stock of money	Budgetary grants to a municipality	Revenues from personal income taxes	Sale of tangible assets and immaterial goods	Municipal own soure revenues	Total local taxes	Total business taxes	Tax charge	Interest revenues	Short-term and liquid loans	Long-term loans
Baranya	Number of permanent residents in 2008	1	0,959	0,999	0,987	0,969	0,997	0,993	0,991	0,988	0,912	0,938	0,962
Bács-Kiskun		1	0,889	0,983	0,974	0,95	0,996	0,984	0,983	0,894	0,945	0,426	0,976
Békés		1	0,846	0,976	0,99	0,648	0,986	0,961	0,948	0,904	0,936	0,763	0,97
Borsod-Abaúj-Zemplén		1	0,923	0,997	0,996	0,988	0,996	0,985	0,988	0,976	0,975	0,335	0,986
Csongrád		1	0,926	0,999	0,996	0,995	0,997	0,991	0,989	0,989	0,978	0,898	0,978
Fejér		1	0,987	0,993	0,983	0,985	0,995	0,99	0,988	0,987	0,974	0,023	0,988
Győr-Moson-Sopron		1	0,98	0,995	0,971	0,984	0,998	0,988	0,984	0,588	0,95	0,812	0,827
Hajdú-Bihar		1	0,987	0,996	0,994	0,985	0,999	0,993	0,994	0,996	0,985	0,086	0,987
Heves		1	0,896	0,987	0,988	0,901	0,994	0,971	0,966	0,908	0,875	0,573	0,947
Komárom-Esztergom		1	0,638	0,981	0,983	0,718	0,946	0,869	0,82	0,982	0,617	0,336	0,635
Nógrád		1	0,946	0,963	0,996	0,45	0,999	0,977	0,985	0,897	0,949	0,936	0,914
Pest		1	0,482	0,938	0,873	0,688	0,789	0,501	0,478	0,744	0,322	0,453	0,758
Somogy		1	0,971	0,977	0,993	0,911	0,962	0,947	0,974	0,952	0,978	0,168	0,963
Szabolcs-Szatmár-Bereg		1	0,766	0,985	0,991	0,983	0,998	0,986	0,985	0,983	0,732	0,944	0,945
Jász-Nagykun-Szolnok		1	0,804	0,993	0,969	0,306	0,987	0,934	0,923	0,946	0,936	0,664	0,937
Tolna		1	0,702	0,975	0,924	0,871	0,946	0,711	0,745	0,816	0,533	0,82	0,97
Vas		1	0,963	0,997	0,993	0,987	0,998	0,99	0,99	0,976	0,827	0,33	0,991
Veszprém		1	0,759	0,98	0,988	0,852	0,979	0,943	0,927	0,898	0,806	0,463	0,893
Zala		1	0,896	0,998	0,994	0,978	0,992	0,995	0,994	0,83	0,826	0,97	0,912

Pearson Correlation (breakdown by the author, municipalities received EU funds)													
Breakdown by the author		Number of permanent residents in 2008	Stock of money	Budgetary grants to a municipality	Revenues from personal income taxes	Sale of tangible assets and immaterial goods	Municipal own soure revenues	Total local taxes	Total business taxes	Tax charge	Interest revenues	Short-term and liquid loans	Long-term loans
West	Number of permanent residents in 2008	1	0,929	0,989	0,969	0,909	0,986	0,952	0,955	0,742	0,886	0,757	0,881
Centre		1	0,757	0,96	0,955	0,798	0,951	0,783	0,749	0,819	0,542	0,396	0,88
East		1	0,9	0,987	0,986	0,902	0,983	0,983	0,981	0,825	0,889	0,582	0,927

c) Linear regression results

I. Study of all municipalities in settlements, disregarding geographical location

Model Summary		
Number of iterations	R	R^2
6	0,808	0,653

Coefficients of the approximation equation

Number of iterations	Variables	Coefficients	Std. Error	Standardized Coefficients	t	Sig.
		B		Beta		
6	(Constant)	-14909192,59	3451163,21		-4,320	,000
	Budgetary grants to a municipality	37,720	4,415	,493	8,544	,000
	Revenues from personal income taxes	44,433	9,007	,239	4,933	,000
	Sale of tangible assets and immaterial goods	123,992	16,333	,160	7,592	,000
	Total local taxes	-22,404	3,141	-,188	-7,132	,000
	Long-term loans	20,153	6,372	,072	3,163	,002
	Tax charge	88,145	29,635	,052	2,974	,003

II. a) Results in a breakdown by statistical large regions (NUTS1)

Model Summary			
NUT1 Region	Number of iterations	R	R^2
Central Hungary	5	0,837	0,700
Transdanubia	9	0,783	0,613
Great Plain and North	7	0,872	0,761

Coefficients of the approximation equation

NUT1 Region	Number of iterations	Variables	Coefficients	Std. Error	Standardized Coefficients	t	Sig.
			B		Beta		
Central Hungary	5	(Constant)	-46986285,97	15372745,51		-3,056	,003
		Tax charge	3458,514	204,107	1,022	16,945	,000
		Interest revenues	-740,639	79,738	-,554	-9,288	,000
		Stock of money	-24,685	10,864	-,126	-2,272	,024
		Sale of tangible assets and immaterial goods	310,275	74,642	,265	4,157	,000
		Long-term loans	-48,310	16,693	-,166	-2,894	,004
Transdanubia	9	(Constant)	-290174,39	3556695,50		-,082	,935
		Sale of tangible assets and immaterial goods	203,160	18,404	,387	11,039	,000
		Long-term loans	61,014	7,402	,257	8,243	,000
		Short-term and liquid loans	62,627	18,585	,074	3,370	,001
		Revenues from personal income taxes	-40,009	13,507	-,211	-2,962	,003
		Budgetary grants to a municipality	21,282	5,944	,312	3,581	,000
		Municipal own source revenues	21,971	5,151	,599	4,265	,000
		Total local taxes	-56,690	7,901	-,623	-7,175	,000

NUT1 Region	Number of iterations	Variables	Coefficients	Std. Error	Standardized Coefficients	t	Sig.
			B		Beta		
Great Plain and North	7	(Constant)	-7128132,02	6240678,24		-1,142	,254
		Tax charge	473,592	58,186	,239	8,139	,000
		Interest revenues	-1111,161	147,028	-,363	-7,557	,000
		Stock of money	98,280	11,119	,317	8,839	,000
		Long-term loans	75,364	14,563	,244	5,175	,000
		Revenues from personal income taxes	-37,750	16,784	-,206	-2,249	,025
		Budgetary grants to a municipality	65,940	7,915	,845	8,331	,000
		Municipal own source revenues	-8,296	3,493	-,175	-2,375	,018

II. b) Results in a breakdown by statistical regions (NUTS2)

Model Summary			
NUT2 Region	Number of iterations	R	R^2
Central Hungary	5	0,837	0,700
Central Transdanubia	4	0,688	0,473
Western Hungary	9	0,964	0,929
Southern Transdanubia	10	0,945	0,894
Northern Hungary	9	0,927	0,859
Northern Great Plain	11	0,960	0,922
Southern Great Plain	6	0,826	0,681

Coefficients of the approximation equation

NUT2 Region	**Number of iterations**	**Variables**	**Coefficients**	**Std. Error**	**Standardized Coefficients**	**t**	**Sig.**
			B		**Beta**		
Central Hungary	5	(Constant)	-46986285,97	15372745,51		-3,056	,003
		Tax charge	3458,514	204,107	1,022	16,945	,000
		Interest revenues	-740,639	79,738	-,554	-9,288	,000
		Stock of money	-24,685	10,864	-,126	-2,272	,024
		Sale of tangible assets and immaterial goods	310,275	74,642	,265	4,157	,000
		Long-term loans	-48,310	16,693	-,166	-2,894	,004

NUT2 Region	Number of iterations	Variables	Coefficients	Std. Error	Standardized Coefficients	t	Sig.
			B		Beta		
Central Transdanubia	4	(Constant)	-14497555,47	12348681,17		-1,174	,241
		Sale of tangible assets and immaterial goods	474,613	48,053	,788	9,877	,000
		Short-term and liquid loans	438,787	72,671	,244	6,038	,000
		Total business taxes	-118,904	31,603	-1,303	-3,762	,000
		Total local taxes	112,207	35,582	1,073	3,153	,002
Western Hungary	9	(Constant)	-3075584,46	1299677,18		-2,366	,018
		Tax charge	-40,516	11,815	-,074	-3,429	,001
		Interest revenues	-209,765	72,436	-,124	-2,896	,004
		Stock of money	-85,733	9,147	-,687	-9,373	,000
		Sale of tangible assets and immaterial goods	-52,801	13,618	-,125	-3,877	,000
		Total business taxes	128,977	8,076	2,881	15,970	,000
		Total local taxes	-155,115	8,483	-3,402	-18,286	,000
		Municipal own source revenues	42,371	1,740	2,291	24,354	,000
Southern Transdanubia	10	(Constant)	-2549261,38	3096598,04		-,823	,411
		Interest revenues	876,479	186,862	,237	4,691	,000
		Stock of money	-52,138	14,654	-,237	-3,558	,000
		Sale of tangible assets and immaterial goods	93,098	19,945	,193	4,668	,000
		Long-term loans	79,251	11,225	,371	7,060	,000
		Short-term and liquid loans	89,460	17,411	,139	5,138	,000
		Total business taxes	-53,913	5,989	-,422	-9,002	,000
		Budgetary grants to a municipality	75,626	6,790	1,106	11,137	,000
		Revenues from personal income taxes	-72,162	14,637	-,423	-4,930	,000

NUT2 Region	Number of iterations	Variables	Coefficients	Std. Error	Standardized Coefficients	t	Sig.
			B		Beta		
Northern Hungary	9	(Constant)	-37818763,41	6620212,65		-5,713	,000
		Tax charge	-258,046	81,754	-,108	-3,156	,002
		Interest revenues	-971,183	478,944	-,172	-2,028	,043
		Stock of money	114,975	27,166	,286	4,232	,000
		Sale of tangible assets and immaterial goods	-182,892	85,329	-,109	-2,143	,032
		Short-term and liquid loans	-81,801	22,708	-,073	-3,602	,000
		Total business taxes	270,571	76,184	1,233	3,552	,000
		Total local taxes	-517,366	78,294	-2,400	-6,608	,000
		Municipal own source revenues	225,947	12,653	3,244	17,857	,000
		Revenues from personal income taxes	-258,992	20,858	-1,144	-12,417	,000
Northern Great Plain	11	(Constant)	-2019073,00	7037453,06		-,287	,774
		Interest revenues	1160,913	156,072	,368	7,438	,000
		Stock of money	-144,097	15,647	-,541	-9,209	,000
		Sale of tangible assets and immaterial goods	408,433	52,330	,492	7,805	,000
		Total business taxes	-124,091	18,495	-,930	-6,710	,000
		Budgetary grants to a municipality	34,945	11,511	,501	3,036	,003
		Municipal own source revenues	79,532	9,068	1,783	8,771	,000
		Revenues from personal income taxes	-120,114	28,525	-,717	-4,211	,000
Southern Great Plain	6	(Constant)	-45141153,08	15652889,82		-2,884	,004
		Interest revenues	-1227,144	269,429	-,673	-4,555	,000
		Stock of money	105,529	29,157	,404	3,619	,000
		Short-term and liquid loans	104,387	51,052	,163	2,045	,042
		Revenues from personal income taxes	138,392	11,499	,918	12,035	,000

II. c) Results in a breakdown by the Author's own classification

Model Summary			
Breakdown by the author	Number of iterations	R	R^2
West	8	0,946	0,895
Centre	10	0,841	0,707
East	3	0,884	0,781

Coefficients of the approximation equation

Breakdown by the author	Number of iterations	Variables	Coefficients	Std. Error	Standardized Coefficients	t	Sig.
			B		Beta		
West	8	(Constant)	1813175,44	1590467,99		1,140	,254
		Long-term loans	107,652	5,392	,516	19,965	,000
		Sale of tangible assets and immaterial goods	148,210	11,940	,332	12,413	,000
		Budgetary grants to a municipality	59,044	2,922	1,100	20,210	,000
		Total local taxes	-48,804	4,671	-,618	-10,448	,000
		Revenues from personal income taxes	-70,246	6,783	-,475	-10,356	,000
		Stock of money	-45,730	4,439	-,255	-10,302	,000
		Tax charge	-85,230	16,083	-,088	-5,299	,000
		Municipal own source revenues	11,329	2,723	,385	4,161	,000

Breakdown by the author	Number of iterations	Variables	Coefficients	Std. Error	Standardized Coefficients	t	Sig.
			B		Beta		
Centre	10	(Constant)	-53224897,23	6917231,70		-7,695	,000
		Long-term loans	-82,851	12,008	-,243	-6,900	,000
		Budgetary grants to a municipality	30,825	7,548	,305	4,084	,000
		Total local taxes	-79,957	26,778	-,603	-2,986	,003
		Revenues from personal income taxes	-244,687	20,357	-1,024	-12,020	,000
		Stock of money	93,140	11,710	,307	7,954	,000
		Tax charge	-169,515	75,152	-,072	-2,256	,024
		Municipal own source revenues	188,541	8,274	3,165	22,788	,000
		Total business taxes	-173,671	23,747	-1,442	-7,313	,000
East	3	(Constant)	-14182002,33	7553153,07		-1,878	,061
		Long-term loans	99,841	14,066	,387	7,098	,000
		Budgetary grants to a municipality	52,772	2,544	,770	20,742	,000
		Interest revenues	-671,713	112,673	-,283	-5,962	,000

III. Study of only those municipalities in settlements that received EU funds, disregarding geographical location

Model Summary		
Number of iterations	R	R^2
5	0,807	0,652

Coefficients of the approximation equation

Number of iterations	**Variables**	**Coefficients**	**Std. Error**	**Standardized Coefficients**	**t**	**Sig.**
		B		**Beta**		
5	(Constant)	2652786,80	9708292,87		,273	,785
	Revenues from personal income taxes	68,175	15,247	,359	4,471	,000
	Sale of tangible assets and immaterial goods	154,596	28,469	,200	5,430	,000
	Budgetary grants to a municipality	28,698	7,679	,372	3,737	,000
	Total business taxes	-19,266	4,988	-,170	-3,862	,000
	Tax charge	108,380	49,682	,064	2,181	,029

IV. Study of only those municipalities in settlements that received EU funds, taking geographical location into account

IV. a) Breakdown by statistical large regions (NUTS1)

Model Summary			
NUT1 Region	Number of iterations	R	R^2
Central Hungary	4	0,864	0,747
Transdanubia	5	0,788	0,621
Great Plain and North	6	0,870	0,757

Coefficients of the approximation equation

NUT1 Region	Number of iterations	Variables	Coefficients	Std. Error	Standardized Coefficients	t	Sig.
			B		Beta		
Central Hungary	4	(Constant)	-43798016,85	41258426,79		-1,062	,292
		Tax charge	3853,900	331,362	1,067	11,630	,000
		Interest revenues	-903,157	119,094	-,682	-7,584	,000
		Long-term loans	-92,623	28,562	-,271	-3,243	,002
		Sale of tangible assets and immaterial goods	369,111	130,087	,288	2,837	,006
Transdanubia	5	(Constant)	20510244,92	11793742,52		1,739	,083
		Long-term loans	55,977	13,135	,234	4,262	,000
		Sale of tangible assets and immaterial goods	262,216	34,586	,495	7,582	,000
		Short-term and liquid loans	76,539	34,804	,088	2,199	,028
		Total business taxes	-39,295	9,105	-,463	-4,316	,000
		Municipal own source revenues	16,888	4,928	,456	3,427	,001

NUT1 Region	Number of iterations	Variables	Coefficients	Std. Error	Standardized Coefficients	t	Sig.
			B		Beta		
Great Plain and North	6	(Constant)	24947414,68	14056282,19		1,775	,076
		Tax charge	441,149	86,617	,225	5,093	,000
		Interest revenues	-1276,355	202,363	-,421	-6,307	,000
		Long-term loans	83,504	21,522	,273	3,880	,000
		Budgetary grants to a municipality	64,345	11,017	,824	5,840	,000
		Stock of money	104,255	17,023	,336	6,125	,000
		Revenues from personal income taxes	-63,230	28,194	-,342	-2,243	,025

IV. b) Breakdown by statistical regions (NUTS2)

Model Summary			
NUT2 Region	Number of iterations	R	R^2
Central Hungary	4	0,864	0,747
Central Transdanubia	4	0,698	0,487
Western Hungary	11	0,972	0,945
Southern Transdanubia	5	0,955	0,911
Northern Hungary	7	0,948	0,899
Northern Great Plain	4	0,956	0,914
Southern Great Plain	2	0,807	0,652

Coefficients of the approximation equation

NUT2 Region	Number of iterations	Variables	Coefficients	Std. Error	Standardized Coefficients	t	Sig.
			B		Beta		
Central Hungary	4	(Constant)	-43798016,85	41258426,79		-1,062	,292
		Tax charge	3853,900	331,362	1,067	11,630	,000
		Interest revenues	-903,157	119,094	-,682	-7,584	,000
		Long-term loans	-92,623	28,562	-,271	-3,243	,002
		Sale of tangible assets and immaterial goods	369,111	130,087	,288	2,837	,006
Central Transdanubia	4	(Constant)	-2904781,87	38502283,75		-,075	,940
		Sale of tangible assets and immaterial goods	538,638	87,973	,890	6,123	,000
		Short-term and liquid loans	509,825	136,218	,260	3,743	,000
		Total business taxes	-151,670	57,855	-1,655	-2,622	,010
		Total local taxes	139,127	64,368	1,318	2,161	,033

NUT2 Region	Number of iterations	Variables	Coefficients	Std. Error	Standardized Coefficients	t	Sig.
			B		Beta		
Western Hungary	11	(Constant)	7323127,86	3906319,30		1,875	,062
		Interest revenues	-232,207	114,365	-,133	-2,030	,044
		Total business taxes	166,042	15,086	3,737	11,006	,000
		Total local taxes	-184,068	14,042	-4,068	-13,108	,000
		Stock of money	-82,481	13,410	-,651	-6,151	,000
		Municipal own source revenues	35,480	2,763	1,920	12,843	,000
Southern Transdanubia	5	(Constant)	11066520,41	10450716,70		1,059	,291
		Long-term loans	145,990	19,919	,683	7,329	,000
		Total local taxes	-49,207	13,647	-,385	-3,606	,000
		Stock of money	-64,125	18,387	-,293	-3,488	,001
		Municipal own source revenues	17,279	7,668	,408	2,253	,026
		Budgetary grants to a municipality	35,048	8,662	,510	4,046	,000
Northern Hungary	7	(Constant)	-8515454,65	16866337,24		-,505	,614
		Tax charge	-389,836	111,557	-,164	-3,494	,001
		Short-term and liquid loans	-80,675	29,562	-,072	-2,729	,007
		Total business taxes	583,593	119,522	2,437	4,883	,000
		Total local taxes	-797,290	115,149	-3,433	-6,924	,000
		Revenues from personal income taxes	-252,642	42,604	-1,112	-5,930	,000
		Municipal own source revenues	262,912	25,391	3,737	10,354	,000
		Budgetary grants to a municipality	-57,586	23,875	-,604	-2,412	,017

