

CORVINUS UNIVERSITY OF BUDAPEST

CENTRALISATION AND ECONOMIC CRISIS

TOWARD THE MANAGEMENT ACCELERATOR EFFECT

Ph. D. Thesis

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Budapest, 2017

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CRISIS**

Department of Business Economics

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Corvinus University of Budapest
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Administration

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Thank you.

Zoltan Bakonyi,

Kaposvár, 07th January 2017.

Dedicated
to my family

„If you must break the law, do it to seize power: in all other cases observe it.”

Gaius Julius Caesar

„The higher we are placed, the more humbly we should walk.”

Marcus Tullius Cicero

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THESIS STRUCTURE

Introduction

The purpose of this thesis is to answer the following question: what kind of relationship exists between concentration of authority and economic crises. Although both topics are widely discussed this thesis can contribute to the literature in two respects:

1. Reactions to crisis. Crises are essential parts of the capitalist system therefore, albeit the last economic depression happened several years ago we are going to face recessions in the future as well. The findings of this thesis may support managerial decisions about organisations and growth.
2. Cyclical effects. After practical analyses the theoretical concept of management accelerator effect is formulated. It can be a supportive theory describing growth which may be useful for development economists and for management scientists.

Albeit it is primarily a strategic management thesis it also analyses the findings and theories of economic science about centralisation.

This introduction chapter defines the most important concepts and the main chapters of the dissertation. The first part provides a short description about the theoretical background of the thesis including crisis and centralisation.

The next part contains the logic and structure of the three chapters which are three different, but interrelated papers. The first one is a theoretical paper which examines centralisation in a history of thought perspective. The second paper is an empirical analysis about the relationship of economic crisis and centralisation. The third chapter is a qualitative research showing why companies centralise during crisis.

The final part of the introduction chapter briefly describes the summary and the conclusions of the dissertation.

1. Theoretical background

1.1. Crisis and crisis management

This thesis analyses centralisation during crisis which can be defined as a state when an unexpected change in the contextual factors significantly jeopardizes the profitability, the operation or the existence of the organisation. Strong growth periods and crises are integral parts of capitalist systems (Kornai, 2011) therefore companies must understand them.

On the other hand most of the time practical decision-makers are hardly prepared for crisis because they do not believe the “quiet period” can end once (Gorton, 2012). Reinhart and Rogoff (2009) call this phenomenon the “this time is different” syndrome. This thesis may help companies be prepared for the next depression by analysing crisis strategies.

Several types of crises can be distinguished (e.g. sovereign defaults; hyperinflation; currency crashes or banking crises) (Reinhart and Rogoff, 2009), but this thesis examines the most serious depression of our time, the Subprime Mortgage Crisis of 2007-2009. According to Kunc and Bhandari (2011) researchers can use this recession as a natural experiment to understand strategic processes of firms in-depth. Thus, although this thesis would like to formulate theories and concepts about crises in general, but all of its empirical data is based on the subprime crisis.

The detailed description of the economic history of Subprime Mortgage Crisis is too far from the original focus of this thesis, therefore it pays attention only on its main consequences. A serious banking crisis emerged in 2008 as a result of the overinvestments in the American real-estate sector; the underregulated financial innovations; and the permissive fiscal policies of the developed economies (Reinhart and Rogoff, 2009). Consequently a lot of giant corporations went bankrupt which greatly supported the American and international economic growth (e.g. Lehman Brothers; Merrill Lynch; etc.) (Gorton, 2012).

After a few months, the depression became a global real economy crisis caused serious problems for companies. The asset prices dropped, bank loans stopped suddenly, investment activity and production output decreased seriously and millions of people

lost their jobs (Gorton, 2012). The industrial output of the world decreased by 6.5% while international trade had a 12.8% fall between 2008 and 2009. These numbers in the European Union were respectively 13.7% and 15% (Békés et al., 2011, p. 1).

After 2009 companies had to face serious effects of crisis such as: (1) decreased demand; (2) reduced liquidity; and (3) increased uncertainty (OECD, 2012). In this radically new environment companies had to develop new strategies to prosper or at least to survive.

There were huge differences in crisis reactions among companies¹ (Békés et al., 2011). According to Wilson and Eilertsen (2010) both defensive and offensive strategies are implemented as a reaction to crisis.

Offensive strategies:

- New products,
- Entering new markets,
- New pricing,
- Investing in new production facilities, and
- Increasing marketing budget.

Defensive strategies:

- Reducing operational costs,
- Stopping new hiring,
- Employment downsizing,
- Decreasing training and R&D expenditures, and
- Put larger projects on hold (Wilson and Eilertsen, 2010, p.4.).

Nevertheless decreased demand and liquidity forced companies to focus primarily on increasing efficiency (OECD, 2012). On the other hand companies which implement radical turnaround are more successful than those which have only cost-cutting strategies (Barker and Duhaime, 1997). According to a McKinsey study those companies became more profitable which significantly reallocated their resources

¹ Interestingly 10-20% of the manufacturing companies had better performance in 2009 than one year before (Békés et al., 2011, p. 4.).

(Fruk et al., 2013) moreover faster resource reallocators became more profitable than the slower firms (Hall and Kehoe, 2013).

The main reason why firms preferred short-term strategies was the increased uncertainty (Kunc and Bhandari, 2011). As Smart and Vertinsky (1984) state implementing a significant turnaround is easier in stable environment. Moreover uncertainty also decreases investments and innovations during depression (OECD, 2012).

But how do managers choose strategy during depression? In the time of economic hardship managers have to face three main challenges related to decision-making. Because of turbulence they have (1) less time to decide; (2) less information available; and (3) increased decision load (Cosgrave, 1996). To understand their decision habits during depression, we should understand the structure of decision-making authority of the firms.

1.2. Concentration of authority

"Moses answered his father-in-law, 'The people come to me to consult God. Whenever they have a disagreement, they come to me to have me settle the matter between them and make known to them God's decisions and regulations.'" "You are not acting wisely," his father-in-law replied. (...) [S]et [trustworthy men] as officers over groups of thousands, of hundreds, of fifties, and of tens. Let these men render decisions for the people in all ordinary cases. More important cases they should refer to you, but all the lesser cases they can settle themselves." (Bible; Exodus 18; 15-22).

This conversation between Moses and his father-in-law, Jethro is one of the first descriptions of decentralisation in the history of mankind. Since then a lot of politicians, leaders, researchers, political scientists have discussed the topic. The following part defines the most important concepts of economics and management science about centralisation and decentralisation.

Level of centralisation can be defined as the concentration of decision-making authority in the organisation. This concentration can be explained by the informational and the behavioural aspects of the organisation.

Informational aspect. Delegation of authority approach of centralisation describes that nobody can be acquainted with all of the utilized resources in the company. Therefore top management must delegate its decision rights to other members of the organisation (Richardson et al., 2002; Baum and Wally, 2003; Adams et al., 2005). Thereby hierarchical organisations emerge by forming central headquarters (HQ) and strategic business units (SBU). Papers with business unit approach examine the interactions of HQ and SBUs in the organisation (Gates and Egelhoff, 1986; Golden, 1992; Peng, 2009; Kunisch et al., 2012).

Behavioural aspect. Certainly members of the organisation have different preferences, goals and habits. To align these personal agendas with the organisational strategy, shareholders use incentives. Agency theorists in centralisation literature analyse the incomplete contracts between the principals and the agents (Aghion and Tirol, 1997; Aghion et al., 2013) and their incentives and control mechanisms (Grossman and Helpman 2004; Feenstra and Hanson 2005; Hong et al. 2015).

Organisations can significantly differ in informational (e.g. different resources, organisation structure and culture) and behavioural aspects (e.g. different ethical standards, managerial capabilities and habits) therefore the concentration of decision-making authority can vary as well.

1.3. Centralisation of strategic management

Because decision-making authority can be different in every step of strategic management, centralisation can be identified both in strategy making, implementation and feedback stages.

Strategy making. Concentration of authority in strategy making can be defined as the number of people who are involved in the decision-making process of the most important goals of the organisation. Centralisation can emerge if a decision should be approved by higher hierarchical levels (Gates and Egelhoff, 1986).

In multinational companies Roth and O'Donnell (1996) analyse the types of strategic decisions in which the subsidiaries are involved. Some researchers do not focus only on the number of decision-makers but even on the frequency of their participation in

important decisions (Hage and Dewar, 1973). In this case examining CEO's willingness of delegation is essential (Aghion and Tirole, 1997; Richardson et al, 2002).