NUT2 Region	Number of iterations	Variables	Coefficients	Std. Error	Standardized Coefficients	t	Sig.
			B		Beta		
Northern Great Plain	4	(Constant)	18529049,67	13830128,10		1,340	,182
		Tax charge	755,772	113,762	,324	6,643	,000
		Sale of tangible assets and immaterial goods	172,575	57,780	,212	2,987	,003
		Total business taxes	-46,553	17,581	-,354	-2,648	,009
		Municipal own source revenues	36,995	6,812	,836	5,431	,000
Southern Great Plain	2	(Constant)	-25907221,86	30115343,80		-,860	,391
		Revenues from personal income taxes	180,343	24,194	1,195	7,454	,000
		Municipal own source revenues	-13,460	5,139	-,420	-2,619	,010

IV. c) Breakdown by the Author's own classification

Model Summary			
Breakdown by the author	Number of iterations	R	R^2
West	8	0,958	0,918
Centre	9	0,865	0,748
East	7	0,894	0,799

Coefficients of the approximation equation

Breakdown by the author	**Number of iterations**	**Variables**	**Coefficients**	**Std. Error**	**Standardized Coefficients**	**t**	**Sig.**
			B		**Beta**		
West	8	(Constant)	17881199,16	5425919,83		3,296	,001
		Long-term loans	106,119	11,057	,506	9,597	,000
		Sale of tangible assets and immaterial goods	169,458	22,381	,375	7,572	,000
		Budgetary grants to a municipality	70,233	5,899	1,304	11,907	,000
		Total local taxes	-37,976	4,737	-,484	-8,017	,000
		Stock of money	-75,804	10,848	-,418	-6,988	,000
		Revenues from personal income taxes	-58,945	12,431	-,389	-4,742	,000
		Tax charge	-92,469	30,936	-,097	-2,989	,003
		Interest revenues	302,983	128,543	,111	2,357	,019

Breakdown by the author	Number of iterations	Variables	Coefficients	Std. Error	Standardized Coefficients	t	Sig.
			B		Beta		
Centre	9	(Constant)	-58405407,75	16914781,308		-3,453	,001
		Long-term loans	-104,119	19,548	-,298	-5,326	,000
		Stock of money	119,297	18,317	,384	6,513	,000
		Revenues from personal income taxes	-291,245	28,024	-1,192	-10,393	,000
		Tax charge	-387,047	118,564	-,164	-3,264	,001
		Interest revenues	-301,540	118,125	-,102	-2,553	,011
		Municipal own source revenues	245,800	14,004	4,034	17,553	,000
		Total business taxes	-295,461	18,112	-2,401	-16,313	,000
East	7	(Constant)	17325007,06	15917549,87		1,088	,277
		Total local taxes	413,833	75,582	3,224	5,475	,000
		Revenues from personal income taxes	153,658	15,492	,953	9,919	,000
		Tax charge	507,494	106,508	,295	4,765	,000
		Municipal own source revenues	-43,059	7,331	-1,126	-5,873	,000
		Total business taxes	-305,841	73,350	-2,428	-4,170	,000

Annex 15: Testing results for Hypothesis H5

a) Connections between settlement structure and EU funds by large regions

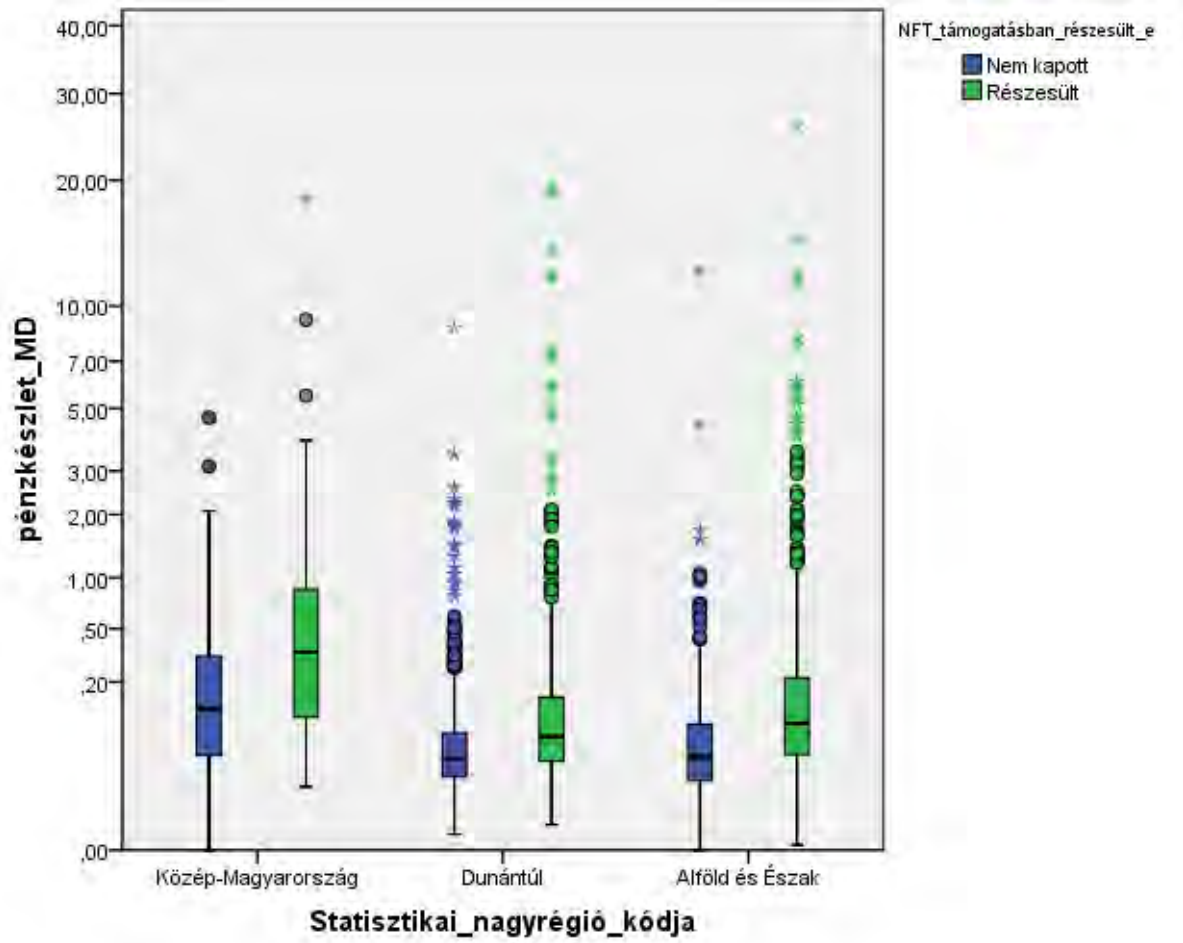
NUTS1 Region	Number of inhabitants	Did the municipality receive EU funding in the programming period 2004-2006?	Count	Arány
Central Hungary	less than 500 inhabitants	No	6	100,0%
		Yes	0	,0%
	500 to 4999 inhabitants	No	84	73,7%
		Yes	30	26,3%
	5000 to 9999 inhabitants	No	17	58,6%
		Yes	12	41,4%
	10000 to 49999 inhabitants	No	12	32,4%
		Yes	25	67,6%
	more than 50000 inhabitants	No	0	,0%
		Yes	1	100,0%
Transdanubia	less than 500 inhabitants	No	658	83,8%
		Yes	127	16,2%
	501 to 4999 inhabitants	No	548	64,6%
		Yes	300	35,4%
	5001 to 9999 inhabitants	No	10	30,3%
		Yes	23	69,7%
	10001 to 49999 inhabitants	No	9	26,5%
		Yes	25	73,5%
	more than 50000 inhabitants	No	0	,0%
		Yes	11	100,0%
Great Plain and North	less than 500 inhabitants	No	202	82,4%
		Yes	43	17,6%
	502 to 4999 inhabitants	No	478	55,3%
		Yes	386	44,7%
	5002 to 9999 inhabitants	No	14	17,1%
		Yes	68	82,9%
	10002 to 49999 inhabitants	No	5	9,3%
		Yes	49	90,7%
	more than 50000 inhabitants	No	0	,0%
		Yes	8	100,0%

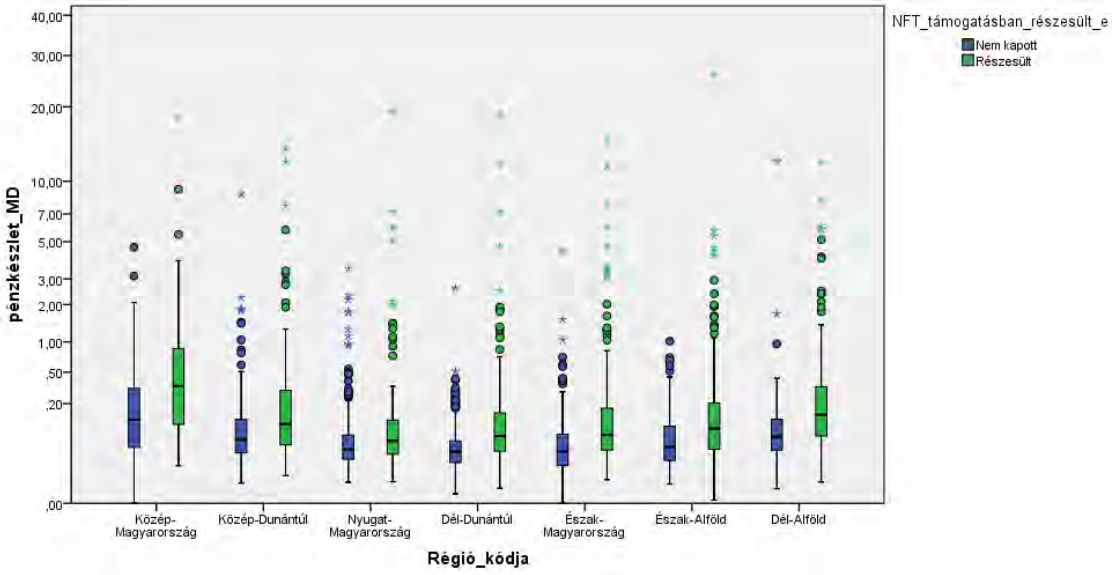
Vocabulary to Annex 15. b)

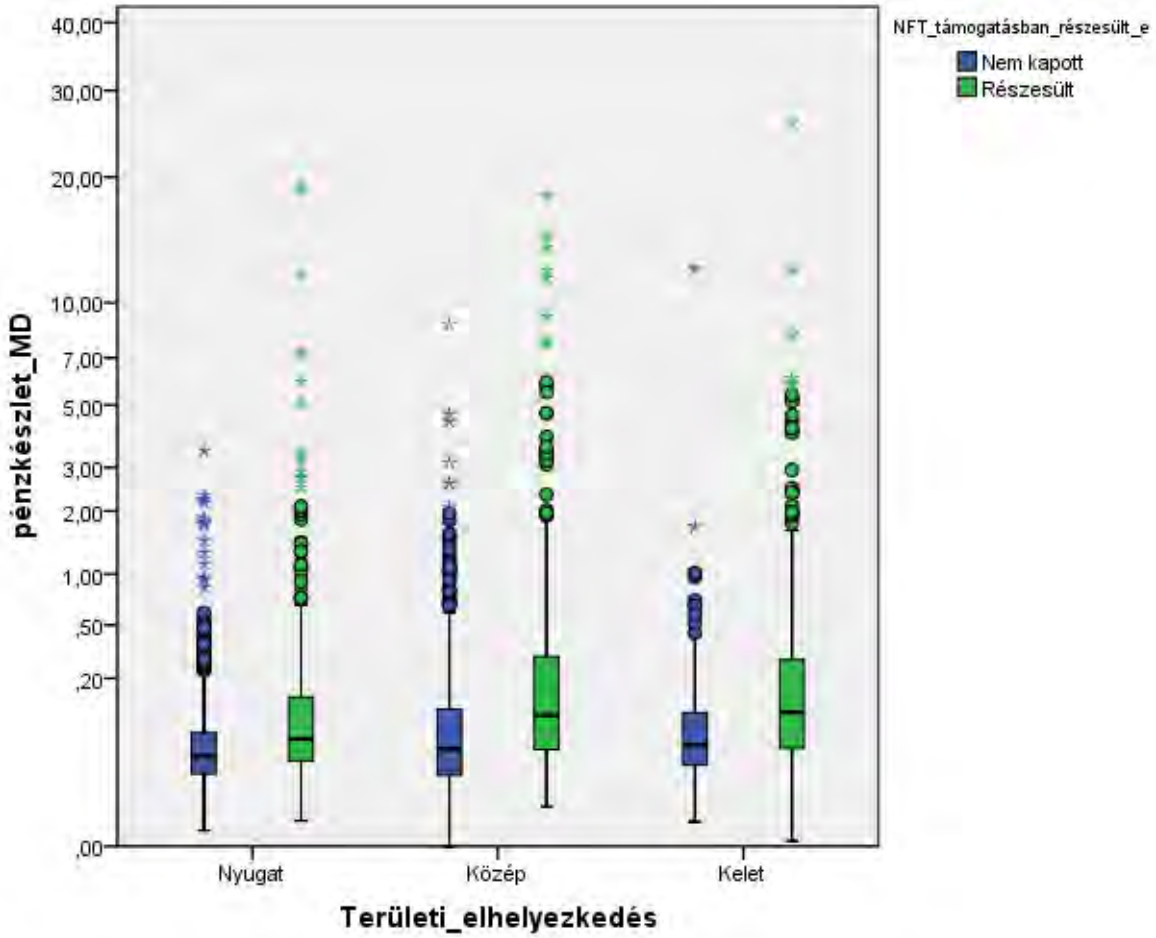
Identification in Annex	English term
adóbírság_MD	Tax charge
Alföld és Észak	Great Plain and North
Dél-Alföld	Southern Great Plain
Dél-Dunántúl	Southern Transdanubia
Dunántúl	Transdanubia
Észak-Alföld	Northern Great Plain
Észak-Magyarország	Northern Hungary
helyiadoössz_MD	Total local taxes
hosszúhitel_MD	Long-term loans
IPAössz_MD	Total business taxes
kamatbev_MD	Interest revenues
kapott	The municipality received EU funding in the programming period 2004-2006
Kelet	East
Költségvetési_tám_MD	Budgetary grants to a municipality
Közép	Centre
Közép-Dunántúl	Central Transdanubia
Közép-Magyarország	Central Hungary
nem kapott	The municipality did not receive EU funding in programming period 2004-2006
Nyugat	West
Nyugat-Magyarország	Western Hungary
pénzkészlet_MD	Stock of money
Régió_kódja	Code of the NUTS2 region
rövidhitel_MD	Short-term and liquid loans
sajátbev_MD	Municipal own soure revenues
Statisztikai_nagyrégió_kódja	Code of the NUTS1 large region
Szja_MD	Revenues from personal income taxes
Teért_MD	Sale of tangible assets and immaterial goods
Területi elhelyezkedés	Geographical location (breakdown by the author)