Implementation. Baum and Wally (2003) distinguish centralisation of decisions related to strategic and operational activities. Concentration of authority in implementation describes how detailed is the non-negotiable part of the strategic plan and what is up to the implementer.

Some studies focus on the different sets of functional tasks on which the organisational unit leader can decide (Child, 1972; Richardson et al., 2002; Lin and Germain, 2003; Ling et al., 2008). Numerous studies analyse general organisational structures of multinational companies (Keats and Hitt, 1988; Nohria and Goshal, 1994; Peng, 2009) or the relationships of headquarters and organisational units (Golden, 1992; Argyres and Silverman, 2004).

Feedback. Concentration of authority in feedback defines how strong the control mechanisms are in the organisation. Feedback is centralised if the headquarters demand rather detailed and frequent reports from the organisation members.

Power theorists of centralisation literature emphasising the importance of authority in control (Pfeffer and Leblebici, 1973). According to Eisenhardt (1985) contextual factors influence the type of control in the organisation which can be both result and behaviour control. Marin and Verdier (2008) also highlights the importance of the CEO's approach to control when she decides about centralisation.

1.4. Centralisation versus Decentralisation

There are some important trade-offs between centralised and decentralised organisations (Davis et al. 2009).

Informational aspect. In centralised organisations all of the relevant information is transferred to the headquarters where decisions are made. Because ideally the headquarters possess all of the relevant information, they can optimize their strategy from the perspective of the entire organisation (Ansoff, 1991). However, there is no guarantee to receive all of the relevant information. Moreover, in some cases headquarters must decide so rapidly that they cannot wait for all of the information

(Mintzberg, 1990). And certainly if only few people make decisions the risk of judgement error rises (Adams et al., 2005).

On the contrary, in a decentralised organisation even subunits can make strategic decisions based on their local knowledge (Hayek, 1944). For this reason, they can implement several projects without the approval of the headquarters (Golden, 1993; Alonso et al., 2008). But on the other hand, for the same reason also duplications can emerge in the organisation (Mintzberg, 1990; Davis et al., 2009).

Behavioural aspect. Because of information asymmetry between the organisational units and the headquarters, moral hazard may arise which can be handled by centralisation (Alonso et al., 2008; Aghion et al. 2013; Aghion and Bloom, 2014). If fewer people are involved in decision-making the time of reaching a conclusion can be shorter (Ansoff, 1991; Baum and Wally, 2003). Because the strategy is made in the headquarters, centralised organisation has a “whole company” focus which allows it to make company-wide optimisations (Golden, 1993; Baum and Wally, 2003; Alonso et al. 2008). But certainly even this strong control can generate serious costs which should be handled by the management (Puga, 2002; Adams, et al. 2005; Aghion et al. 2013).

On the other hand, to avoid moral hazard even incentives can result in effective management of a decentralised organisation which understands the local context easier (Mintzberg 1990; Oliver and Moore, 2005; Aghion et al. 2013). If units have enough decision rights and incentives, decentralised organisation is better at experimentation and entrepreneurship (Meyer, 1982; Aghion and Tirole, 1997; Davis et al. 2009; Zoghi et al., 2010).

Therefore, centralised companies are better at efficiency while decentralised firms are better at innovation.

[1.5. The perspective of the dissertation](#)

The informational and behavioural aspects can describe how resources are managed in the economy. This is a special view of the firm which is related to the resource based theory (Hamel and Prahalad, 1990; Grant, 1991) and the school of organisational power (Pfeffer and Leblebici, 1973; Mintzberg et al., 2005). According to this view firms exist because coordination of resources increases their utility. For this

coordination, firms need authority of which sources are widely discussed in the literature of power school. The boundary of the firm is defined by the scope of its real authority which certainly can differ from the official (legal) boundaries. The competitive advantage is based on the resources of which optimisation is influenced by the concentration of authority. Some firms can use the authority to increase the synergies of the resources while others are too centralised to operate effectively. Some companies can barely manage their own resources, though others can influence the recourse optimisation of their suppliers as well.

The focus of this dissertation is far from the theories of firm hence, the detailed description of this view should be a topic of another research. Nevertheless it is important to define the boundaries of the perspective of this dissertation about centralisation. In the following chapters concentration of authority is analysed only in (1) company-level; and (2) vertical perspective.

Company-level perspective. Concentration of authority can be analysed in almost every level of the economy. Did a middle manager get more power in the organisation? Did the whole value chain² become more centralised then before? The in-depth analysis of these questions is too far from the core topic of the thesis.

This dissertation is primarily a strategic management research therefore it focuses on the firm-level centralisation. The only exception is the first chapter which compares the planning economy with strategic planning. But the conclusions of even this chapter are utilized only to develop the company-level centralisation theory.

Vertical perspective. Change in concentration of authority can emerge between organisational units as well. Theoretically there is a chance to find a company where the overall centralisation does not change while one organisational unit wins more power at the expense of another (horizontal perspective). The analysis of the internal

² The concept of global value chains states that international cooperation motivates whole networks to integrate their activities (centralisation) (Gereffi et al., 2005). This integration can be managed by several forms of inter-organisational coordination where the coordination mechanisms can transform (Hakansson and Persson, 2004). The core issue of this field is to find the right balance between local adaptation and global efficiency.

organisational structures³ and of the relative influence is too far from the original research question. This dissertation focuses on the significant changes of the overall centralisation (vertical perspective) of companies.

2. Description of the main chapters

The following part summarizes the main chapters of the dissertation which are three different papers about centralisation (Table 1).

Both summaries describe the background of the researches, the main questions and motivations, the research methods, the results and conclusions. Every paper summary ends with suggestions for managers and fellow researchers. The description of these chapters are crucial for the final section because they provide theoretical background for the management accelerator effect.

³ Corporate entrepreneurship (Burgelman, 1983) and ambidextrous organisations (Tushman and O'Reilly, 1996) are great examples how companies can try to have global efficiency and local adaptation at the same time.

Article	I. Comparison of Calculation and Corporate Planning Debate about Centralisation	II. Centralisation of strategic decisions during the Great Recession	III. Why do firms centralise during the crisis even if it is not optimal?
Question	What are the main arguments for centralisation?	How does economic crisis influence centralisation?	Why do companies centralise during crisis?
Importance	Linking the centralisation debates of economics and strategy. Different time and context but the same arguments. There may be a general nature of planning.	Describing the relationship between economic crisis and centralisation. A descriptive research on one of the largest samples of the field.	Albeit some researches state decentralisation is beneficial during crisis, this study shows why companies do the opposite.
Method	Content analysis of papers and books.	Econometric analysis with multinomial logistic regressions.	Grounded analysis based on semi-structured interviews.
Results	5 similar arguments pro and against centralisation in both of the debates.	Crisis fosters centralisation. Centralisation is a complement of short-term policies. Centralised companies grow slower in mid-term.	Centralisation is a crisis tactic (because of its efficiency and speed) while decentralisation can be hardly considered as a reaction to depression.
Conclusions	Planning has a general nature; centralisation is good at efficiency while decentralisation fosters innovation. Decentralisation and centralisation are two ends of a continuum where companies move.	Albeit centralisation decreases three-year growth, companies implement such policy. This reaction can be described by behavioural approach.	There can be a lag in adaptation to economic cycles. Imperfect perceiving of environmental changes and love of power can maintain centralisation.
Suggestions for managers	Trade-off between efficiency and innovation. Centralisation can be changed all the time but its arguments are more or less the same.	It may be a useful tactic to handle crisis situations, but to avoid its long-term downsides, managers should be ready to reconsider their policy.	Change according to cycles can provide competitive advantage. Emotions and heuristics are useful but can maintain centralisation longer than it should be.

1. Table The Content of the thesis - The three main chapters.

Source: Author's compilation.

2.1. Comparison of Calculation and Corporate Planning Debate about Centralisation

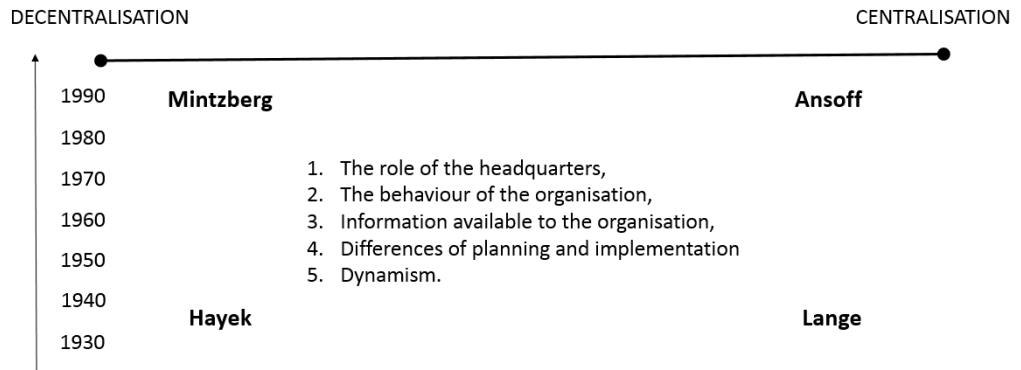
The first chapter is a theoretical paper about the historical background of centralisation theory describing the similarities between two debates about central planning. The first one was Hayek and Langes's calculation debate happened between 1930s and 1950s and the second was the corporate planning debate of the 1990s between Ansoff and Mintzberg. The paper shows the similarities of the debates and analyses the general nature of planning which provides theoretical basis for the next two chapters.

Research background. This research was conducted between 2012 and 2014. The main inspiration for the research came from Kornai's system theory works (1990; 2011; 2012; 2013) which analyse the nature of socialist and capitalist economies. Based on my previous management science background I found some similar phenomena between corporate and economic planning. In 2012 I had the opportunity to visit professor Kornai's research seminar where I could elaborate my research. That time I started to examine the calculation debate in-depth.

During 2013 I could also visit professor Balaton's strategic management seminar. Once during an office hour he mentioned if I was interested in planning I should have read the debate of Ansoff (1991; 1994) and Mintzberg (1990; 1991) as well. After understanding the most important papers of the topic I realised two things. (1) The two debates have a lot of similarities. Albeit they happened in different times and contexts but both of them are about the nature of planning. (2) These similarities are not widely researched. I found very few papers analysing the relationship of economic and corporate-level planning.

Moreover I had to realise that economics and management sciences develop the field of planning in separate ways. In 2015 I had the opportunity to take part in a Strategic Management Society conference about headquarter-business unit relationships where very few planning or centralisation-related papers examined economic theories. Therefore I started to look for a general nature of planning based on the two debates mentioned above.

In 2015 this paper was published by the Hungarian Economic Review.



1. Figure Content of the first chapter.

Source: Author's compilation.

Question and method. The purpose of the first chapter is to answer the following question: what the main arguments of centralisation can be identified. The method of the paper is based on content analysis of the most significant articles of the field. During the examination of the sources I noted the main breakpoints and statements. Then I looked for patterns and similarities in both the calculation and the corporate planning debate. Of the dozens of characteristics, five criteria were the most frequently recurring elements in both debates which will be elaborated in the following chapter.

Results. The five issues are the following: the role of the headquarters; the behaviour of the organisation; information available to the organisation; differences of planning and implementation; and dynamism (Figure 1). Both debates pay a lot of attention on these topics which can be used to identify the most important centralisation-related arguments listed below (Table 2).

Conclusions. This research has several implications which are used in the following chapters. First, planning has general nature. On the one hand, it is worth applying or at least examining each other's planning models of economics and management science. On the other hand, one can identify political and economic arguments in such debates that are independent of the specific historical era or business entity concerned. Two of the most important statements are the following: (1) centralisation is good at global efficiency because it can make company-wide optimisations. (2) Decentralisation

INTRODUCTION

fosters innovation by local adaptation because it allows experimentations on the lower levels of the organisation as well.

	Arguments for central planning	Arguments against central planning
Role of the centre	Central planning could ensure optimisation for the whole organisation.	The central body cannot redistribute the resources properly.
Behaviour of the organisation	The plans of the centre are designed according to the interests of the whole organisation, so it is in the interest of its members to cooperate.	Unless the members of the organisation are directly encouraged to cooperate, the central plans will not be useful for the organisation.
Information available to the organisation	The centre is capable of (quasi) optimal resource allocation; that's where every piece of information should be directed.	The members of the organisation will always possess more topical local information that cannot be transferred to the centre adequately.
Planning and implementation	Both planning and control are facilitated by the strict separation of the planning and the implementation stages.	The implementation of plans drawn up earlier may not be adequate for the organisation at the given moment of time.
Dynamism	Significant change can only be realised by central planning.	Adaptation to significant change can only be ensured through the trials and errors of the members of the organisation.

2. Table Arguments for and against central planning.

Source: Author's compilation.

Second, centralisation and decentralisation are the two ends of the same continuum. The "illusion of extremities" part of the paper describes that neither end of the scale can provide successful long-term solution for the organisations. Too much decentralisation can result in uncoordinated activities and thereby in failure of organisational operations. On the other hand too much centralisation can cause too rigid structures and too much overhead costs. Instead of choosing only one side, companies are moving on the continuum perpetually to find the right balance between global efficiency and local adaptation.

Suggestions for researchers. It is always hard to identify the borders of a research but in the case of a comparison of two or more debates it is a crucial question. It is easy to add only one more article to the analysis but in the long run it can significantly deform the original research focus. To avoid this threat researchers must clearly identify the definitions beforehand (e.g. planning or centralisation). It helps keep research in order.

Suggestions for managers. Considering centralisation there is always a trade-off between global efficiency and local adaptation (or efficiency and innovation). It is not easy to find the right balance or to choose the adequate structure. But the main arguments of centralisation and decentralisation are always the same. The next chapter helps better understand how managers change concentration of authority in the time of crisis.

Further researches. This paper examined *where* the decisions should be made within the organisation (in the central headquarters or in the subunits). I think one of the most important theoretical topics of this field is the question of *how* decisions should be made (in authoritarian or democratic way). My master thesis examined democratic leadership therefore I could see how developed the management science is in this field. I think it would be interesting to compare a management science and a political science debate about authoritarian and democratic leadership. That can develop an alternative theoretical background for centralisation as well.

2.2. Centralisation of strategic decisions during the Great Recession

The second chapter is an empirical paper describing how economic crisis influences concentration of authority. Based on the EFIGE dataset this chapter can analyse one of the largest samples (more than 14,000 companies) of centralisation researches. The most important results of the multinomial logistic regression model are the following: (1) crisis increases the probability of centralisation; (2) centralisation is associated with other short-term policies; and (3) those companies which centralised during the crises realised slower growth in the next 3 years. These findings are the empirical background of the centralisation cycle conjecture.

Research background. Crisis and centralisation relationship was the original research topic of my PhD thesis which idea came from my master thesis. During analysing democratic leadership I conducted several interviews with organisational development consultants. The crisis-centralisation inspiration was based on two different interviews. One interviewee mentioned that in the time of crisis democratic forms decrease in populace. And few days later another consultant stated centralisation is less good at innovation. Based on these sources I formulated a research plan which was accepted to the PhD program in 2012.

I am sure this paper (or probably the whole thesis) could not have been completed if I had not met professor Muraközy in 2014. That time I asked him to give me feedback on my research when he mentioned he had a dataset with information about centralisation and crisis of thousands of companies from 2009. Thankfully I could join professor Muraközy's research group at Institute of Economics of the Hungarian Academy of Sciences where I could finish this study. During my research between 2014 and 2015 I could examine centralisation from both economics and management science perspectives.

Different versions of this paper were presented in several conferences such as symposiums of Association for International Business (2014), Hungarian Society of Economists (2014) and Strategic Management Society (2015). Based on several feedbacks, in 2016 with professor Muraközy, we rewrote the paper of which first draft is published as a working paper (Bakonyi and Muraközy, 2016). The final version is under review at an international journal.

Question and method. The main question of the second chapter is that how crisis influences concentration of authority. There are several papers which examined centralisation in the time of depression. This paper has three main contributions to the literature (1) it analyses one of the largest sample of the field; (2) it examines the relation of centralisation to other crisis policies as well; and (3) it investigates the mid-term performance differences on the same sample.

The European Firms in Global Economy: international policies for external competitiveness (EFIGE) project surveyed 14,759 companies about various topics between 2009 and 2010. It is a representative sample of European industrial (10+ employees) firms from seven countries: Austria (443), France (2,973), Germany (2,935), Hungary (488), Italy (3,021), Spain (2,832), and the United Kingdom (2,067) (Altomonte and Aquilante, 2012, p. 6.).