b) Display of variables under examination in a territorial breakdown

Stock of money at the end of the research period



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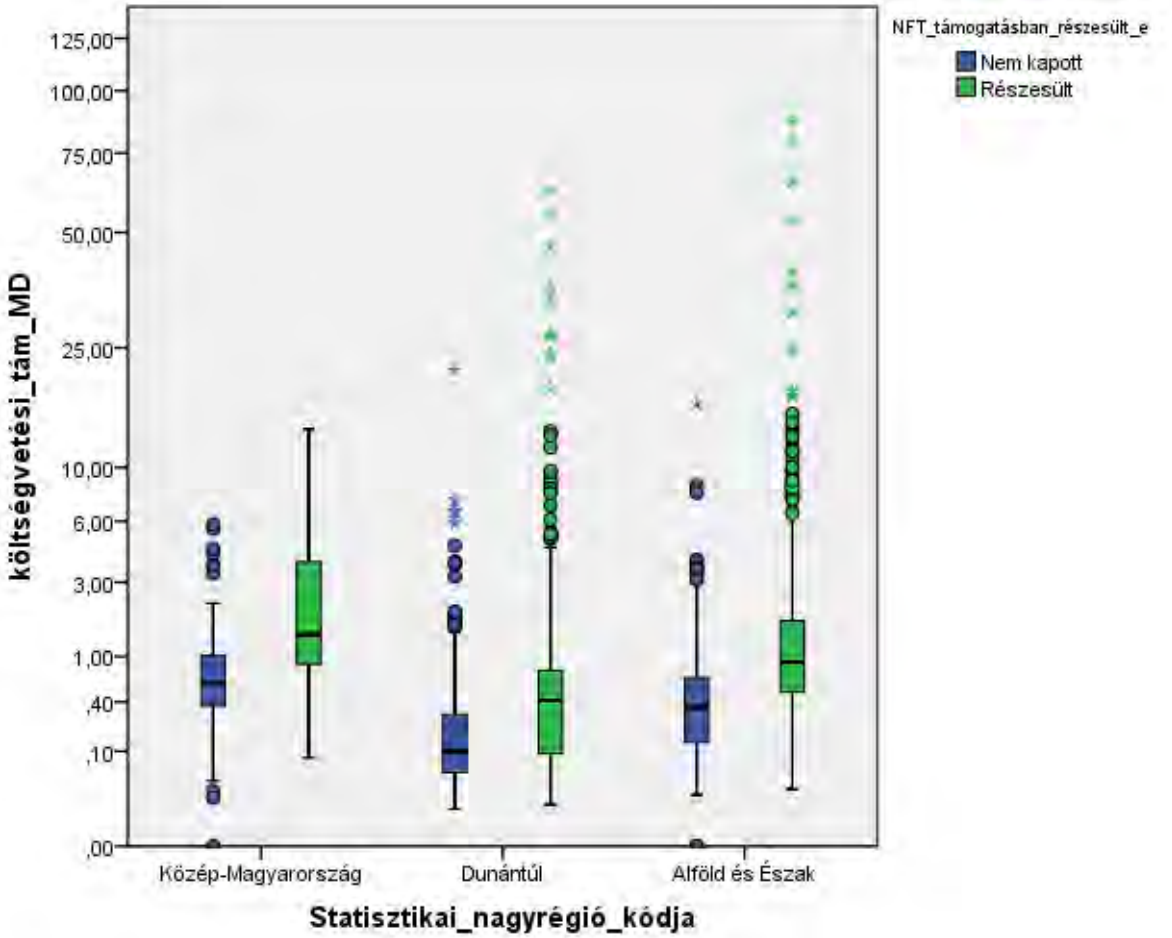
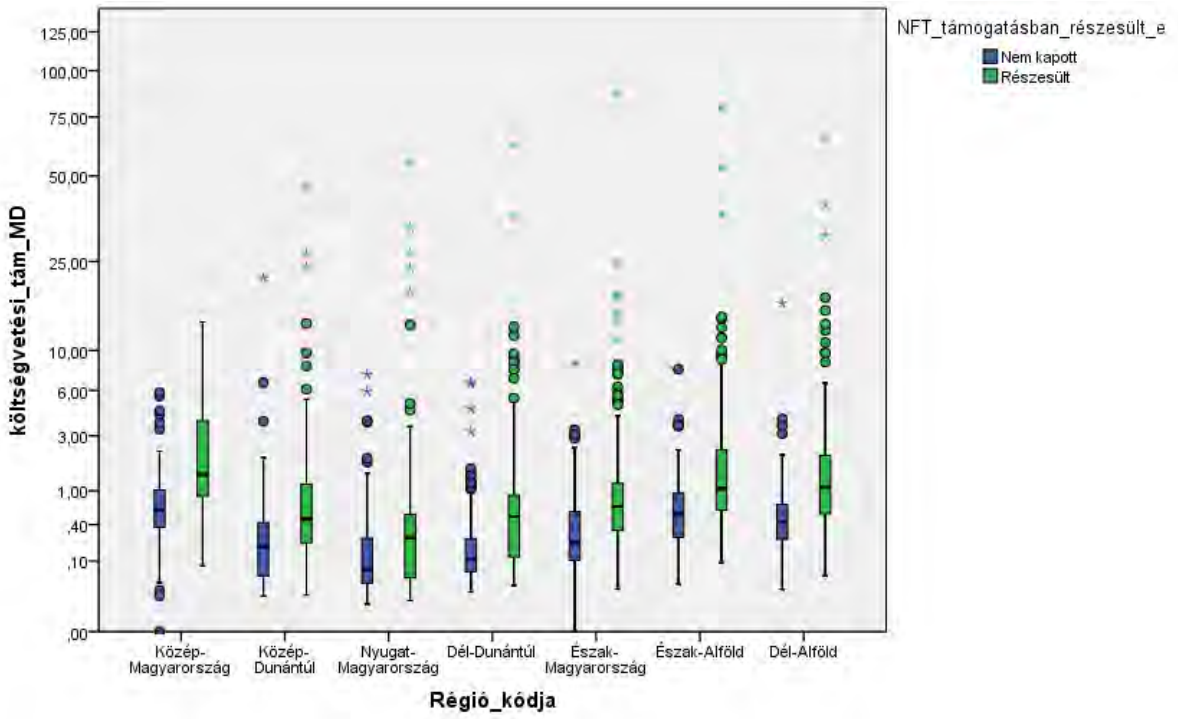
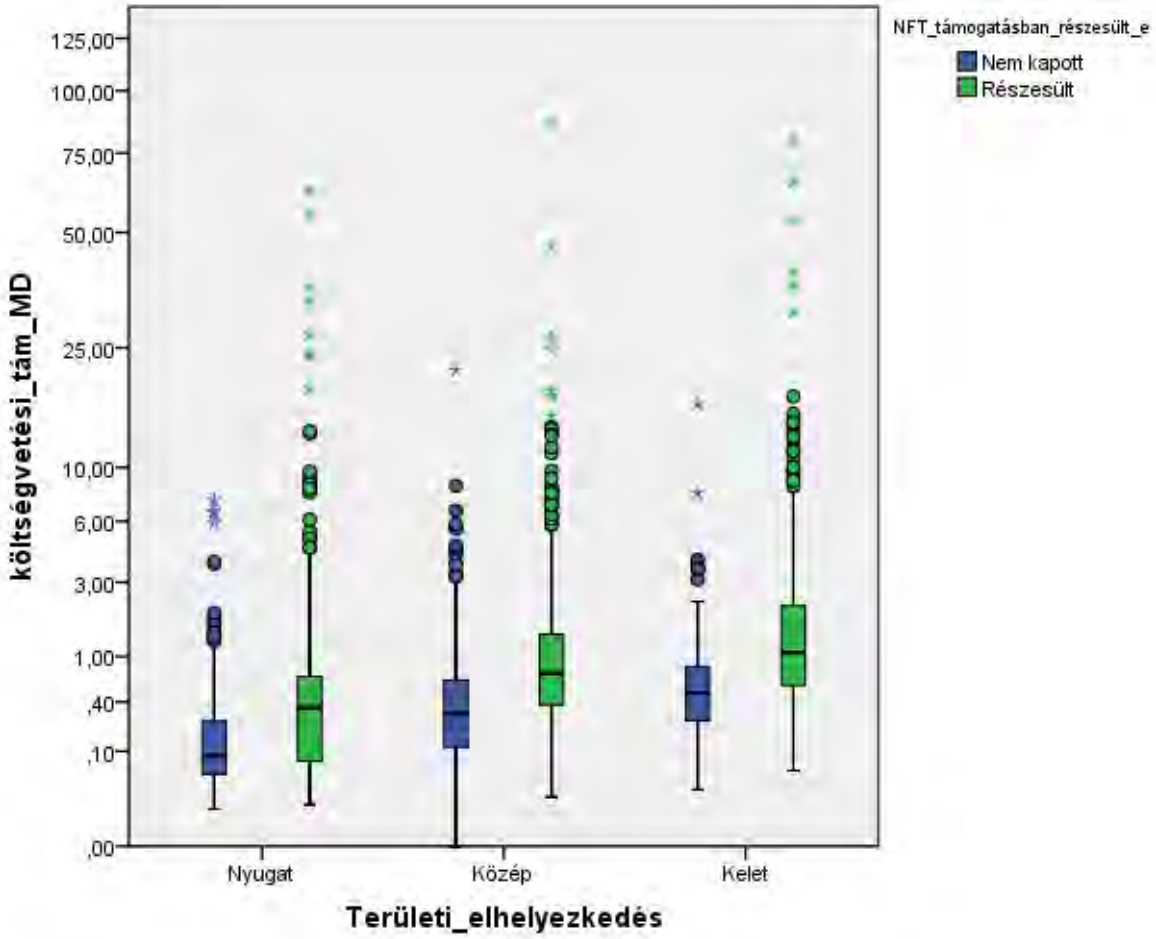
7,00
5,00
3,00
2,00
1,00
,50
,20
,00
Nyugat
Közép
Kelet
Területi_elhelyezkedés

Budgetary grants to a municipality



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Részesült
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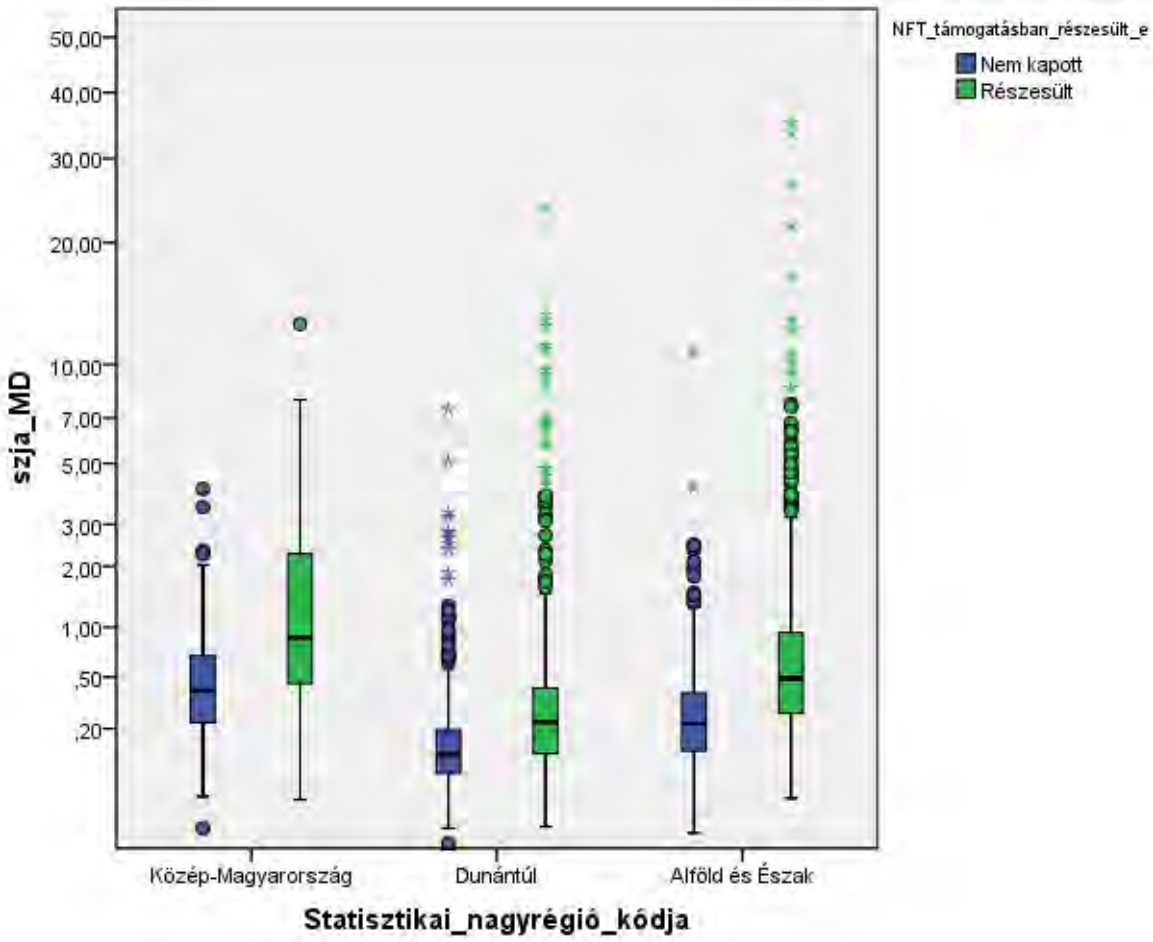
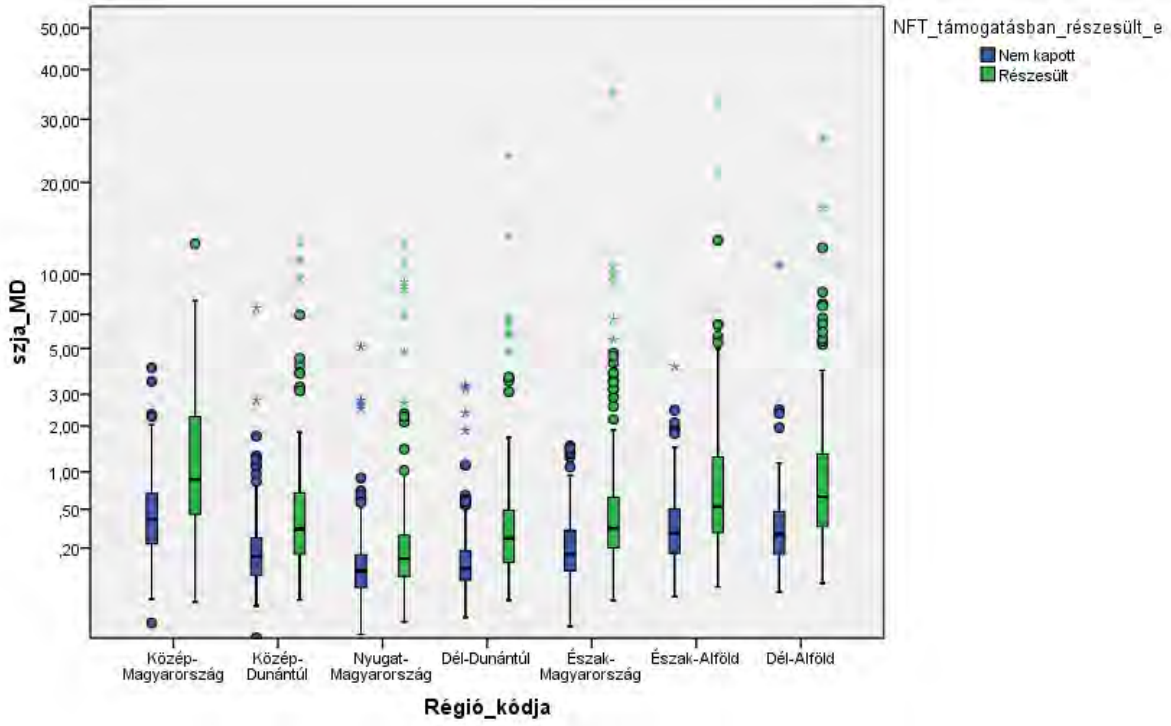
75,00
50,00
25,00
10,00
6,00
3,00
1,00
,40
,10
,00
Nyugat
Közép
Kelet
Területi_elhelyezkedés

Revenues from personal income tax




NFT_támogatásban_részesült_e
Nem kapott
Részesült
szja_MD
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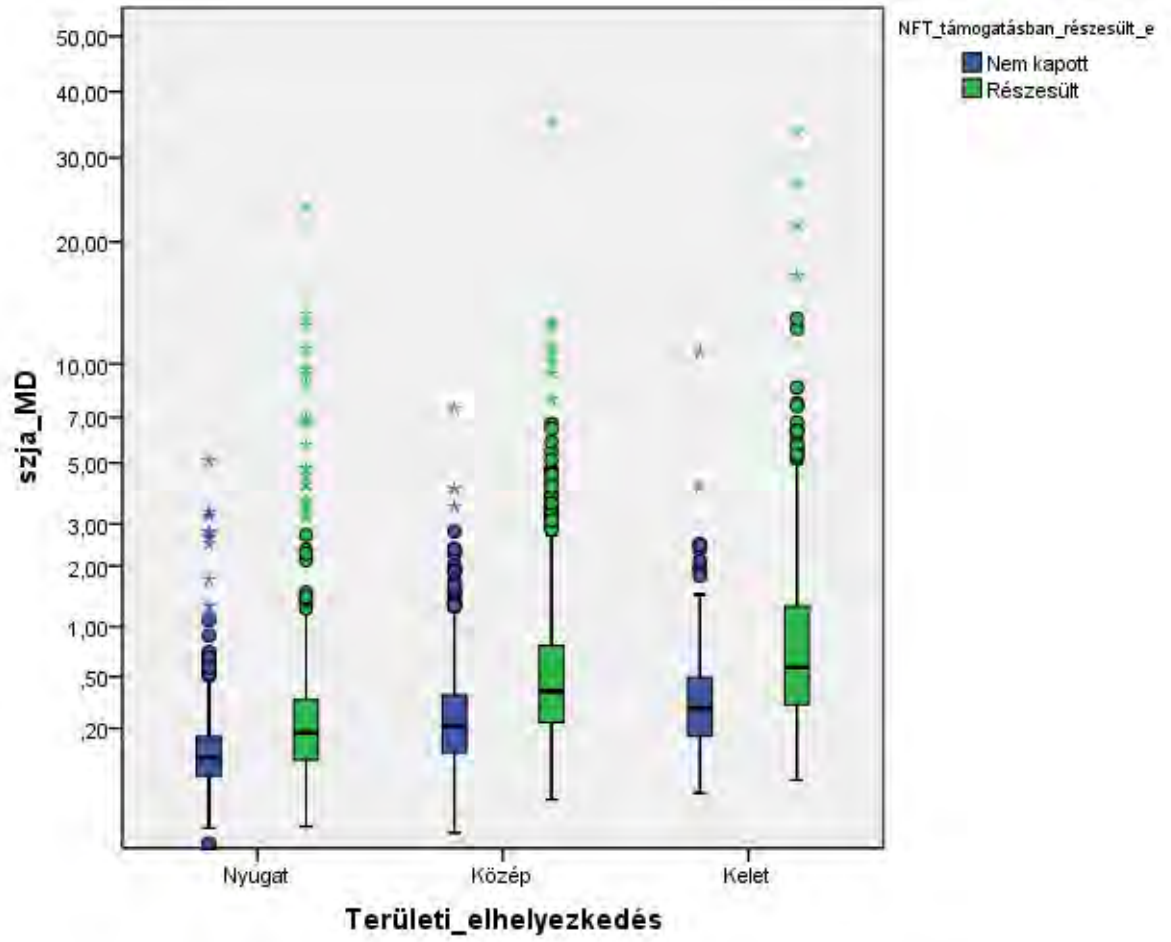
30,00
20,00
10,00
7,00
5,00
3,00
2,00
1,00
,50
,20
Közép-Magyarország
Közép-Dunántúl
Nyugat-Magyarország
Dél-Dunántúl
Észak-Magyarország
Észak-Alföld
Dél-Alföld
Régió_kódja