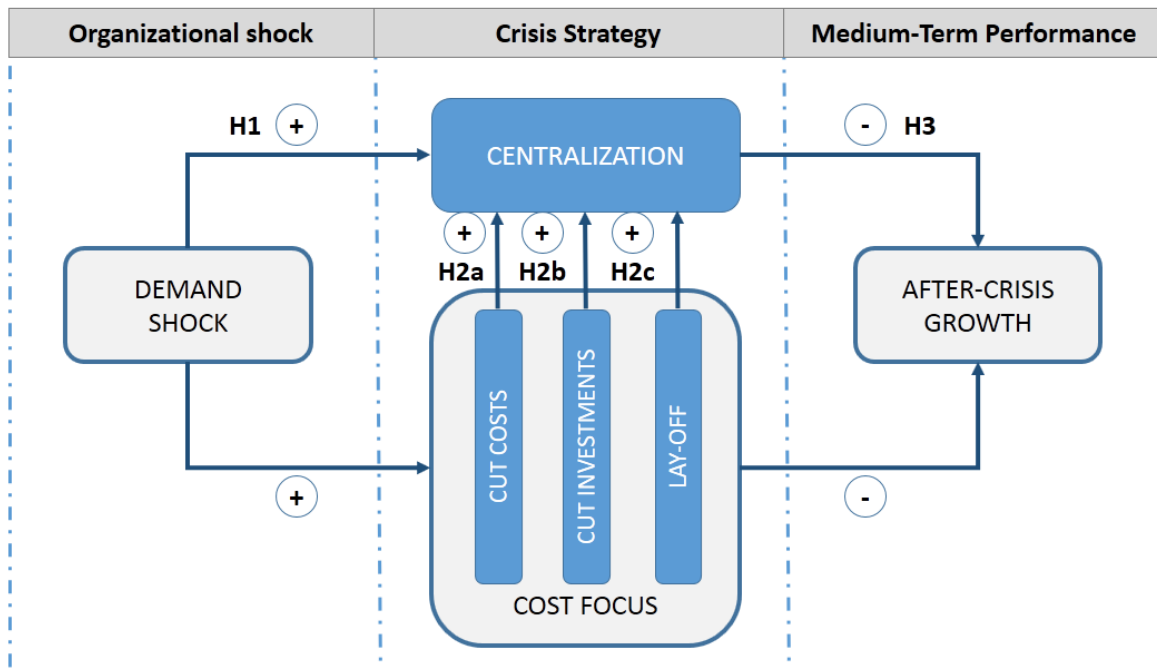
Examining the main question a multinomial logistic regression model was applied where the dependent variable was the change in authority concentration. It could be -1 if the company became more decentralised in 2009; +1 if it became more centralised; or 0 if there was no change at all.

Crisis, as the main dependent variable, was measured by the change of turnover from 2008 to 2009 (%). It was supported by various control variables such as country, size, and industry. To test the robustness of the results additional control variables were added to the original model as well.

In terms of measuring short-term strategic focus, we use a number of variables. The first of these measures was whether the firm considers cost-cutting as key to future success. This is measured by the answer to the following question: “With respect to your business, indicate the main competitive factors which will determine the success of your firm in the next years”. Managers answered to the question spontaneously, and the dummy is 1 if they mentioned lowering production cost as such a factor. Change in investment is a dummy coming from a similar question: “During 2009 has your firm reduced its planned investments in machinery, equipment or ICT?”. Finally, we also include a variable measuring whether the firm laid off any employees.

We have complemented these survey data in two respects. First, we were able to collect balance sheet and income statement data for 2009 and 2012 from the AMADEUS database for a large subset (nearly 8,000 firms) of the dataset which enables us to study the post-crisis performance of these firms. Second, during 2014 and 2015 we have made follow-up interviews with the top managers of 7 Hungarian and 6 UK firms to understand better their experience and help us to formulate our hypotheses. The chapter will use a few quotes from these interviews when discussing our hypotheses. Please note, in this paper the interviews are only illustrations for the theory-building. The methodology will be described in depth in the third chapter of the dissertation.

Results. The main findings of the paper were the following: (1) crisis increases the probability of centralisation; (2) centralisation is a complementary tactic to other crisis policies; and (3) centralisators realise smaller mid-term revenue growth. Interestingly there was no industry effect while most countries have different centralisation habits (Figure 2).



2. Figure Content of the second chapter.

Source: Author's compilation.

Conclusions. Albeit centralisation decreases three-year growth, companies implement such policy. This reaction emphasises the importance of behavioural approach to centralisation. There are several papers in the literature which state, during crisis decentralisation is the optimal choice, but still companies prefer centralisation. The purpose of the third chapter is to understand this behaviour.

Second, if crisis fosters centralisation, recovery may do the opposite. This hypothesis leads us to centralisation cycle conjecture describing that concentration of authority changes according to economic cycles. This concept will be the basis for the third chapter and the management accelerator effect.

Suggestions for researchers. Certainly definitions of centralisation can vary among papers. But even companies can define it in different ways which can hamper the clear understanding of the results. This paper focused on centralisation in strategic decision-making.

Suggestions for managers. In the short run centralisation can be very useful for companies to support cost-cutting and short-term actions. But in the long run it

hampers firm growth, thus firms should reconsider their strategic decision-making systems regularly.

Further researches. This chapter was a cross-sectional analysis but a longitudinal one could better describe the centralisation cycles. Because of the lack of time-series data, the cycles remain only a conjecture.

2.3. Why do firms centralise during the crisis even if it is not optimal?

This qualitative chapter shows that companies centralise because (1) managers think it is more effective; (2) they expect it makes communication easier; and (3) they lose their confidence in the middle managers during crisis. The interviews with British and Hungarian senior managers support the hypothesis of centralisation cycles viz. there may be a link between decentralisation and prosperity. Based on the empirical results a theoretical model is formulated which describes why companies maintain centralisation longer than it is optimal. Furthermore it provides a concept describing how adequate adaptation to economic cycles can result in competitive advantage.

Research background. The third chapter starts where the second one ended, namely after the econometric description of crisis-centralisation relationship it focuses on the root-causes of authority concentration during depression.

The methodological background of the chapter was mostly inspired by professor Bokor's qualitative methods PhD course which I could visit in 2012. In 2013 a preliminary research was conducted based on some unofficial meetings with company managers and some interviews in Hungary and in India where I spent three months as a business intern of Tata Consultancy Services. The information and interview experiences acquired during this stage became extremely important when I formulated the final research plan.

The actual research was conducted between 2014 and 2015. After a long period of interview making, the empirical data was analysed and structured. The current version of the paper was finished in 2016.

The previous versions of this paper were presented in the following forums: Conference of Hungarian Society of Economists (2015); Strategic Management Society

Conference (2016); and Budapest Management Review (2016). The final version is under review at an international journal.

Question and method. The main contribution of this paper to the literature is the qualitative analysis of centralisation decisions. As it was discussed before the second chapter showed that crisis fosters centralisation. But based on a longitudinal empirical analysis Aghion and Bloom (2014) state decentralisation is more beneficial during the crisis because it increases total factor productivity and growth. Therefore the main question of this chapter is that if decentralisation results in better performance why companies still centralise in the time of depression.

This research is an interview-based grounded analysis. The sample was based on the dataset of the EFIGE described in-depth in the previous chapter. Because of language barriers only English and Hungarian companies were analysed this time. To understand the centralisation decisions I tried to find those companies which (1) faced more than 20% turnover decrease in 2009; (2) centralised or decentralised their strategic decision making in 2009; (3) still operate (in 2014 or 2015); and (4) have at least one senior executive who was the manager of the company in 2009. To meet these selection criteria I searched the EFIGE dataset and the internet.

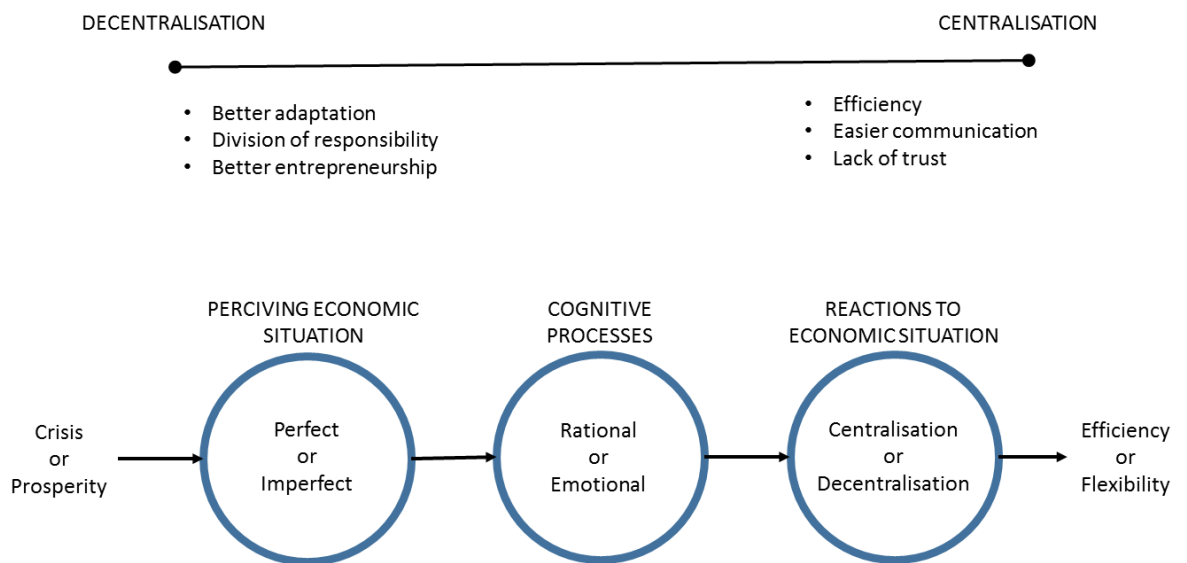
As a result 6 Hungarian and 6 English interviews were conducted in 2014 and 2015. Therefore with the one preliminary research interview from 2013 I had a sample of 13 companies. All of the (approximately 45-90 minute-long) interviews were recorded, typed word-by-word and after that sent back to the interviewees for possible edition or comments. Only the final, reviewed versions were used for the analysis.

At this point I must mention that all of my interviewees were very helpful and kind, therefore I would like to thank them. Unfortunately because of confidentiality agreements their names must remain hidden.

Results. Before examining the reasons of centralisation or decentralisation the chapter provides a rather long description about the process how companies react to crisis. Later it becomes very important because it will be the theoretical background for the model of centralisation cycles.

Based on the interviews centralisation is a crisis tactic. It can strengthen efficiency because it decreases the time of decision-making and allows firms to have a company-wide focus during considering crisis tactics. Furthermore even lack of trust can foster centralisation. Interestingly very few disadvantages of centralisation emerged during the interviews. Moreover nobody mentioned that centralisation may hamper innovation.

While crisis and centralisation relationship was rather strong and clear during the interviews I hardly find evidences for a link between depression and decentralisation. Companies in the sample decentralised because they wanted to involve new knowledge or information to the top decision units. But most of these decentralisation programs started before the crisis and they were related to previous growth or diversification rather than the depression (Figure 3).



3. Figure Content of the third chapter.

Source: Author's compilation.

Conclusions. The qualitative study supported the centralisation cycle conjecture viz. in the time of crisis companies centralise while during prosperity they do the opposite. But based on the interviews this adaptation to the economic cycles is not perfect namely, some companies maintain centralisation even in prosperity. The final part of the paper formulates a theoretical model describing why companies maintain

centralisation. The two main reasons are (1) the imperfect perceiving of economic cycles; and (2) the love of power.

Thereby we can state some companies are better at adaptation to economic cycles than others which can provide competitive advantage. Those companies which can centralise faster in the time of crisis can gain more efficiency than their competitors. And if the recovery starts those firms which decentralise more quickly can become more flexible than the rivals. This is the adaptation advantage.

Suggestions for researchers. First, very few interviewee remembered centralisation immediately. They either forgot it or did not use the word of centralisation for their action. Therefore I decided to mention their survey answers from EFIGE database which helped them recall the happenings.

Second, interestingly some kind of positive nostalgia emerged during recalling downturn. This “veteran” or “survival” emotion can influence their memories about the time of crisis. This phenomenon can be a very interesting research topic as well.

Suggestions for managers. First, centralisation has downsides therefore if it is maintained in a long run it can decrease company profitability. E.g. very few interviewees mentioned that centralisation can hamper innovation. Second, adequate reaction to economic cycles can provide competitive advantage. (1) Insightful environment perceiving mechanisms (e.g. controlling systems, relationship with stakeholders) and (2) thoughtful change management skills (e.g. small resistance to change or lack of power hunger) can lead to adaptive advantage.

Further research. In addition to “crisis nostalgia” phenomenon it would be interesting to conduct a longitudinal case study analysis about economic cycles and adaptive advantage. Furthermore this research should be continued on an Italian sample because according to previous results Italian companies are more open to centralise than Hungarian and English ones.

3. The Management Accelerator Effect

Management accelerator effect is a hypothesis which describes that the centralisation habits of firms can strengthen economic trends. To understand this hypothesis, two

phenomena should be analysed such as: (1) the crisis-centralisation interaction; and (2) the centralisation cycles conjecture.

Crisis-centralisation interaction. The main purpose of this dissertation is to answer the question what kind of relation can be identified between economic crisis and centralisation. As it was shown they interact in two ways. First economic crisis increase the probability of centralisation within the company. As we could see in the first and second chapters centralised companies are less good at innovation and they have smaller growth rates. Therefore, there is a second connection between economic crisis and centralisation. Because (1) firm performances influence the growth of the whole nation economy (by definition), and (2) centralisation decreases company growth, hence centralisation can probably influence the nation economy as well.

Centralisation cycles conjecture. As we could see in the second chapter, fall in turnover increases the probability of centralisation. Moreover, we could observe a not significant, but positive relationship between turnover increase and decentralisation. Based on the previous researches and our empirical findings a centralisation cycle conjecture can be formulated viz. during depression companies increase the concentration of authority and in the time prosperity they decrease it.

On the foundations of the empirical findings and theoretical background the last, summary chapter describes the management accelerator effect. The global efficiency of centralisation helps firms survive the crisis. But those companies can be more innovative than the competitors which decentralise faster when the recovery starts. On the other hand those firms which maintain centralisation longer than it is optimal can face a longer recession and slower recovery. This phenomenon can influence the growth of the whole nation economy as well. The management accelerator shows how (de)centralisation as firm-level adaptation capability can strengthen growth or lengthen crisis in the economy.

Summary

Concentration of authority is an important aspect of strategic management because it influences company performance. Centralised management is better at global efficiency because it can optimise for the whole company and the small number of

central decision-makers can make faster decisions. On the other hand decentralised management can strengthen local adaptation by fostering entrepreneurship and empowering the local bodies which possess more information than the centre.

Certainly there is no “pure-form” of centralised or decentralised strategic management they are only two different sides of a same continuum where companies can move. Unfortunately neither ends can provides a perfect solution. Illusion of local adaptation can emerge as a result of too much decentralisation. In this case firms will lose their coordinative force within the company. It has extremely high operational expenses too because of the unnecessary duplications. On the other hand illusion of global efficiency is a consequence of too much centralisation when the authoritarian headquarters cannot make adequate decisions because they make too many simplifications. Its operative costs are also extremely high because of the huge overhead unit.

In the time of crisis companies centralise their strategic management for several reasons. First of all they can gain efficiency which is crucial during demand shocks. Second threat and anxiety can emerge in crisis situations which increase the need of control inside the organisation. Furthermore decrease of organisational trust can strengthen this phenomenon. Decentralisation is more related to prosperity when companies would like to gain local adaptation and foster entrepreneurship. The centralisation cycle conjecture describes this relationship between economic cycles and change in concentration of authority.

But unfortunately companies imperfectly adapt to the economic cycles because they cannot perceive environmental changes perfectly and power struggle can hamper the transformation as well. Moreover centralised organisations are less open to decentralise. Therefore firms can gain competitive advantage if they adapt to the environment in a better way than the rivals. In the last, summary chapter, the management accelerator effect conjecture shows how centralisation habits influence economic cycles.

CHAPTER 1: COMPARISON OF CALCULATION AND CORPORATE PLANNING DEBATE ABOUT CENTRALISATION

ON THE GENERAL NATURE OF PLANNING

Author: Zoltán Bakonyi

There are many similarities in the calculation debates of Mises, Hayek and Lange dating from the 1930s, and the corporate planning debates of Mintzberg and Ansoff that took place in the 1990s. Based on the arguments advanced there, one can formulate a general planning model applicable to both national economies and companies. This model deduces the centralisation of planning from the informational and behavioural aspects of resources and from the coordination mechanisms. Centralised planning enhances global efficiency, whereas decentralised planning boosts the local adaptability. The excessive pursuit of either extreme, however, will wreck organisational operation.

Introduction⁴

The in-depth analysis of economic and corporate planning will bring us closer to understanding the general nature of this activity.