NFT_támogatásban_részesült_e
Nem kapott
Részesült
szja_MD
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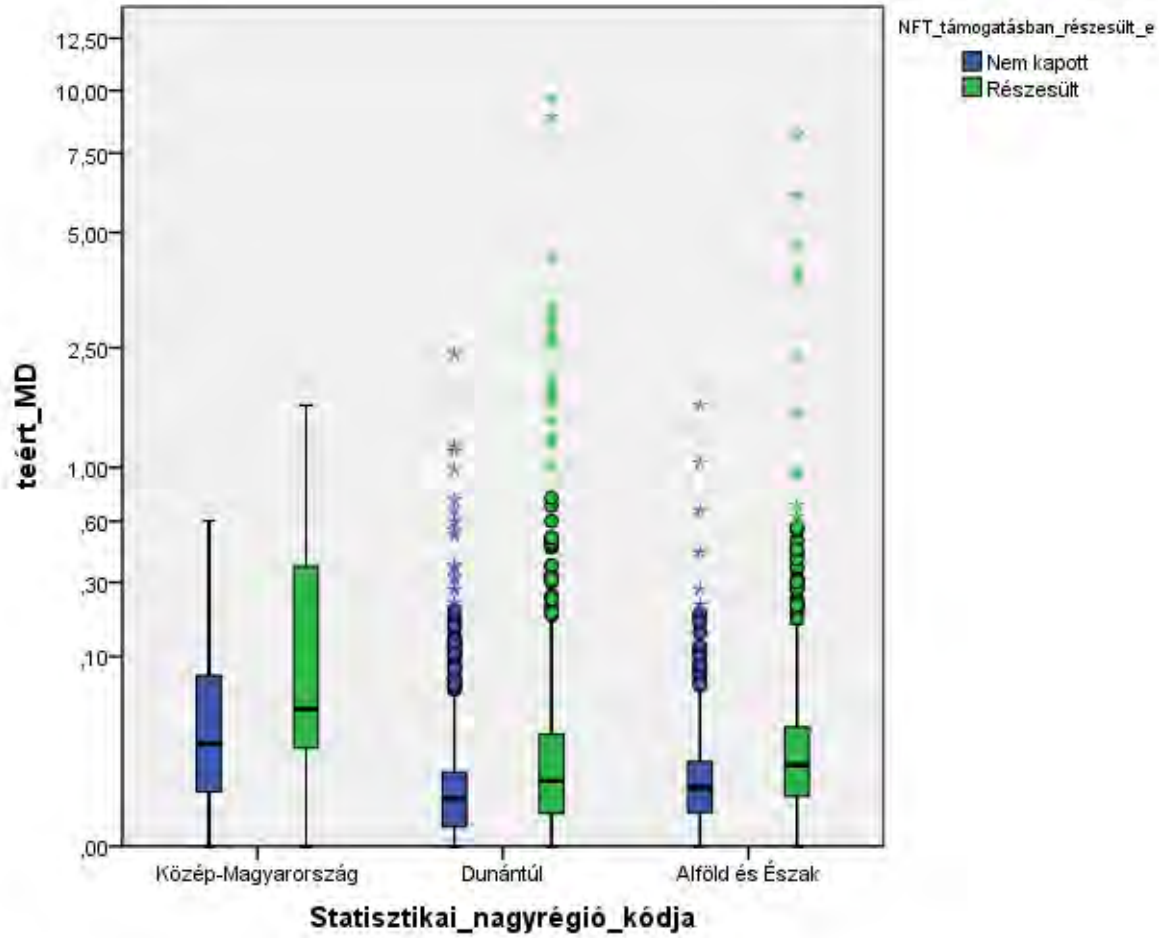
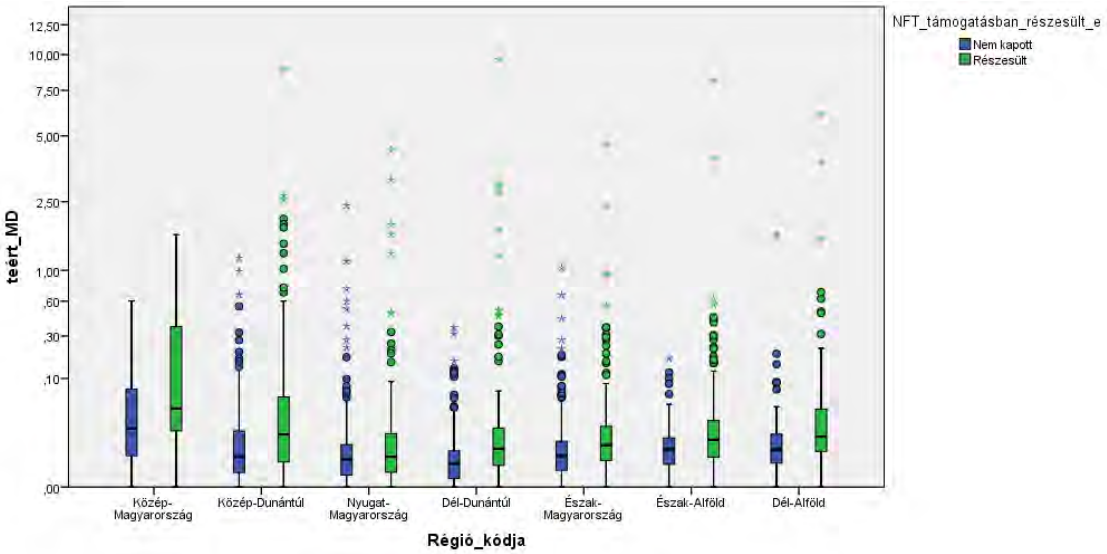
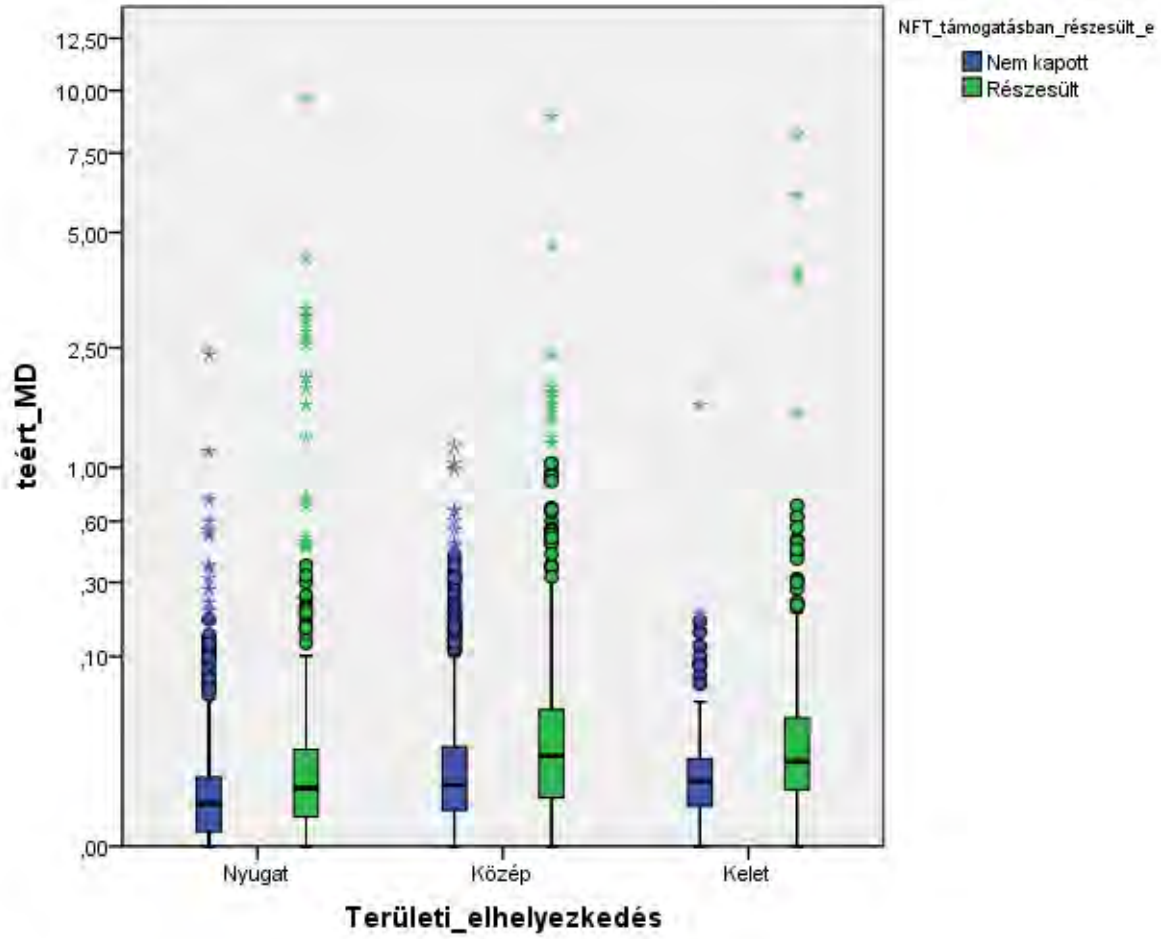
40,00
30,00
20,00
10,00
7,00
5,00
3,00
2,00
1,00
,50
,20
Nyugat
Közép
Kelet
Területi_elhelyezkedés

Sale of tangible assets and immaterial goods






NFT_támogatásban_részesült_e
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Részesült
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5,00
2,50
1,00
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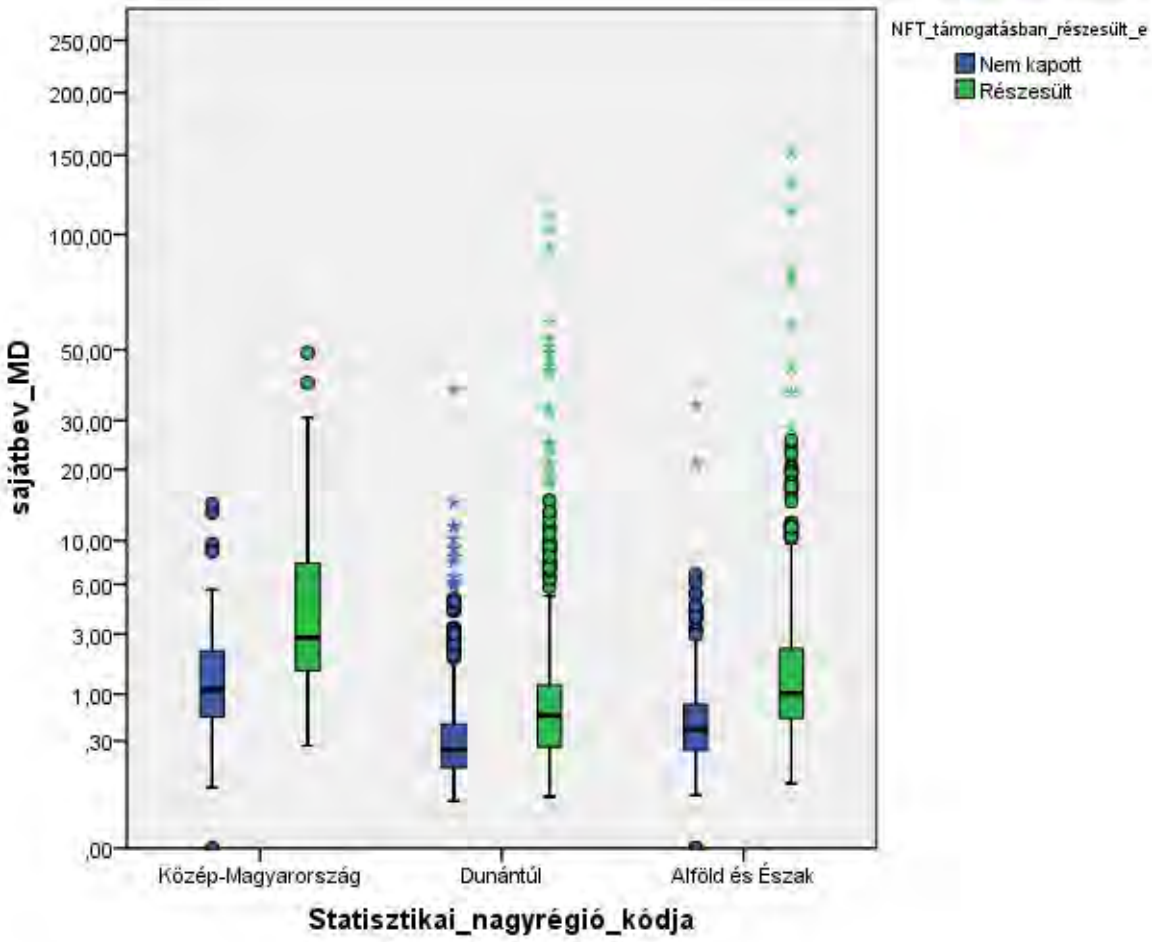
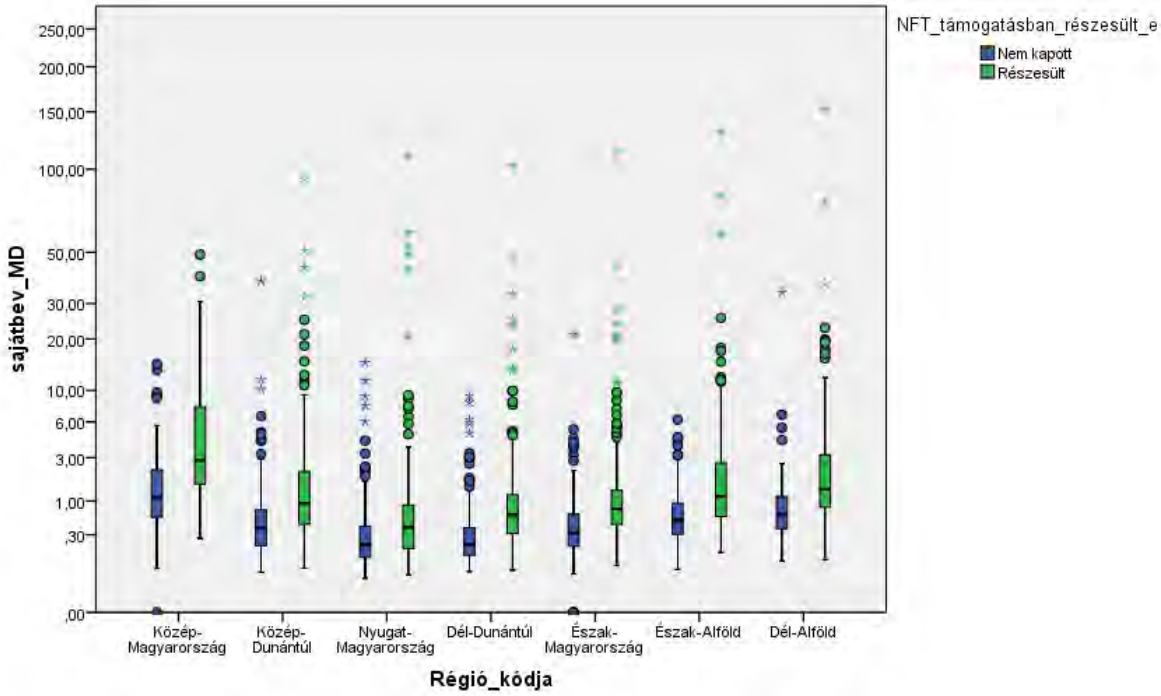
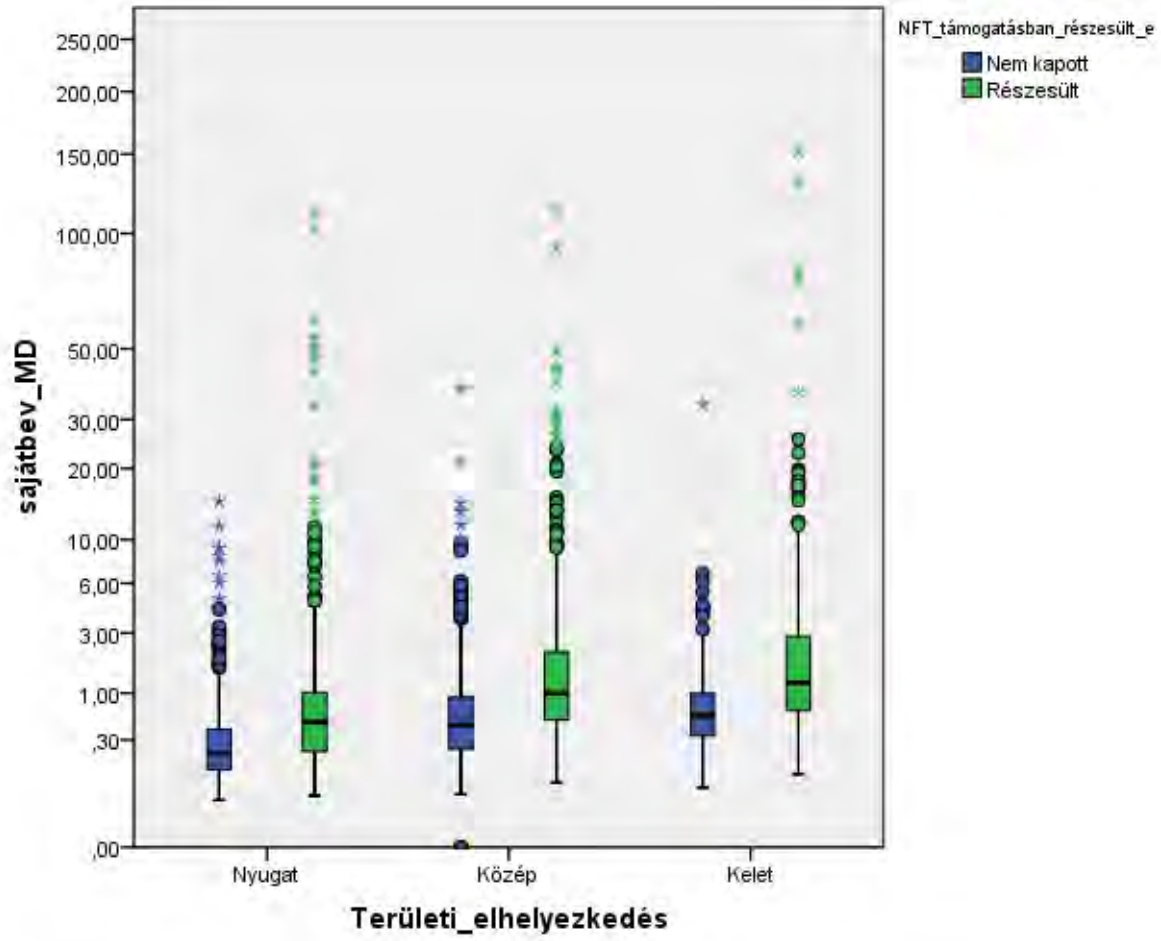
,30
,10
,00
teért_MD
Nyugat
Közép
Kelet
Területi_elhelyezkedés

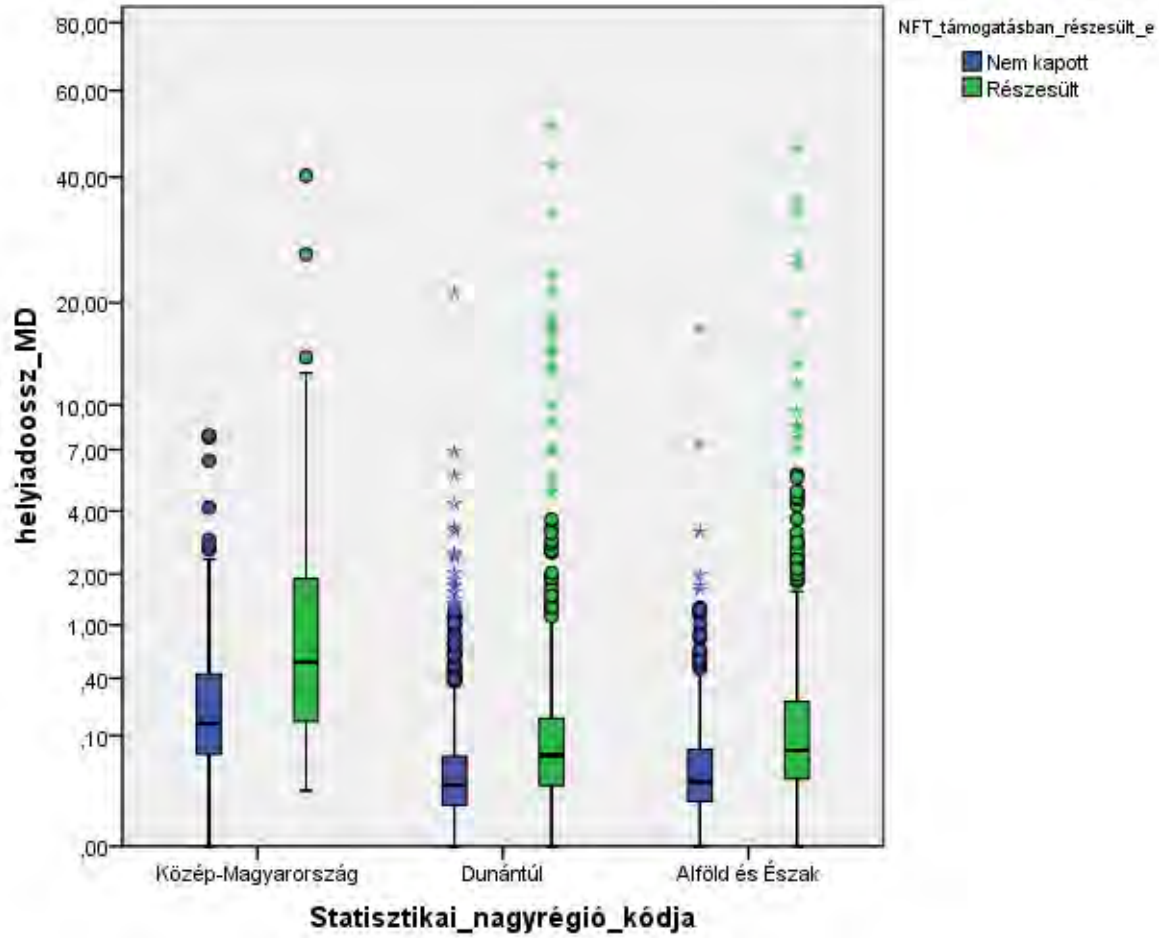
Municipal own source revenues

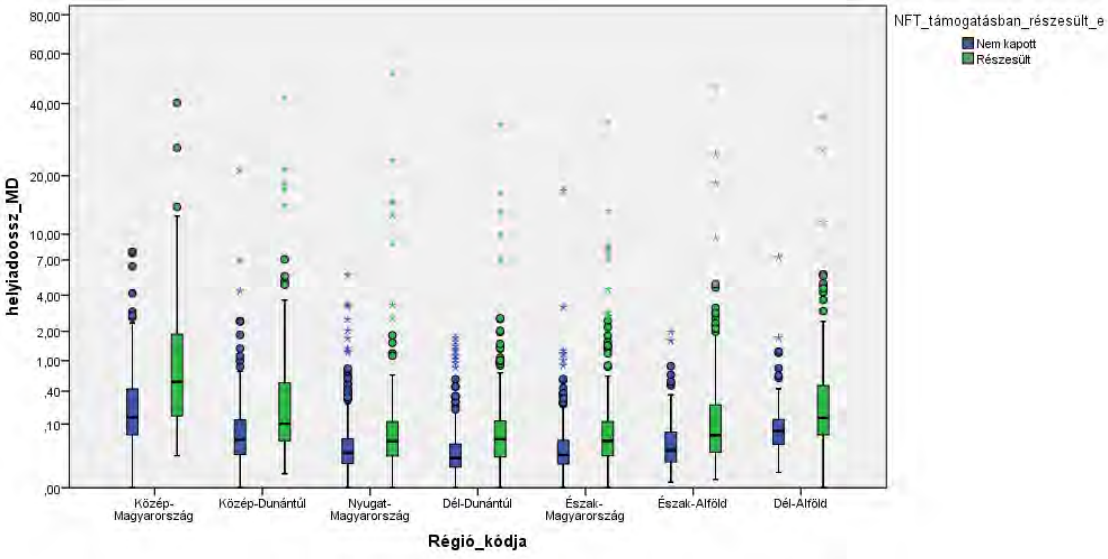



NFT_támogatásban_részesült_e
Nem kapott
Részesült
sajátbev_MD
250,00
200,00
150,00
100,00
50,00
30,00
20,00
10,00
6,00
3,00
1,00
,30
,00
Közép-Magyarország
Közép-Dunántúl
Nyugat-Magyarország
Dél-Dunántúl
Észak-Magyarország
Észak-Alföld
Dél-Alföld
Régió_kódja