The present study compares the debates conducted on the topic of the planned economy in the 1930s with those on corporate planning in the 1990s. Despite occasional references to the historical perspective, it is definitely not an economic history paper. It does not aim at understanding the social changes and history of economic thoughts developments of the ages concerned, but compares the outcomes and conclusions of productive debates that took place in two eras. The idea of centralisation is becoming increasingly popular in Hungary nowadays. However, this paper is not a political pamphlet nor a public service analysis. Instead of the power technical strand of centralisation, it is interested in its theory of firm and economic systems aspects. Consequently, it is closer to a management science analysis in terms of genre as well as approach, and it relies to a large extent on the findings of theoretical economics and strategic management.

The objective of this paper is to analyse the nature of planning in more depth, to identify the arguments concerning the centralisation of planning, and to construct a general planning model through these.

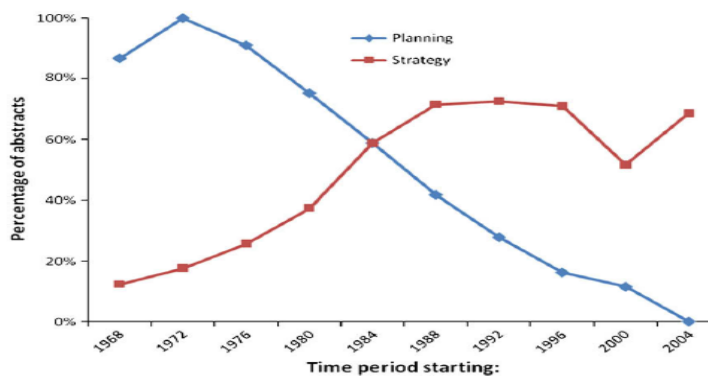
Chapter 1 describes the topicality of this issue, followed by a brief presentation of the contexts of the two planning debates in Chapter 2. Chapter 3 compares the two debates by five criteria (the role of the headquarters, the behaviour of the organisation, information available to the organisation, differences of planning and implementation and dynamism). Each sub-chapter ends with a summary of the key breakpoints and results associated with the criterion under study. Chapter 5 outlines a general planning model (equally applicable to an economy and a company), interconnecting individual-level information, behaviour, coordination and the planning systems, and it is followed by a summary chapter.

⁴ Acknowledgement. This paper could not be possible without Dr János Kornai's and Dr Attila Chikán's support for which I am really grateful. I would like to thank Dr Miklós Rosta for guiding me by valuable feedbacks. Last but not least I thank for the support of Firm, Strategy and Performance Lendület Research Group of Hungarian Academy of Sciences. This paper is dedicated to the Rajk College for Advance Studies and thank for the inspiration and everything else of course.

1. Three reasons why you should not read this article

1.1. The topic of planning is not a common one today.

Planning is not a fashionable term in today's management science. The research of Cummings and Daellenbach (2009) (content analysis of the management science journal Long Range Planning) found that the term gradually fell in disuse in management science terminology in the past three or four decades, with strategy gaining ground instead (Figure 4). In this sense, the research of planning is neither topical, not a novelty.



4. Figure The decline of planning and rise of strategy in LRP abstracts.

Source: Cummings – Daellenbach (2009, p. 245.)

I consider corporate planning a strategy school, based on Mintzberg et al. (1998). I interpret strategy as the guideline of the system of corporate activities (Chikán, 2008) that defines the objectives being set and the roads leading there. Accordingly, corporate strategy may be intended or emerging (Mintzberg, 1990), whereas planning as I see it is a deliberate, quasi-analytical, future-oriented, feedback-sensitive process that coordinates the members of the organisation to let them attain their common goals. Planning needs to be seen as a process, since the both the determination of the objectives and the pathways to achieve them, and the relevant implementation process are sets of complex activities themselves (de Ven, 1992).

Planning is future-oriented of necessity, since it defines objectives to be attained in order to alter the position ever of the organisation. It is deliberate, that is, the planning staff analyse the possible options and choose one by calculation, in line with their preferences (Simon – March, 1993). The quasi-analytical quality shows, on the one hand, the limited rationality of the individual that prevents perfect optimisation

(March, 1978) and, on the other, that in addition to calculation, decision-making requires also intuition (Ansoff, 1964).

Feedback is crucial for the organisation to periodically compare plan and fact and institute changes if necessary (Anthony – Govindarajan, 2009). Planning is an important function of the members of the organisation, the same as the alignment of their activities in order to achieve their common goals.

In view of the above, I will interpret planning as defined above, in a broader sense, instead of using the term as the (old-fashioned) synonym of corporate strategy, and this will hopefully facilitate the comparison of corporate and economy-level planning.

1.2. The topic of planning goes back a century, so we must certainly know everything about it by now

I encountered countless parallels with management science in the literature of the planned economy discussing e.g. budget gaming, basis planning, information processing etc. When I told fellow researchers about my observation, many said that this was common knowledge and planning itself had been researched for more than a century.

A review of the more than eight thousand articles of five prominent economic science journals (Table 3) comprising the term ‘planning’ has shown that only 61 among them make reference to any of the main constituents of the calculation debate⁵.

	Hayek	Mises	Lange	SUM	Number of "planning" papers
AMJ	2	1	0	3	501
AMR	7	1	1	9	1123
MS	5	1	5	11	3942
OS	17	4	2	23	1223
SMJ	14	1	0	15	1368
SUM	45	8	8	61	8157

3. Table Planning-related articles and the calculation debate.

Source: Author's compilation.

⁵ The following journals were researched by the Jstor searching interface in 30th of October, 2013: The Academy of Management Journal (AMJ) 1958-2007; The Academy of Management Review (AMR) 1976-2007; Management Science (MS) 1954-2007; Organization Science (OS) 1990-2007; and Strategic Management Journal (SMJ) 1980-2007.

Of course, one cannot expect every article on planning to address the calculation debate or specifically its history-of-economics origins. Let us add, moreover, that the above five prominent journals do not represent the entire management science literature – however, it is noticeable that the part of management science dedicated to planning pays very little attention to the calculation debate⁶.

Therefore, beyond the research of the nature of planning, the objective of the present study is to interconnect two special fields (theoretical economics and management science) along the dimension of planning, such interconnection being a scarcely researched topic in the relevant literature.

1.3. Comparing theoretical debates has no direct benefit

What practical benefit can a study linking 8- and 3-decade old scientific debates have? I agree with my fellow researchers that this topic has been researched for a long time. I do not think that a single, final, ‘yes-or-no’ answer could be given to the question whether it is worthwhile to have centralised planning or not, and this paper will certainly not set out to do that. The issue itself, however, is on the agenda today, and the relevant discourse has intensified in the post-crisis economies.

A review of the planning debate may bring into the foreground arguments for and against centralised planning that tend to recur irrespective of era or economic situation. It may reveal specific economic correlations and also provide a new understanding of the centralisation of planning in terms of the technical aspects of argumentation.

In the following, I will investigate the similarities of the calculation and corporate planning debates, in the hope that my research can be useful for the planning professionals of several fields. 1. Understanding the identical features of economic and corporate planning can bring us closer to the nature of planning and to a general planning model. 2. Understanding the linkages of the two special fields will facilitate the theoretical as well as practical use of their specific results. 3. This exercise will let us identify the economic or political arguments concerning centralised and decentralise planning that recur irrespective of era, field of science or economic entity.

⁶ None of the corporate planning debate articles quoted (Ansoff, 1990, 1994; Mintzberg, 1990, 1991) the constituents of the calculation debate.

4. Identifying the theoretical boundaries of planning may give a hint as to where the boundaries of practical implementation lie.

2. Two fields of science, two debates, similar topic

In the following, I will briefly present the respective contexts of the two planning debates.

2.1. Background of the calculation debate

The referenced debate in the 1930s focused on whether the national economy could be directed at all by deliberate central planning and if so, in what way. It compared the capitalist and the socialist system. The technical literature on the history of theoretical schools refers to this as the ‘calculation debate’. The authors I quote continued their debate on the operation of the socialist and capitalist regimes with experience of the planned economy in the 1940s and 1950s, but that can no longer be regarded as being part of the calculation debate. For the sake of simplicity, however, in the following I will refer to the entire series of debates as ‘the calculation debate’.

Marxian theory says that the socialist economy is organised by central planning that is supposed to result in a fairer distribution (Kornai, 2012). Gossen had stressed already in the 19th century that central planning would exceed the capabilities of people (Hayek, 1995). The debate unfolding in the 1930s was the theoretical debate on the socialist planned economy, by Ludwig von Mises, Oskar R. Lange and Friedrich A. von Hayek⁷.

Lange, who was of Polish origin, argued that central planning could determine the social optimum (Lange, 1936), whereas Mises and Hayek doubted the feasibility of any such aggregation of information and preferences (Mátyás, 2003). Reisman (1998) considers Mises the first significant, intellectual defender of capitalism and one of the most decisive representatives of the new Austrian school⁸, together with Hayek.

Although the socialist planned economy had existed in practice exclusively in the Soviet Union (Kornai, 2012) at the start of the debate, the theoretical debate raised considerable attention in the scientific community.

Contemporary professional public opinion finally concluded that Lange, arguing in favour of the feasibility of social central planning, was right (Madarász, 2002b). In the

⁷ Another prominent participant of the debate was Abba P. Lerner; see e.g. Lerner (1936).

⁸ For more details on the new Austrian school, see Madarász (2002a).

late 1940s, Lange continued the debate based on practical experience already, and that circumstance has led to the adoption of more refined positions. Some actually consider him the father of market socialism, based on his theoretical concepts (Kornai, 2012).⁹

Hayek (1944) stuck to his position against socialist central planning on the ground that it could not ensure the efficient distribution of the resources, and centralisation required a totalitarian state. Hayek, temporarily isolated by professional public opinion, won the Nobel Prize for economic science in 1974, together with Myrdal, for their work on the theory of money and economic fluctuations (Madarász, 2002b). Given the fact that, by the early 1990s, almost the entire socialist bloc had collapsed (Kornai, 2011), the critique of Mises and Hayek has been confirmed by empirical evidence.

Kornai (2012) makes it clear that understanding the socialist system is inseparable from its ideological foundations. This paper, however, investigates the planned economy in general, and not the socialist system. One of its key messages is that planning has some general qualities, whether you study a national economy or a small business. Therefore, I will focus primarily on the statements of the debate related to the general theory of planning, and not on its ideological content.

2.2. Background of the corporate planning debate

The corporate planning debate can be identified as the clash of the various strategic management schools. One of the central issues of strategic management is how to provide a company a sustainable competitive advantage (Grant, 2008). Mintzberg et al. (1998) distinguish ten strategy schools, including prescriptive and descriptive ones. Prescriptive schools express in a prescriptive way how a given company can obtain a sustainable comparative advantage, whereas the descriptive ones undertake to describe primarily the unfolding of corporate strategy.

As for the historic antecedents, formal strategic planning started to gather strength at the large companies in the 1960s (McKiernan, 1996), in the wake of the work, among others, of Ansoff (1964). That decade was characterised by the predominance

⁹The debate on the feasibility of central national economic planning recurred in theoretical economics later (Móczár, 2008), but my paper focuses primarily on the theoretical debate of Mises, Hayek and Lange. For more details, see e.g. Arrow and Debreu (1954), Arrow and Hurwitz (1960), Kornai (1971), (2012).

of the Harvard school focusing on the business unit strategies and the internal and external strengths and weaknesses of companies (SWOT) (Balaton – Tari, 2007). Under the impact of the oil crises of the 1970s, companies tended to focus on their external specifics and then, from the 1980s on, on their internal resources (Grant, 2008).

The corporate planning debate took place in the 1990s and its two prominent figures were Henry Mintzberg and Igor Ansoff (McKiernan, 1996). The point of departure of the debate was the critique expressed by Mintzberg in 1990, condemning the prescriptive approaches and, in particular, the design school that put the senior manager orchestrating the deliberate planning process in the centre. In his opinion, the descriptive learning school came much closer to the essence of strategy and could even render the company more flexible. In his answer, Ansoff (1991) defended the design and the planning¹⁰ schools, highlighting that the organisations needed an articulated strategy, and that could take shape during planning. This round was followed by their respective rejoinders in the columns of the Strategic Management Journal and of Long Range Planning. Although their standpoints approximated with time, no synthesis has been reached¹¹. The debate inspired several researchers who also underlined the option of applying the two approaches in unison¹².

3. Similarities of the two debates

In the following, I will compare the two debates based on five criteria. I started my investigation with the analysis of the most significant articles, noting the main breakpoints and statements. Then I looked for patterns and similarities in both the calculation and the corporate planning debate. Of the dozens of characteristics, the five criteria to be discussed in the following were the most frequently recurring elements in both debates. The issues concerned are the role of the headquarters, the behaviour of the organisation, information available to the organisation, differences of

¹⁰ According to Mintzberg et al. (1998), both approaches (design, planning) are different schools. The main difference is that, in the planning school, the central actor is not the senior manager alone, but the planning department responsible for the calculative tasks of planning. Later on, planning and learning became the decisive topics of the debate, and the design school appeared explicitly to a smaller extent.

¹¹ Although, according to a personal conversation with Jay Barney, father of the resources-based theory, they chaired a section jointly after the debate at a conference of the Strategic Management Society.

¹² For more detail, see the opinion of e.g. Goold (1992), and the quantitative work of Brews – Hunt (1999) and the qualitative one of Grant (2003).

planning and implementation and dynamism. Each subchapter ends with a brief summary of the main breakpoints and of the main arguments and conclusions.

3.1. Role of the headquarters

A key issue of planning is who should do the work and how. I will highlight below the similarities in how the two debates formulate the theoretical and practical aspects of the functions of the planning headquarters.

In the debate concerning the planned economy, Mises (1945) declares that the most significant difference between socialism and capitalism is that resources allocation is done by the Central Planning Office in the first and by the entrepreneurs themselves in the second.

Lange (1947) considered resources allocation a function of the headquarters, conducive to the absence of any unused resources (surplus labour included). However, optimal resources allocation requires a goal that sets the course for the allocation decisions: this is the maximisation of social welfare. The centre will also be able to interpret costs that capitalist entrepreneurs could not interpret one by one, such as the cost implications of (environment-) polluting production.

Hayek (1994) declares that there is no planned economy without strong central state power: one cannot define exact plans democratically. The state must issue precise and detailed instructions (that will inevitably curb the powers of the company managers) and, at the same time, be flexible enough to institute changes if need be which, in turn, requires a fast flow of information.

In the context of the corporate planning debate, Mintzberg (1990) advanced his view that the design school gave priority to the senior manager as the person who ultimately defines the strategy. This strategy formulation is a deliberate process, conducted by a strong manager in a weak organisation and, therefore, the role of the manager is of outstanding importance according to the design school. Mintzberg, however, considers this an obsolete approach, on the ground that the central strategy is, in many of the cases, not a deliberately defined construct, but rather a series of unfolding initiatives.

Ansoff (1991) contests this approach. In his opinion, Mintzberg envisions a world without managers, without central coordination, disregarding that fast central

decision-making can grant the company a time advantage and, consequently, determine also its competitive edge, even in the turbulent 1990s.

Both debates highlight the main roles of the planning centre and the consequences of its behaviour and evaluate them at theoretical as well as empirical level. At theoretical level, the central planning unit of a business organisation is responsible for formulating the strategy plans and allocating the resources. The manager and the planning staff -- more capable, theoretically, of considering the overall interests of the organisation in their decisions than individual members of the organisation -- play a special role in both the determination of the objectives and the allocation of the resources. To do that, the planning centre must have extensive licences to be able to influence the behaviour of other members of the organisation. To draw up a complete plan, however, they have to be supplied with the fullest range of information.

The practical approach to the debates, however, stresses that it is often impossible to ensure the adequate flow of information and, therefore, it is worth decentralising certain elements of central planning. On the other hand, it is stressed that the organisation may deviate from the centrally formulated strategy due to the headquarters' lack of information or the fact that members of the organisation are forced to make modifications.

3.2. Behaviour of the organisation

Since I conceived both debates as being about planning at economic organisations, I have to present also how the individuals/groups making up the organisations, having their own preferences, appear in the respective approaches of the debating parties.

According to Mises (1951), the focus on profits is what makes the entrepreneur interested in finding the appropriate resources combinations. This interest is absent from central planning. Anyway, capitalism posits the freedom of the individual and, in particular, the freedom of choice, whereas the planned economy exercises the authoritarian power of the state.

Lange (1936) declares that in the socialist planned economy, company managers must focus on the combination of factors and the quantity of the output and ensure that their marginal costs do not exceed the centrally defined price. This eliminates the profit motive, but lets a collective advantage manifest itself at the level of the economy. Lerner's (1936) critique to it is that, given the complexity of the task, it is

impossible to optimise the above two factors by keeping an eye on marginal cost, without profit maximisation by the company manager, so the profit motive does not disappear from the economy after all. Later on Lange (1937) agreed to that to some extent, refining his position to the statement that the above criteria can serve only as reference bases (since it is very difficult to determine the marginal cost in multi-actor branches). In his opinion, the key requisite for an effective planned economy is the consistency of the decisions and the plan.