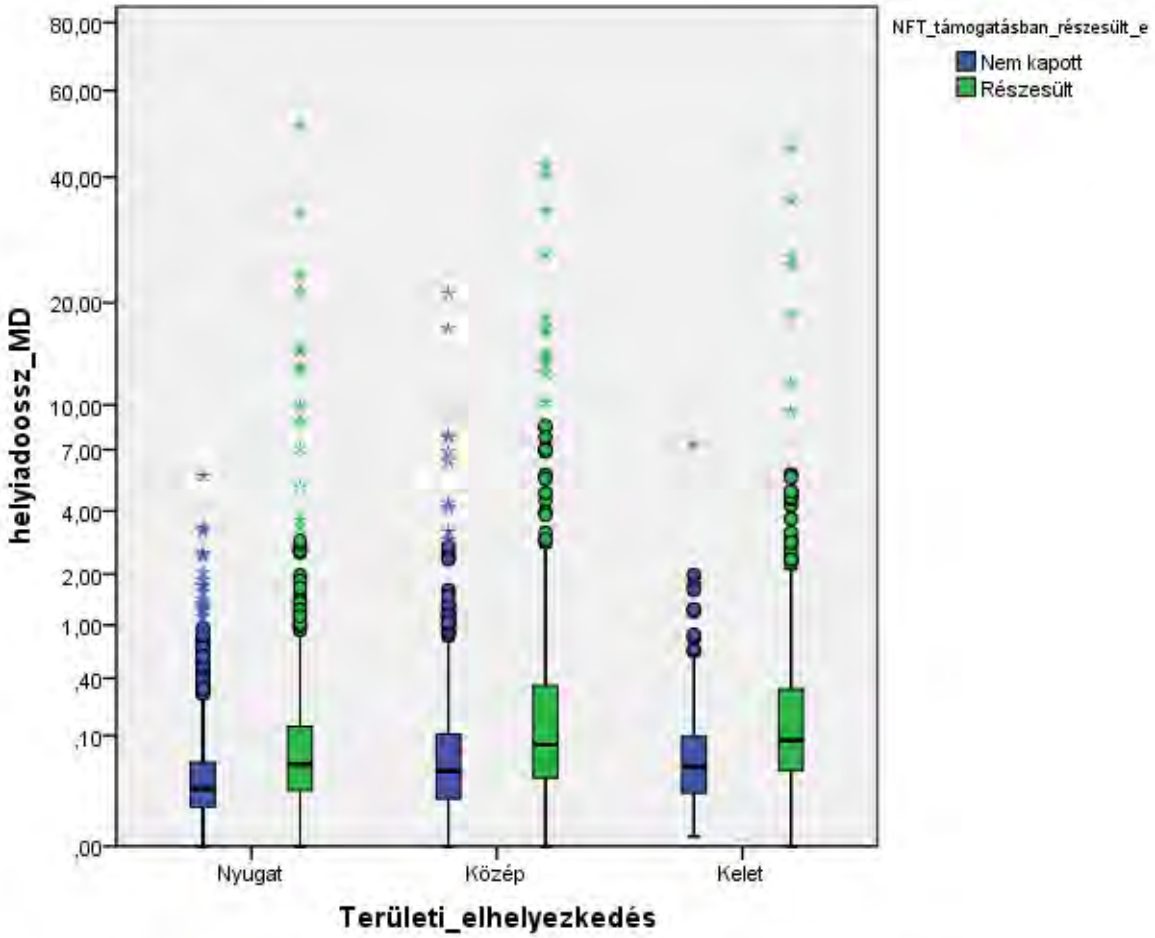

NFT_támogatásban_részesült_e
Nem kapott
Részesült
sajátbev_MD
250,00
200,00
150,00
100,00
50,00
30,00
20,00
10,00
6,00
3,00
1,00
,30
,00
Nyugat
Közép
Kelet
Területi_elhelyezkedés

***Total local taxes*[169]**





[169] Only the settlements with a positive amount of local taxes are displayed on the figure.


NFT_támogatásban_részesült_e
Nem kapott
Részesült
helyiadoossz_MD
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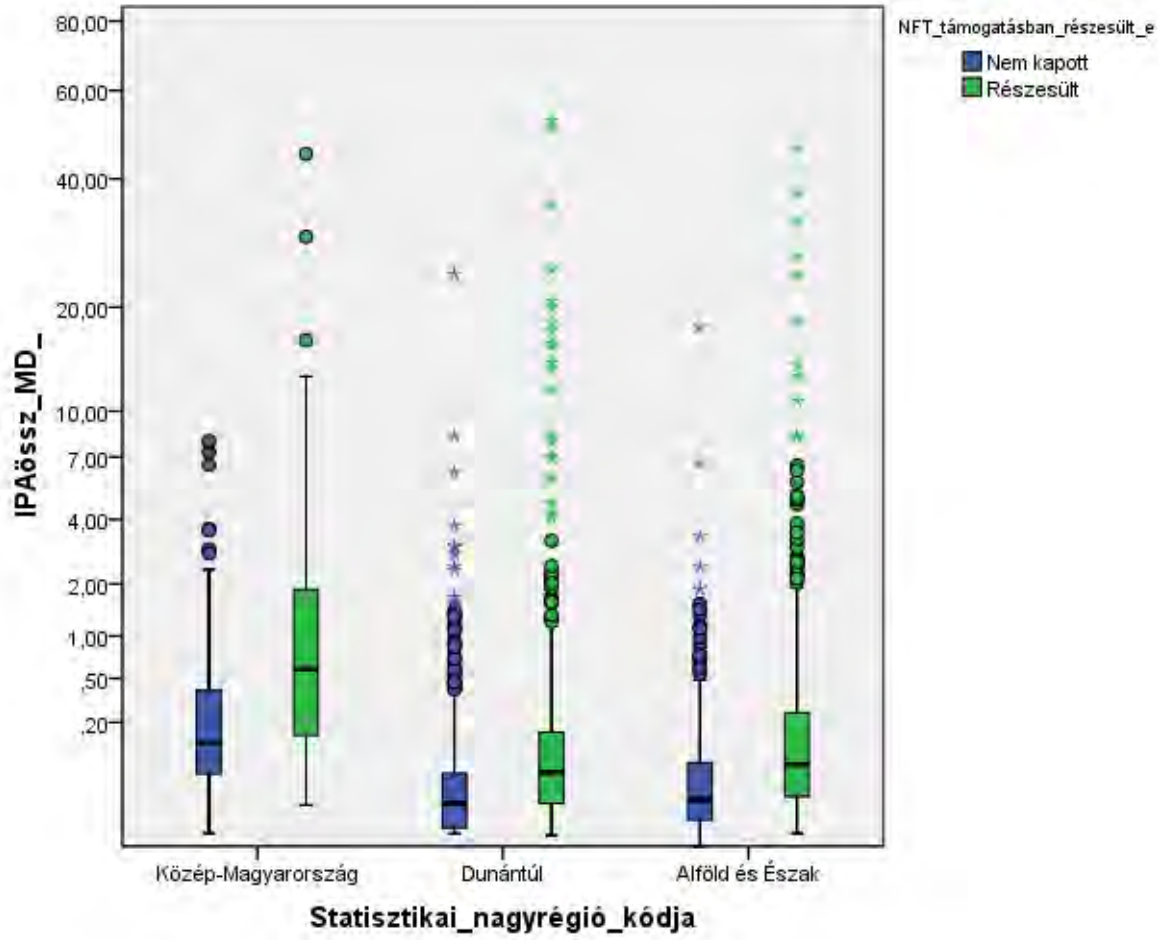
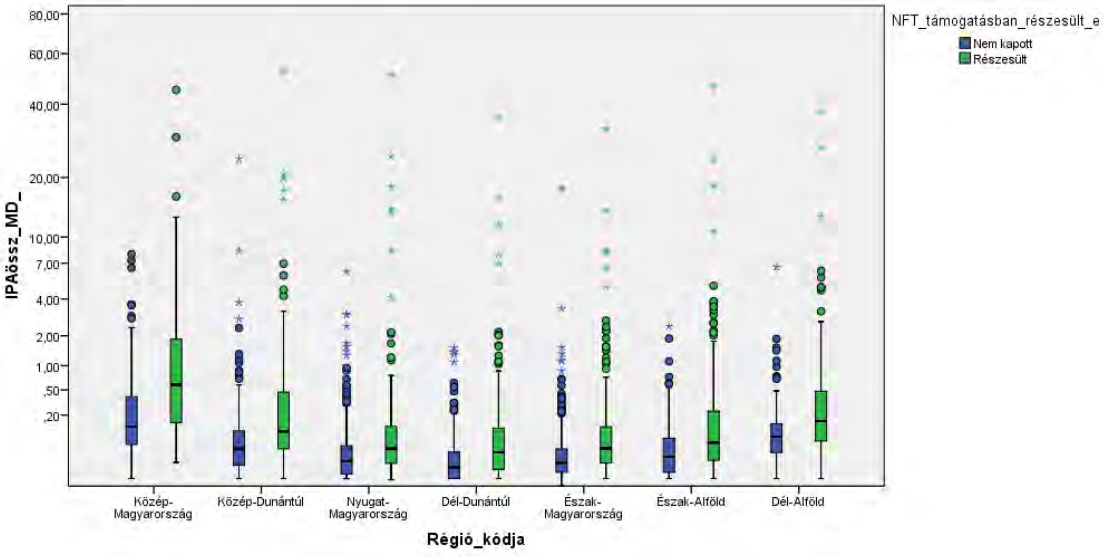
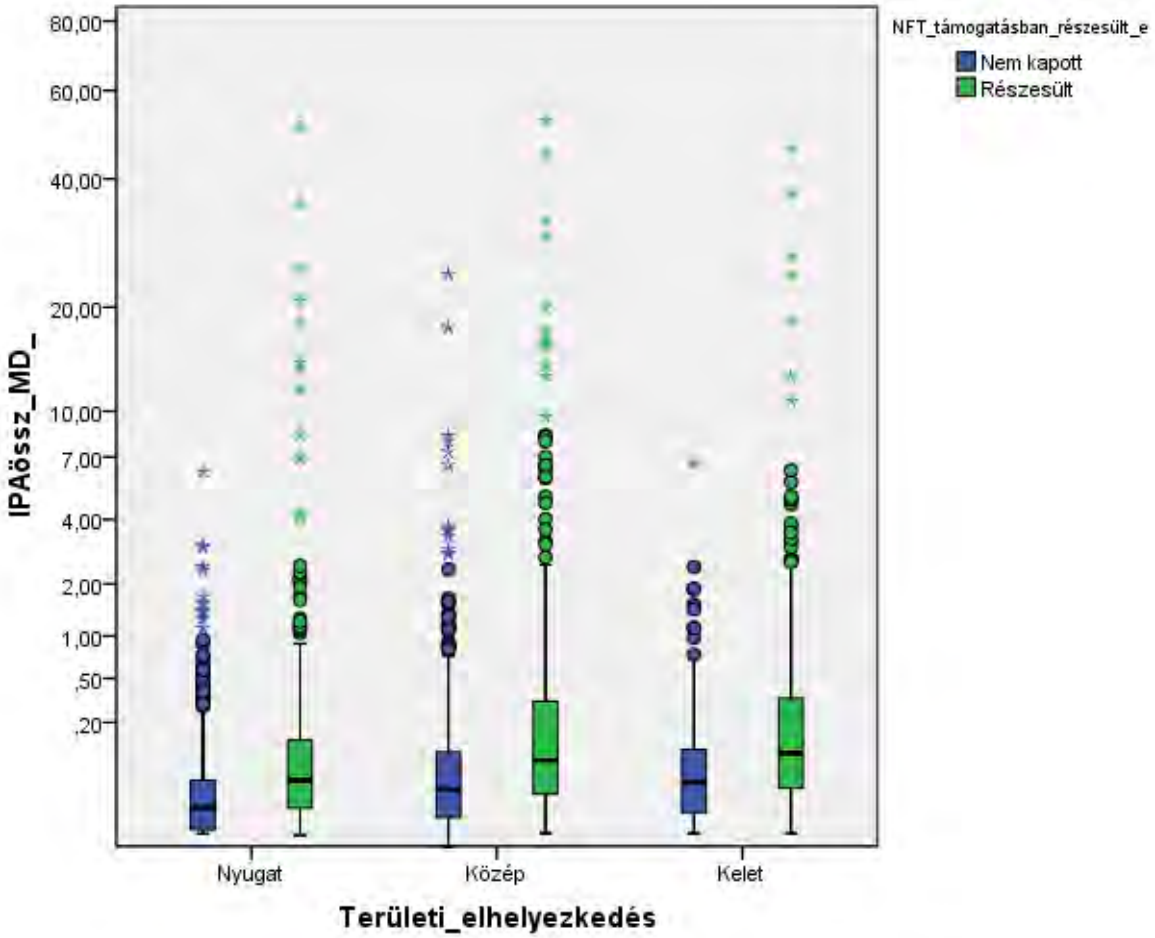
10,00
7,00
4,00
2,00
1,00
,40
,10
,00
Nyugat
Közép
Kelet
Területi_elhelyezkedés

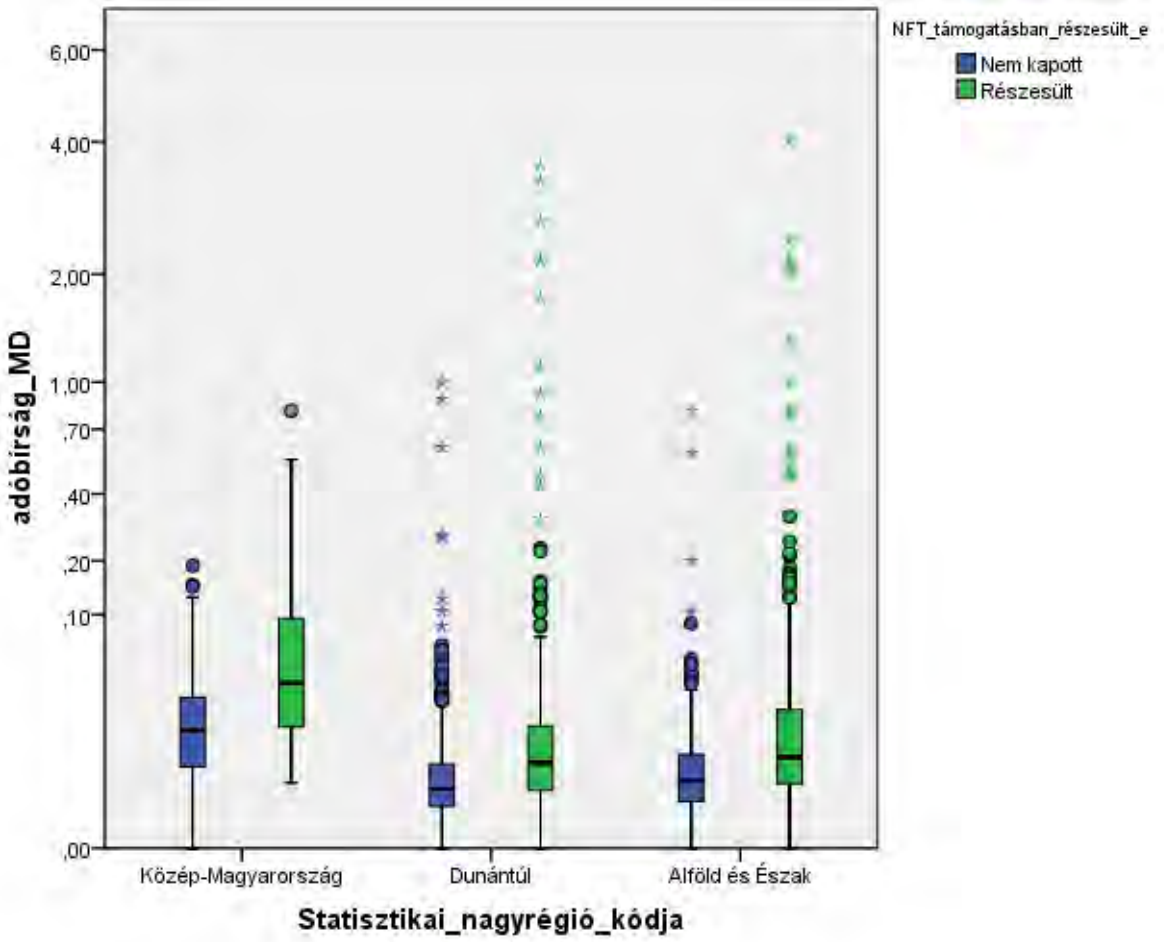
Total business taxes

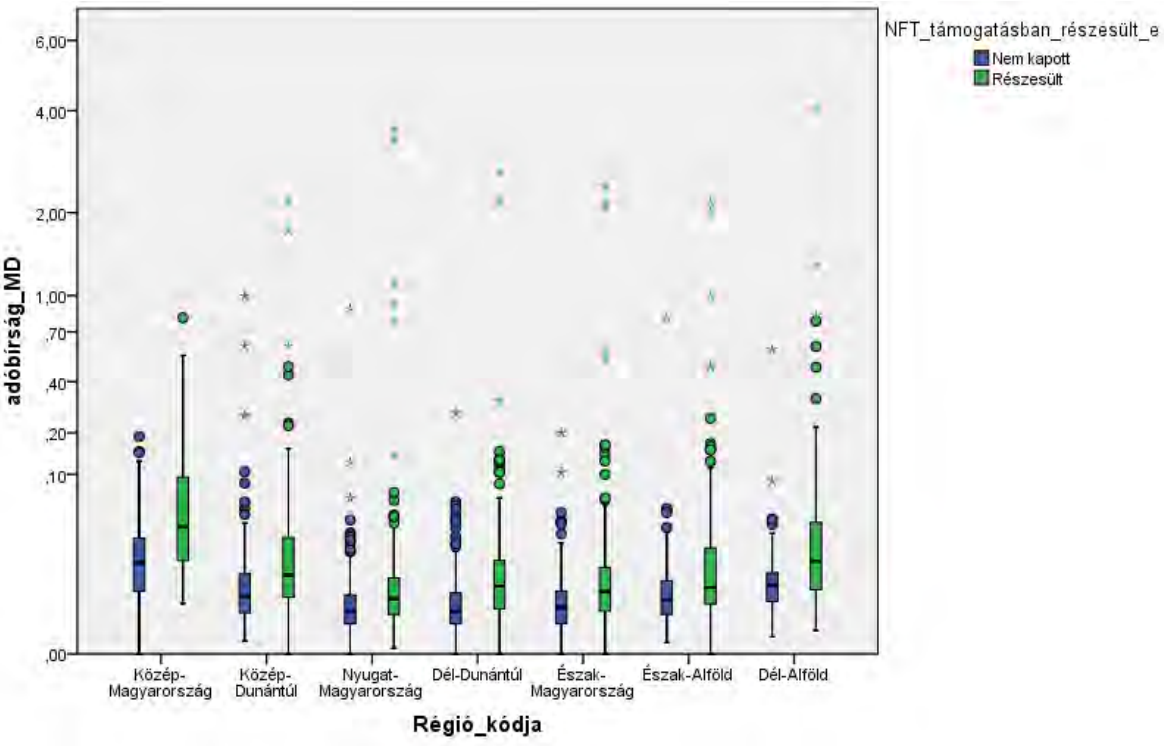


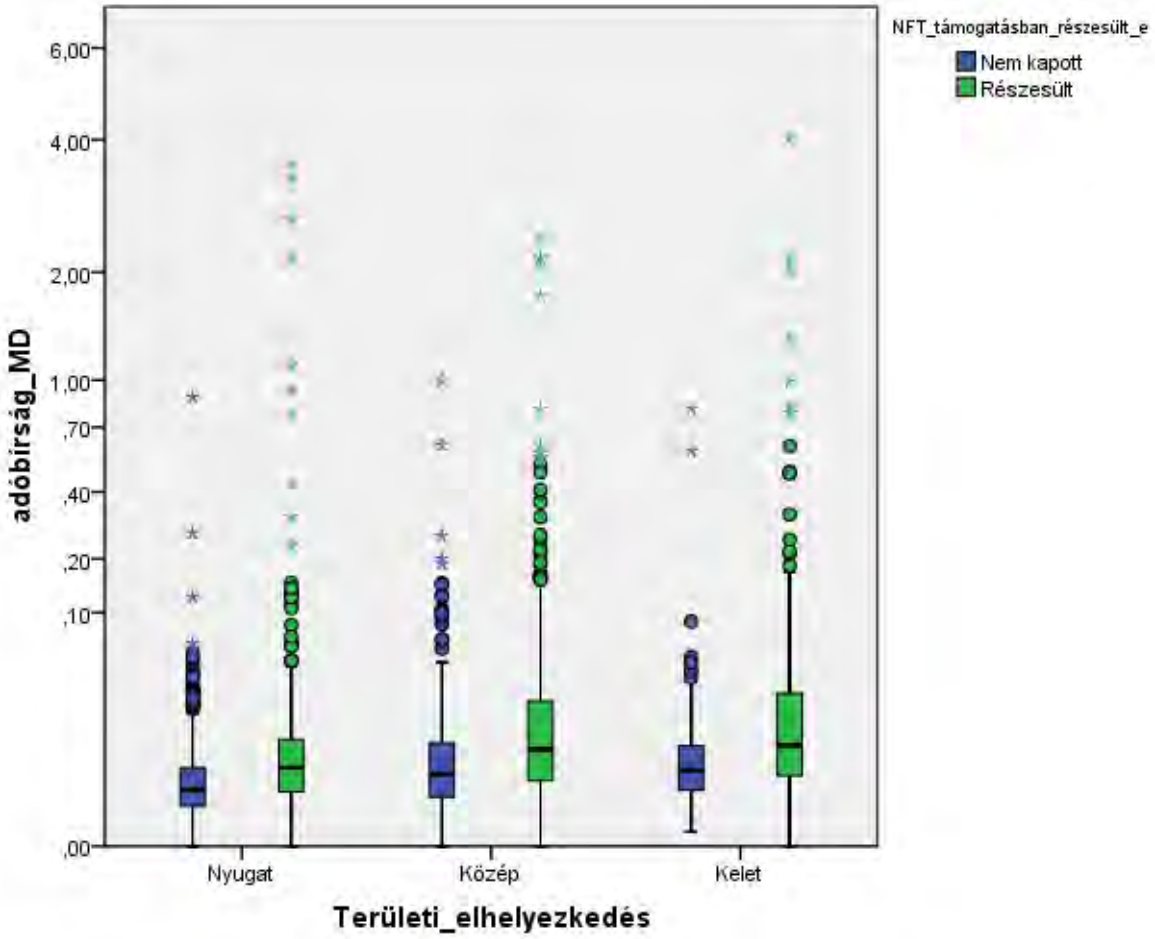



NFT_támogatásban_részesült_e
Nem kapott
Részesült
IPAössz_MD_
80,00
60,00
40,00
20,00
10,00
7,00
4,00
2,00
1,00
,50
,20
Nyugat
Közép
Kelet
Területi_elhelyezkedés

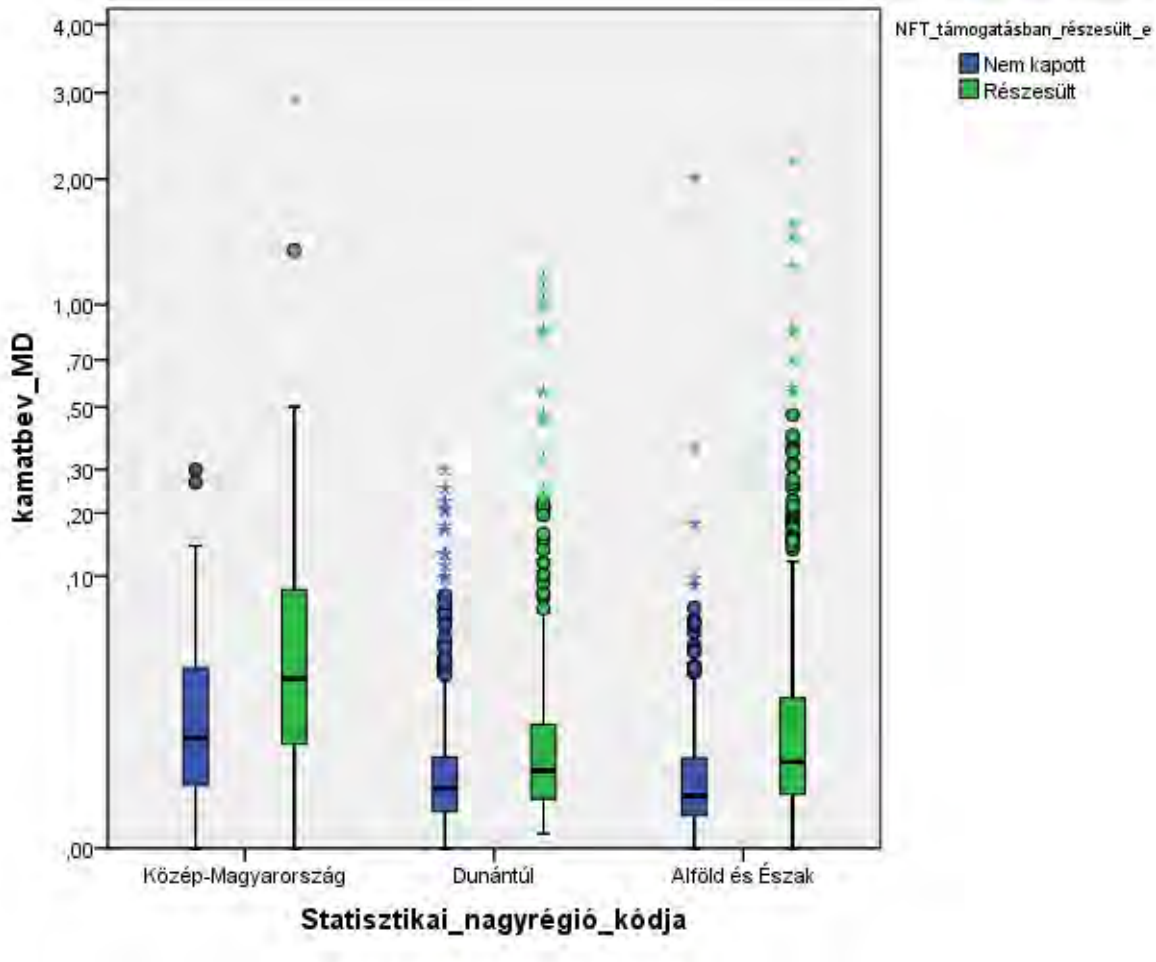
Charges levied in connection with local taxes

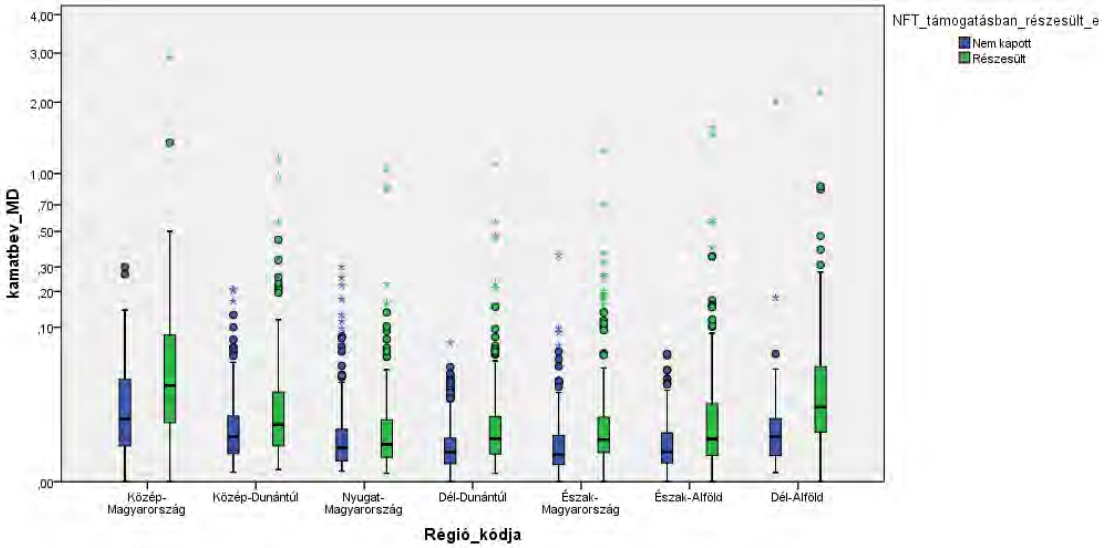


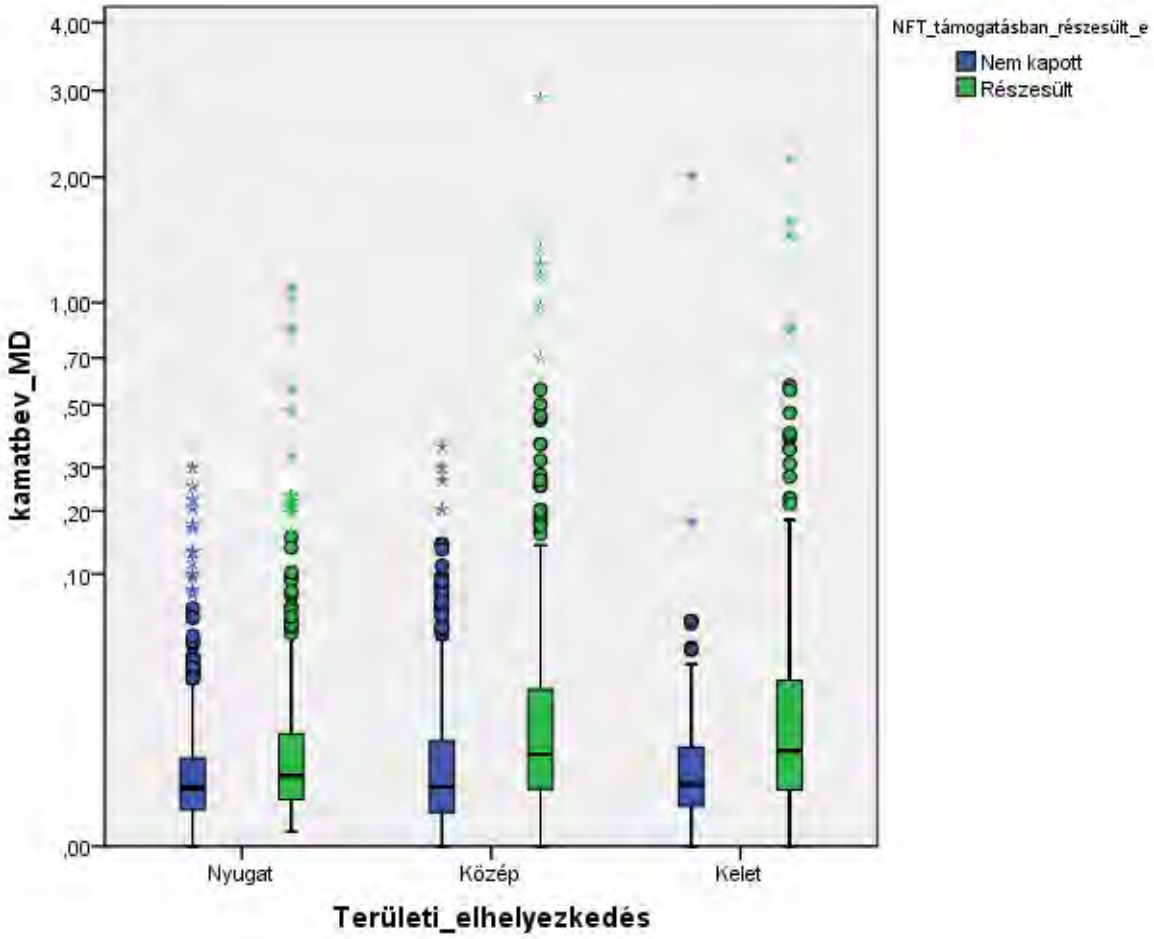



NFT_támogatásban_részesült_e
Nem kapott
Részesült
adóbirság_MD
6,00
4,00
2,00
1,00
,70
,40
,20
,10
,00
Nyugat
Közép
Kelet
Területi_elhelyezkedés

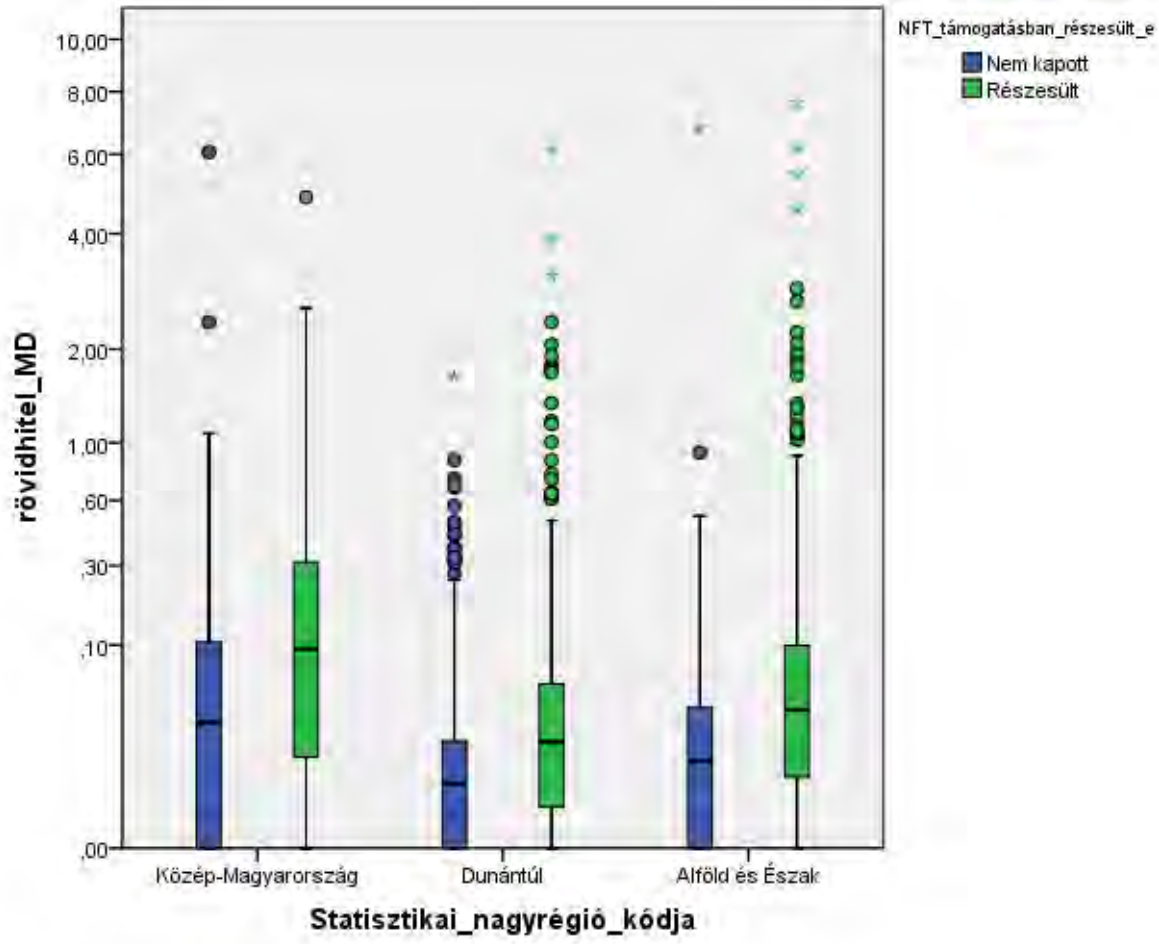
Interest revenues

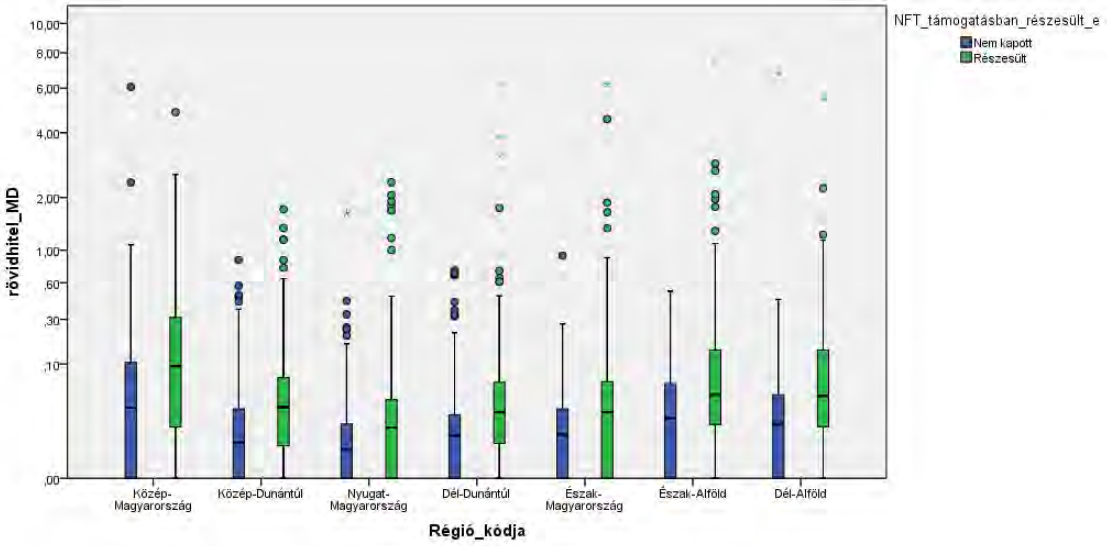


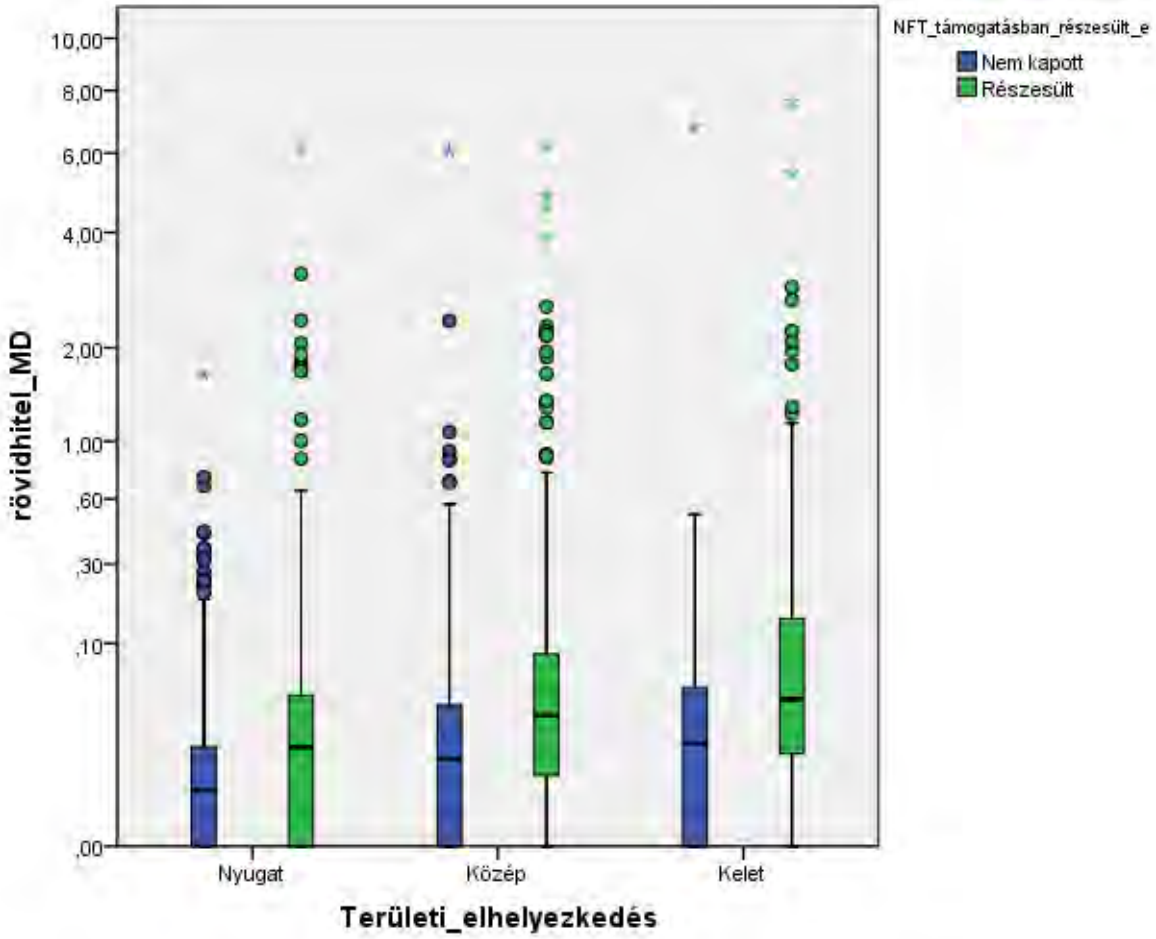



NFT_támogatásban_részesült_e
Nem kapott
Részesült
kamatbev_MD
4,00
3,00
2,00
1,00
,70
,50
,30
,20
,10
,00
Nyugat
Közép
Kelet
Területi_elhelyezkedés

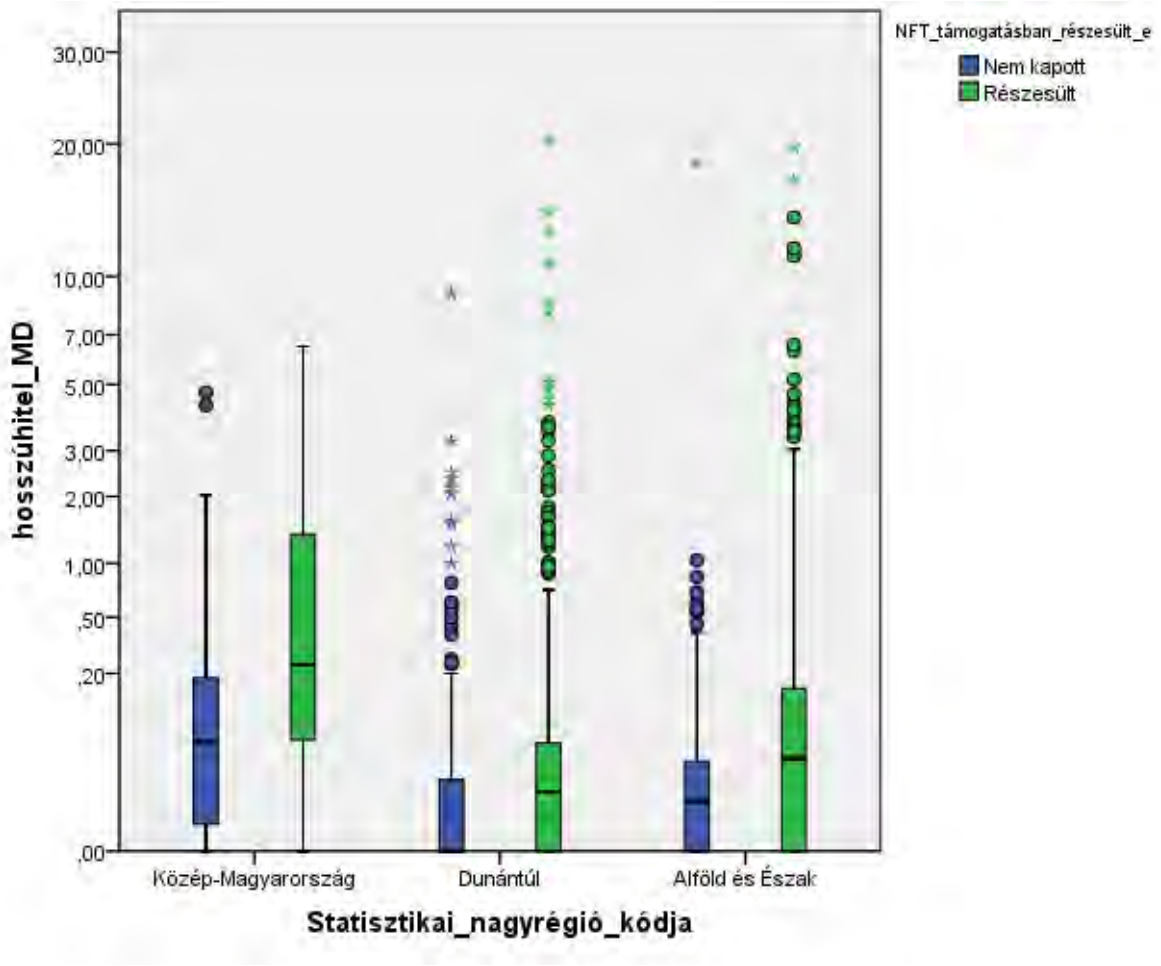
Receipt of short-term and liquid loans, issuance and sale of held-for-trading securities

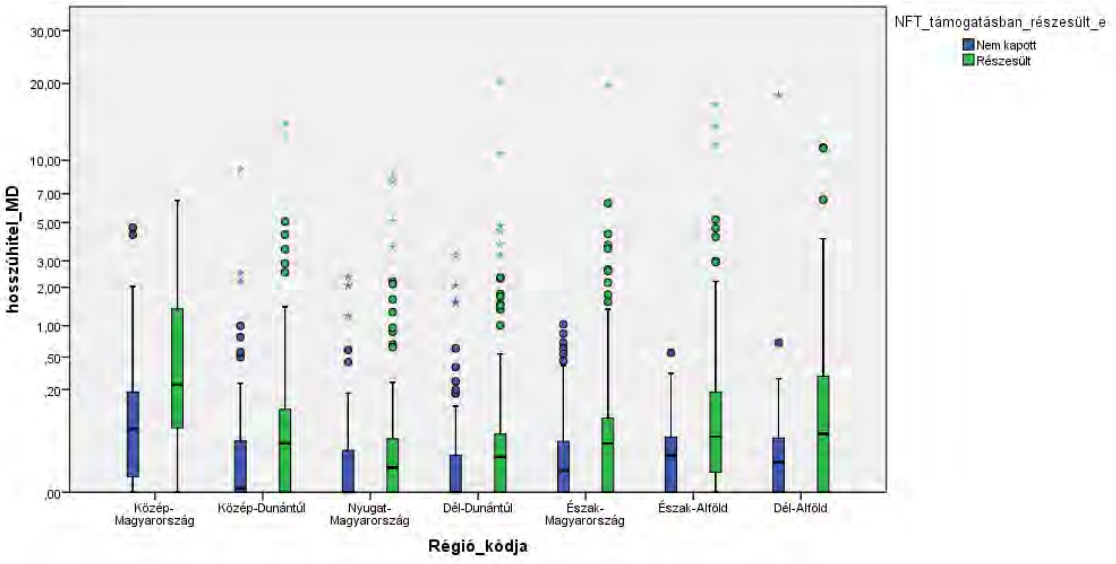


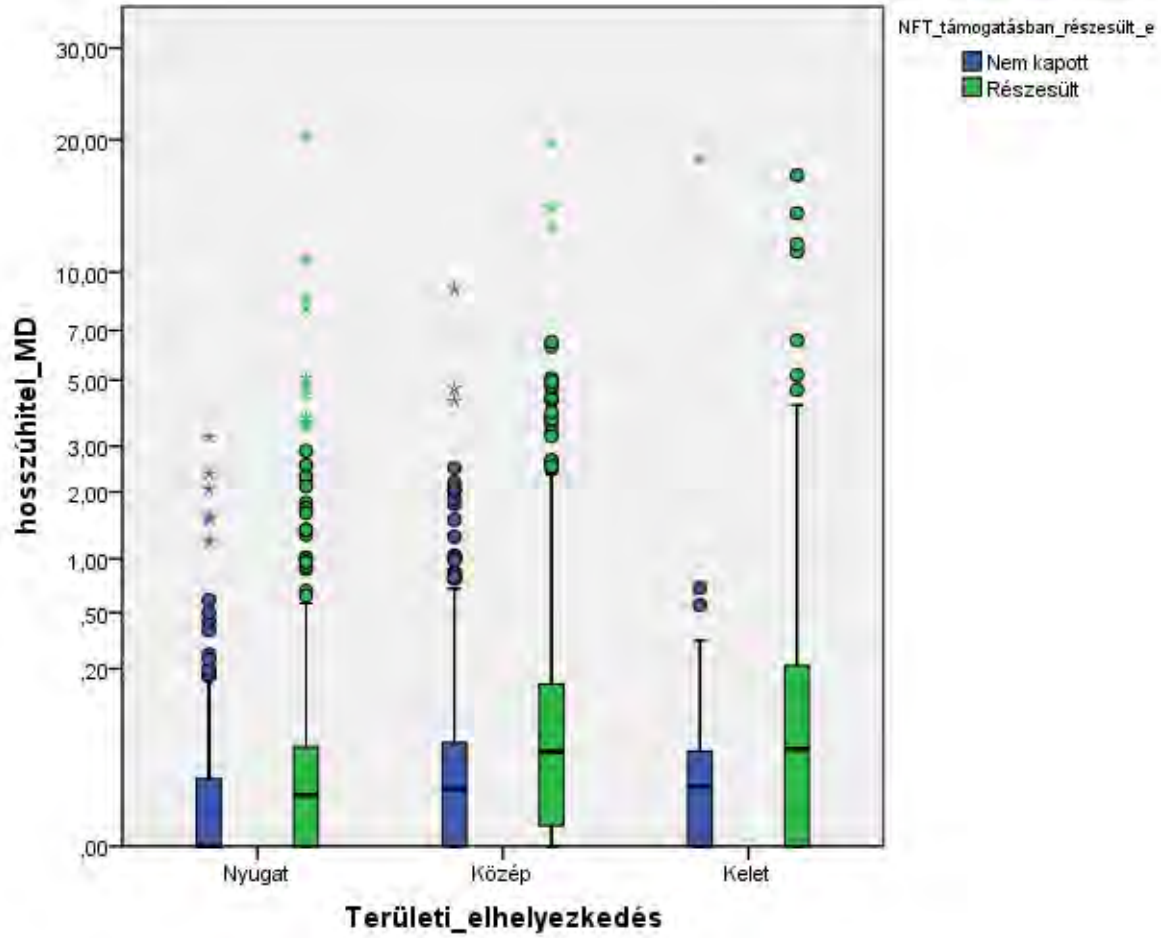



NFT_támogatásban_részesült_e
Nem kapott
Részesült
rövidhitel_MD
10,00
8,00
6,00
4,00
2,00
1,00
,60
,30
,10
,00
Nyugat
Közép
Kelet
Területi_elhelyezkedés

Receipt of long-term loans, sale and issuance of long-term securities, issuance of securities for investment purposes






NFT_támogatásban_részesült_e
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Részesült
hosszúhitel_MD
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20,00
10,00
7,00
5,00
3,00
2,00
1,00
,50
,20
,00
Nyugat
Közép
Kelet
Területi_elhelyezkedés

c1) Mean and standard deviation of variables under examination for municipalities that received and those that did not receive EU funds, national level

Variable	Did the municipality receive EU funding in the programming period 2004-2006?	N	Mean	Std. Deviation	Std. Error Mean
Total local taxes_MD	No	2043	0,124	0,592	0,013
	Yes	1108	0,968	4,100	0,123
Budgetary grants to a municipality_MD	No	2043	0,391	0,666	0,015
	Yes	1108	2,196	6,349	0,191
Tax charge_MD	No	2043	0,006	0,033	0,001
	Yes	1108	0,059	0,290	0,009
Municipal own soure revenues_MD	No	2043	0,639	1,224	0,027
	Yes	1108	3,570	11,180	0,336
Stock of money_MD	No	2043	0,094	0,273	0,006
	Yes	1108	0,528	1,858	0,056
Total business taxes_MD	No	2043	0,117	0,609	0,013
	Yes	1108	0,989	4,323	0,130
Revenues from personal income taxes_MD	No	2043	0,246	0,360	0,008
	Yes	1108	1,053	2,580	0,077
Sale of tangible assets and immaterial goods	No	2043	0,017	0,089	0,002
	Yes	1108	0,128	0,634	0,019
Interest revenues_MD	No	2043	0,006	0,022	0,000
	Yes	1108	0,043	0,183	0,006
Short-term and liquid loans_MD	No	2043	0,032	0,166	0,004
	Yes	1108	0,172	0,595	0,018
Long-term loans_MD	No	2043	0,043	0,233	0,005
	Yes	1108	0,455	1,729	0,052
Total business taxes_MD	No	2043	0,118	0,609	0,013
	Yes	1108	0,990	4,323	0,130

c2) Testing the equality of the variables under examination for municipalities that received and those that did not receive EU funds, national level (t-test)

Variable		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Differen	Std. Error Difference	90% Confidence Interval of	
									Lower	Upper
Total local taxes_MD	Equal variances assumed	231,107	0,000	-9,133	3 149,000	0,000	-0,844	0,092	-0,996	-0,692
	Equal variances not assumed			-6,814	1 132,055	0,000	-0,844	0,124	-1,048	-0,640
Budgetary grants to a municipality_MD	Equal variances assumed	290,473	0,000	-12,719	3 149,000	0,000	-1,804	0,142	-2,038	-1,571
	Equal variances not assumed			-9,432	1 120,233	0,000	-1,804	0,191	-2,119	-1,489
Tax charge_MD	Equal variances assumed	177,275	0,000	-8,107	3 149,000	0,000	-0,053	0,006	-0,063	-0,042
	Equal variances not assumed			-6,019	1 122,665	0,000	-0,053	0,009	-0,067	-0,038
Municipal own soure revenues_MD	Equal variances assumed	281,739	0,000	-11,721	3 149,000	0,000	-2,931	0,250	-3,342	-2,519
	Equal variances not assumed			-8,697	1 121,403	0,000	-2,931	0,337	-3,485	-2,376
Stock of money_MD	Equal variances assumed	268,391	0,000	-10,369	3 149,000	0,000	-0,435	0,042	-0,503	-0,366
	Equal variances not assumed			-7,741	1 133,021	0,000	-0,435	0,056	-0,527	-0,342
Total business taxes_MD	Equal variances assumed	223,739	0,000	-8,954	3 149,000	0,000	-0,872	0,097	-1,032	-0,712
	Equal variances not assumed			-6,677	1 130,906	0,000	-0,872	0,131	-1,087	-0,657
Revenues from personal income taxes_MD	Equal variances assumed	352,771	0,000	-13,886	3 149,000	0,000	-0,807	0,058	-0,902	-0,711
	Equal variances not assumed			-10,353	1 130,481	0,000	-0,807	0,078	-0,935	-0,678
Sale of tangible assets and immaterial goods _MD	Equal variances assumed	179,093	0,000	-7,814	3 149,000	0,000	-0,111	0,014	-0,135	-0,088
	Equal variances not assumed			-5,826	1 130,537	0,000	-0,111	0,019	-0,143	-0,080
Interest revenues_MD	Equal variances assumed	224,331	0,000	-9,054	3 149,000	0,000	-0,037	0,004	-0,044	-0,030
	Equal variances not assumed			-6,727	1 124,091	0,000	-0,037	0,006	-0,046	-0,028
Short-term and liquid loans_MD	Equal variances assumed	231,359	0,000	-9,935	3 149,000	0,000	-0,140	0,014	-0,163	-0,117
	Equal variances not assumed			-7,661	1 200,859	0,000	-0,140	0,018	-0,170	-0,110
Long-term loans_MD	Equal variances assumed	324,594	0,000	-10,585	3 149,000	0,000	-0,412	0,039	-0,476	-0,348
	Equal variances not assumed			-7,885	1 128,893	0,000	-0,412	0,052	-0,498	-0,326

d1) Logistic regression results, national level

National (No)				
Matches	**Does not match**	**Total**	**Model accuracy**	**Cutpoint**
1921	779	2700	71,15%	0,5
1461	352	1813	80,58%	0,3
1575	423	1998	78,83%	0,32
1512	383	1895	79,79%	0,31
National (Yes)				
Matches	**Does not match**	**Total**	**Model accuracy**	**Cutpoint**
329	122	451	72,95%	0,5
232	54	286	81,12%	0,65
246	65	311	79,10%	0,61
240	61	301	79,73%	0,63
238	56	294	80,95%	0,64

d2) Logistic regression estimation function, national level

	B	St.error	Wald	df	Sig.	Exp(B)
Total local taxes_MD	-2,03	0,51	16,01	1	0,00	0,13
Budgetary grants to a municipality_MD	0,79	0,15	27,01	1	0,00	2,20
Tax charge_MD	-4,52	1,86	5,89	1	0,02	0,01
Municipal own soure revenues_MD	0,88	0,15	34,90	1	0,00	2,41
Total business taxes_MD	0,85	0,41	4,39	1	0,04	2,34
Revenues from personal income taxes_MD	-1,00	0,31	10,71	1	0,00	0,37
Sale of tangible assets and immaterial goods _MD	-2,44	0,63	15,25	1	0,00	0,09
Constant	-1,31	0,06	542,07	1	0,00	0,27

e1) Logistic regression results, NUTS1 level

	NUTS1 (No)				
	Matches	**Does not match**	**Total**	**Model accuracy**	**Cutpoint**
	113	45	158	71,52%	0,5
	88	26	114	77,19%	0,3
	67	13	80	83,75%	0,26
	80	15	95	84,21%	0,28
	84	23	107	78,50%	0,29
Central Hungary	**NUTS1 (Yes)**				
	Matches	**Does not match**	**Total**	**Model accuracy**	**Cutpoint**
	23	6	29	79,31%	0,5
	23	6	29	79,31%	0,54
	22	6	28	78,57%	0,58
	22	6	28	78,57%	0,62
	19	5	24	79,17%	0,68
	14	4	18	77,78%	0,74
	19	4	23	82,61%	0,7
	NUTS1 (No)				
	Matches	**Does not match**	**Total**	**Model accuracy**	**Cutpoint**
	1195	396	1591	75,11%	0,5
	1039	259	1298	80,05%	0,3
Trans-danubia	**NUTS1 (Yes)**				
	Matches	**Does not match**	**Total**	**Model accuracy**	**Cutpoint**
	90	30	120	75,00%	0,5
	60	10	70	85,71%	0,7
	73	15	88	82,95%	0,6
	80	21	101	79,21%	0,56
	77	17	94	81,91%	0,57

	NUTS1 (No)				
	Matches	Does not match	Total	Model accuracy	Cutpoint
Great Plain and North	912	301	1213	75,19%	0,5
	326	72	398	81,91%	0,3
	435	122	557	78,10%	0,34
	385	98	483	79,71%	0,32
	357	89	446	80,04%	0,31
	NUTS1 (Yes)				
	Matches	Does not match	Total	Model accuracy	Cutpoint
	253	87	340	74,41%	0,5
	155	26	181	85,64%	0,7
	172	39	211	81,52%	0,64
	187	44	231	80,95%	0,6
	198	50	248	79,84%	0,58
	190	48	238	79,83%	0,59

e2) Logistic regression estimation function, NUTS1 level

Central Hungary						
	B	St.error	Wald	df	Sig.	Exp(B)
Budgetary grants to a municipality_MD	0,62	0,13	21,51	1	0,00	1,86
Constant	-1,48	0,24	37,54	1	0,00	0,23

Transdanubia						
	B	St.error	Wald	df	Sig.	Exp(B)
Total local taxes_MD	-0,82	0,22	14,41	1	0,00	0,44
Budgetary grants to a municipality_MD	0,55	0,22	6,52	1	0,01	1,74
Tax charge_MD	-4,84	2,38	4,12	1	0,04	0,01
Municipal own soure revenues_MD	0,76	0,18	17,45	1	0,00	2,14
Sale of tangible assets and immaterial goods _MD	-2,96	0,80	13,55	1	0,00	0,05
Long-term loans_MD	-0,47	0,21	5,12	1	0,02	0,63
Constant	-1,48	0,08	372,03	1	0,00	0,23

Great Plain and North						
	B	St.error	Wald	df	Sig.	Exp(B)
Total local taxes_MD	-1,83	0,44	17,69	1	0,00	0,16
Budgetary grants to a municipality_MD	0,89	0,27	10,98	1	0,00	2,44
Tax charge_MD	-4,88	3,13	2,42	1	0,12	0,01
Municipal own soure revenues_MD	1,03	0,28	13,27	1	0,00	2,80
Revenues from personal income taxes_MD	-1,39	0,55	6,45	1	0,01	0,25
Sale of tangible assets and immaterial goods _MD	-7,71	1,88	16,87	1	0,00	0,00
Interest revenues_MD	15,06	5,63	7,14	1	0,01	3470770,10
Short-term and liquid loans_MD	1,54	0,78	3,86	1	0,05	4,65
Constant	-1,19	0,10	143,90	1	0,00	0,30

f1) Logistic regression results, NUTS2 level

	NUTS2 (No)				
	Matches	**Does not match**	**Total**	**Model accuracy**	**Cutpoint**
	113	45	158	71,52%	0,5
	88	26	114	77,19%	0,3
	67	13	80	83,75%	0,26
	80	15	95	84,21%	0,28
	84	23	107	78,50%	0,29
Central Hungary					
	NUTS2 (Yes)				
	Matches	**Does not match**	**Total**	**Model accuracy**	**Cutpoint**
	23	6	29	79,31%	0,5
	23	6	29	79,31%	0,54
	22	6	28	78,57%	0,58
	22	6	28	78,57%	0,62
	19	5	24	79,17%	0,68
	14	4	18	77,78%	0,74
	19	4	23	82,61%	0,7
	NUTS2 (No)				
	Matches	**Does not match**	**Total**	**Model accuracy**	**Cutpoint**
	254	89	343	74,05%	0,5
	242	78	320	75,63%	0,4
	247	86	333	74,17%	0,44
	203	56	259	78,38%	0,3
	155	31	186	83,33%	0,24
Central Transdanubia	170	38	208	81,73%	0,26
	177	46	223	79,37%	0,27
	NUTS2 (Yes)				
	Matches	**Does not match**	**Total**	**Model accuracy**	**Cutpoint**
	42	16	58	72,41%	0,5
	29	3	32	90,63%	0,7
	35	9	44	79,55%	0,6
	32	8	40	80,00%	0,62

	NUTS2 (No)				
	Matches	Does not match	Total	Model accuracy	Cutpoint
Western Hungary	457	171	628	72,77%	0,5
	442	156	598	73,91%	0,4
	415	128	543	76,43%	0,32
	181	40	221	81,90%	0,24
	352	100	452	77,88%	0,28
	293	80	373	78,55%	0,26
	250	69	319	78,37%	0,25
	395	113	508	77,76%	0,3
	330	90	420	78,57%	0,27
	212	55	267	79,40%	0,245
	NUTS2 (Yes)				
	Matches	Does not match	Total	Model accuracy	Cutpoint
	17	10	27	62,96%	0,5
	12	2	14	85,71%	0,7
	14	2	16	87,50%	0,6
	16	3	19	84,21%	0,56
	17	6	23	73,91%	0,52
	17	3	20	85,00%	0,54
	NUTS2 (No)				
	Matches	Does not match	Total	Model accuracy	Cutpoint
Southern Transdanubia	482	131	613	78,63%	0,5
	471	123	594	79,29%	0,4
	463	119	582	79,55%	0,38
	458	117	575	79,65%	0,36
	453	114	567	79,89%	0,34
	446	104	550	81,09%	0,32
	448	108	556	80,58%	0,33
	NUTS2 (Yes)				
	Matches	Does not match	Total	Model accuracy	Cutpoint
	36	6	42	85,71%	0,5
	44	17	61	72,13%	0,4
	39	8	47	82,98%	0,46
	39	11	50	78,00%	0,44

	NUTS2 (No)				
	Matches	Does not match	Total	Model accuracy	Cutpoint
Northern Hungary	384		542	70,85%	0,5
	154		187	82,35%	0,25
	279		356	78,37%	0,3
	219		267	82,02%	0,27
	236		295	80,00%	0,28
	NUTS2 (Yes)				
	Matches	Does not match	Total	Model accuracy	Cutpoint
	50	18	68	73,53%	0,5
	25	6	31	80,65%	0,7
	26	6	32	81,25%	0,68
	30	8	38	78,95%	0,64
	28	6	34	82,35%	0,66
	27	6	33	81,82%	0,67
	29	8	37	78,38%	0,65
	NUTS2 (No)				
	Matches	Does not match	Total	Model accuracy	Cutpoint
Northern Great Plain	136	88	224	60,71%	0,5
	28	3	31	90,32%	0,35
	68	25	93	73,12%	0,4
	50	10	60	83,33%	0,37
	56	15	71	78,87%	0,38
	53	11	64	82,81%	0,375
	NUTS2 (Yes)				
	Matches	Does not match	Total	Model accuracy	Cutpoint
	120	45	165	72,73%	0,5
	56	11	67	83,58%	0,7
	74	17	91	81,32%	0,6
	91	28	119	76,47%	0,56
	83	22	105	79,05%	0,58
	80	20	100	80,00%	0,59

	NUTS2 (No)				
	Matches	**Does not match**	**Total**	**Model accuracy**	**Cutpoint**
	93	53	146	63,70%	0,5
	70	30	100	70,00%	0,4
	6	2	8	75,00%	0,3
	1	2	3	33,33%	0,26
Southern Great Plain					
	NUTS2 (Yes)				
	Matches	**Does not match**	**Total**	**Model accuracy**	**Cutpoint**
	85	23	108	78,70%	0,5
	66	11	77	85,71%	0,6
	73	17	90	81,11%	0,54
	77	19	96	80,21%	0,52
	81	21	102	79,41%	0,51

f2) Logistic regression estimation function, NUTS2 level

Central Hungary						
	B	St.error	Wald	df	Sig.	Exp(B)
Budgetary grants to a municipality_MD	0,62	0,13	21,51	1	0,00	1,86
Constant	-1,48	0,24	37,54	1	0,00	0,23
Central Transdanubia						
	B	St.error	Wald	df	Sig.	Exp(B)
Budgetary grants to a municipality_MD	1,17	0,44	7,05	1	0,01	3,21
Tax charge_MD	-16,35	4,54	12,95	1	0,00	0,00
Stock of money_MD	-0,35	0,20	3,17	1	0,07	0,70
Revenues from personal income taxes_MD	1,56	0,68	5,24	1	0,02	4,74
Constant	-1,59	0,17	84,52	1	0,00	0,20
Western Hungary						
	B	St.error	Wald	df	Sig.	Exp(B)
Revenues from personal income taxes_MD	2,22	0,55	16,47	1	0,00	9,17
Sale of tangible assets and immaterial goods _MD	-7,71	2,01	14,70	1	0,00	0,00
Short-term and liquid loans_MD	4,67	2,21	4,47	1	0,03	106,34
Constant	-1,32	0,12	114,39	1	0,00	0,27
Southern Transdanubia						
	B	St.error	Wald	df	Sig.	Exp(B)
Budgetary grants to a municipality_MD	1,12	0,24	20,85	1	0,00	3,05
Stock of money_MD	2,31	1,15	4,03	1	0,04	10,02
Total business taxes_MD	-1,04	0,36	8,52	1	0,00	0,35
Constant	-1,67	0,13	170,21	1	0,00	0,19
Northern Hungary						
	B	St.error	Wald	df	Sig.	Exp(B)
Revenues from personal income taxes_MD	2,17	0,36	36,21	1	0,00	8,79
Constant	-1,40	0,14	97,44	1	0,00	0,25
Northern Great Plain						
	B	St.error	Wald	df	Sig.	Exp(B)
Budgetary grants to a municipality_MD	1,48	0,41	13,22	1	0,00	4,37
Revenues from personal income taxes_MD	-1,49	0,72	4,25	1	0,04	0,23
Constant	-0,64	0,17	14,62	1	0,00	0,53
Southern Great Plain						
	B	St.error	Wald	df	Sig.	Exp(B)
Revenues from personal income taxes_MD	1,68	0,42	16,34	1	0,00	5,36
Sale of tangible assets and immaterial goods _MD	-12,71	3,70	11,79	1	0,00	0,00
Long-term loans_MD	4,79	1,77	7,28	1	0,01	119,88
Constant	-0,91	0,23	15,95	1	0,00	0,40

g1) Logistic regression results, according to the Author's own territorial breakdown

	Breakdown by the author (No)				
	Matches	**Does not match**	**Total**	**Model accuracy**	**Cutpoint**
	1044		1355	77,05%	0,5
	868		1046	82,98%	0,25
	911		1116	81,63%	0,27
	932		1152	80,90%	0,28
	966		1207	80,03%	0,3
West					
	Breakdown by the author (Yes)				
	Matches	**Does not match**	**Total**	**Model accuracy**	**Cutpoint**
	47	16	63	74,60%	0,5
	33	5	38	86,84%	0,7
	43	7	50	86,00%	0,6
	45	12	57	78,95%	0,54
	44	10	54	81,48%	0,56
	45	10	55	81,82%	0,55
	Breakdown by the author (No)				
	Matches	**Does not match**	**Total**	**Model accuracy**	**Cutpoint**
	639	298	937	68,20%	0,5
	406	101	507	80,08%	0,3
Centre					
	Breakdown by the author (Yes)				
	Matches	**Does not match**	**Total**	**Model accuracy**	**Cutpoint**
	105	48	153	68,63%	0,5
	68	15	83	81,93%	0,7
	72	17	89	80,90%	0,66
	72	21	93	77,42%	0,64

	Breakdown by the author (No)				
	Matches	**Does not match**	**Total**	**Model accuracy**	**Cutpoint**
	236	158	394	59,90%	0,5
	118	45	163	72,39%	0,4
	44	10	54	81,48%	0,36
	60	19	79	75,95%	0,37
	51	13	64	79,69%	0,365
East	**Breakdown by the author (Yes)**				
	Matches	**Does not match**	**Total**	**Model accuracy**	**Cutpoint**
	189	60	249	75,90%	0,5
	134	26	160	83,75%	0,6
	124	22	146	84,93%	0,64
	150	29	179	83,80%	0,56
	166	39	205	80,98%	0,54
	176	46	222	79,28%	0,52
	171	40	211	81,04%	0,53

g2) Logistic regression estimation function, according to the Author's own territorial breakdown

West						
	B	St.error	Wald	df	Sig.	Exp(B)
Budgetary grants to a municipality_MD	1,19	0,17	51,76	1	0,00	3,29
Sale of tangible assets and immaterial goods _MD	-2,35	0,64	13,64	1	0,00	0,10
Constant	-1,48	0,08	352,41	1	0,00	0,23
Centre						
	B	St.error	Wald	df	Sig.	Exp(B)
Total local taxes_MD	-0,47	0,14	11,93	1	0,00	0,63
Budgetary grants to a municipality_MD	0,51	0,16	10,58	1	0,00	1,66
Municipal own soure revenues_MD	0,36	0,12	8,46	1	0,00	1,43
Long-term loans_MD	-0,50	0,18	7,42	1	0,01	0,61
Constant	-1,22	0,10	159,88	1	0,00	0,30
East						
	B	St.error	Wald	df	Sig.	Exp(B)
Budgetary grants to a municipality_MD	0,59	0,14	18,44	1	0,00	1,80
Long-term loans_MD	3,22	1,09	8,71	1	0,00	25,11
Constant	-0,67	0,13	25,40	1	0,00	0,51

h) Frequency of settlements that received EU funds, stratified according to size

Stratification according to size	Did the municipality receive EU funding in the programming period 2004-2006?	Count	%
less than 500 inhabitants	No	866	83,6
	Yes	170	16,4
	Total	1036	100,0
500 to 4999 inhabitants	No	1110	60,8
	Yes	716	39,2
	Total	1826	100,0
5000 to 9999 inhabitants	No	41	28,5
	Yes	103	71,5
	Total	144	100,0
10000 to 49999 inhabitants	No	26	20,8
	Yes	99	79,2
	Total	125	100,0
more than 50000 inhabitants	Yes	20	100,0

i) Logistic regression results in the case of settlements with 500-999 and 1 000-4 999 inhabitants

	Breakdown by the author (No)				
	Matches	**Does not match**	**Total**	**Model accuracy**	**Cutpoint**
500 to 999 inhabitants	985	515	1500	65,67%	0,5
	307	76	383	80,16%	0,28
	363	97	460	78,91%	0,29
	332	89	421	78,86%	0,285
	Breakdown by the author (Yes)				
	Matches	**Does not match**	**Total**	**Model accuracy**	**Cutpoint**
	201	125	326	61,66%	0,5
	60	21	81	74,07%	0,7
	40	19	59	67,80%	0,75
	28	10	38	73,68%	0,8

	Breakdown by the author (No)				
	Matches	**Does not match**	**Total**	**Model accuracy**	**Cutpoint**
1 000 to4 999 inhabitants	3	3	6	50,00%	0,5
	Breakdown by the author (Yes)				
	Matches	**Does not match**	**Total**	**Model accuracy**	**Cutpoint**
	100	38	138	72,46%	0,5
	84	26	110	76,36%	0,6
	78	19	97	80,41%	0,64
	79	20	99	79,80%	0,63