However, another point of view needs to be highlighted as well. As Hayek (1944) put it, the key question concerning economic planning is whether to let the individuals do the planning or relegate management as such to a centre/the headquarters. He deemed collective action feasible provided that the participants agreed on some common objectives. In the planned economy, however, this can only be realised to a limited extent.

One can distinguish more and less centralised planning procedures in the context of central planning. Lange (1957) said that originally underdeveloped, centrally planned economies emphasise intensive industrialisation which demands strong centralisation, for two reasons. Firstly, the resources must be focused on industrialisation, and that is facilitated by centralisation. Secondly, centralisation is well-justified by the fact that the new cadres at the head of industrialisation are inexperienced, whereas the old, experienced cadres are often politically hostile to socialist power.

In the context of the corporate planning debate, Mintzberg (1990) expounds that the design school considers the worst enemy of the organisation the opportunism of its members who are unwilling to execute the strategy. Planning can only be realised if the whole organisation is ready to adopt the strategy.

In the opinion of Ansoff (1991) (contrary to the preliminary critique of Mintzberg) the planning school does address the behaviour of the organisation. One of the resulting concepts is that of strategic myopia, i.e. the assumption that the members of the organisation may be short-sighted and unwilling to change – so managers should aim at developing a culture where organisational resistance is not significant (Ansoff, 1994).

Mintzberg (1991) acknowledges that central decision-making can be fast, but says it is to no avail if the organisation does not act on the results. On the other hand, he considers it important for the organisation to be able to adapt to its environment, and underlines that management based on the learning school can boost that capability. Such learning, however, must never be formalised, nor centrally managed.

Both debates stress that the attitude of the members is crucial for planning, both in the formulation phase, in ensuring the appropriate flow of information, and during execution. The incentives, to be developed mainly by the planning centre, are particularly important. They highlight in this regard the options of bureaucratic control (strong central management), market control (profit orientation) and clan (cultural) control.

The more the members of the organisation agree on the objectives, the easier it will be to achieve them. The potential veto right of the organisation is given special emphasis as a means for the resistance of the organisation to block the planning process or its implementation. (Political) cooperation with the members is of particular importance in both cases. For, some components of organisational operation cannot be formalised, but they are nevertheless indispensable for operation and adaptation, and organisational learning is one of them.

3.3. Information of the organisation

The quantity, quality and method of the flow of information within the organisation is key to planning. Let us review now the two debates from this aspect.

How to link information and motivation is a crucial point in the planning debates. According to Mises (1949), in the context of the comparison of socialism and capitalism, instead of comparing automatism and deliberate planning, one should compare the spontaneous activity of the individuals and the interventions of the administration. In capitalism, even the entrepreneur finds it difficult to forecast the future (this is the reason for the performance differences), and the task would be even more difficult for a central planning unit.

In the opinion of Lange (1936), the socialist Central Planning Office can have at least as much information as a capitalist entrepreneur¹³. In socialism, the high flow of

¹³ What is more, in his opinion, unemployment in capitalism is the result of the future-related errors of capitalist entrepreneurs (Lange, 1942).

information may be the result of the double pricing system, i.e. the process whereby economic actors declare the quantities they need of each product, central planning aggregates the results and sets the prices accordingly (Lange, 1942).

The counterargument is that no one can grasp every piece of information, this is why decentralisation, supported by the price mechanism, is needed (Hayek, 1944). The situation is aggravated by increasing specialisation and the consequent contraction of the field of view of each economic actor. The price mechanism together with the profit motive ensure that economic actors use information more efficiently in a decentralised way than any single central planning agency could.

One of the arguments in the corporate planning debate is that company managers are not aware of or do not agree on the strengths or weaknesses of the company that should, according to the design approach, represent the basis of the strategy. Mintzberg (1990) proposes to approach strategy primarily from the side of learning, to let the members of the organisation develop their capabilities locally and enhance the adaptation capacity of the organisation. The planning approach is feasible exclusively in a stable environment or if the centre is in possession of every piece of information it may need.

In his critique, Ansoff (1991) accuses Mintzberg of being in favour of total organisational uncertainty when he says that the company should not formulate a strategy in possession of limited information. Without some central guideline in the strategy, the organisation cannot function properly so, according to Ansoff, Mintzberg is mistaken in giving priority to the learning school. However, he acknowledges that planning is both a creative and a rational process that requires versatile approaches (Ansoff, 1994).

Both debates highlight that in case of planning, information must be obtained from the organisation, to serve as the basis of the plans. The planning centre may not be aware of the specifics of the organisation, so the members need to be involved in strategy-making. This can take the form of continual consultations, or decentralised planning. They re-emphasise the substantial role of the incentives in information sharing. The members can always have information advantages relative to the planning centre, since they know the local specifics best, either because that information is special or because it is fast-changing.

3.4. Disparity of planning and implementation

Both debates discuss the potential deviation of planning and plan implementation. They consider it a key issue of continuous operation and dynamic adaptation.

Lange (1936) stresses the importance of the *trial and error* method, pointed out also by earlier economic thinkers (e.g. Taylor and Barone). This process would take place between the planning centre and the companies, and ensure the continuous approximation of the prices. Approximation would make it possible to simulate the price mechanism itself and, in the end, the Central Planning Office can determine the equilibrium price in socialism.

He mentions in his later work that the various economic actors accumulate knowledge concerning the system itself during socialist central planning and, after the initial period, this opens the way to enhanced decentralisation, since even a less centralised planned economy could function effectively in possession of such accumulated experience (Lange 1957).

Mintzberg (1990) criticizes the design school of corporate strategy for the absolute separation of the stages of strategy-making and implementation. He deems this a drawback that cuts off the strategy-maker from real business, and prevents proper adaptation. On the other hand, the advocates of the design school think it is important to simplify the plans to reduce the excessive workload of the senior management. Such over-simplification, however, may confuse the organisation and aggravate its operation. The learning approach, on the contrary, gives ample ground for experimental learning.

Ansoff (1991), on the other hand, stresses that the need for periodical strategy-making had been superseded in both the planning and the design school, and he proposes real-time response instead, to prevent that strategy-makers be really cut off from everyday business operation. This can be promoted by involving the executive staff in strategy-making in addition to the managers (Ansoff, 1994).

Mintzberg (1991) answers that a strategy made explicit often makes more harm than good. True, the organisation has a guideline as a result, but adjustment to obsolete plans can make the organisation fall back. In his opinion, the success of certain companies (e.g. Honda) actually lies in their capacity for change and for revising their plans.

The relationship of planning and implementation is essential for a business organisation. If the two get separated, there will either be a shortage of information to formulate the plans or their implementation will be an unrealistic venture. Therefore, continuous consultation is needed between the planning centre and the rest of the organisation. Trials and errors, experimental learning, are essential to find the optimum – either to acquire new information to draw up the plans or to ensure operation. Adaptation can be achieved through the occasional review of the plans. Several parties to the debates underline that knowledge can be accumulated also in regard to the planning system.

3.5. Dynamism

The need to respond to the changing environment and the time constraint this implies for planning are focal points in both debates.

Lange (1942) stresses that while the method of calculating the current equilibrium is far from obvious in itself, the biggest challenge for a planned economy is to treat the changes of the future. His 1952 work assessing central planning in practice (e.g. in Poland and Czechoslovakia) points out that the degree of centralisation in planning is definitely not constant. He considers strong centralisation quite useful during industrialisation for several reasons, but in the long term it makes the economy lose some of its flexibility, so a certain degree of decentralisation is always welcome.

Those who argue against central planning say there is no static economy, there are only dynamic ones, and that is another criterion acting against the feasibility of central planning (Mises, 1951). According to the liberal economic view, the laissez-faire approach ensures the adaptation of the economy to the continuously changing social needs (Hayek, 1944).

In the corporate planning debate Mitzberg (1990) advances the argument that empowering the members of the organisation is essential for innovation, but this is thwarted by strong central planning where the plans confine the thinking of the organisation. What is more, in case of uncertainty, it may be better to have no specific plans at all, because the members can then act more flexibly.

Ansoff (1991) rejects Mintzberg's contention that planning is not possible in a dynamic environment. The time advantage is one of the most important factors of a dynamically changing environment, and centralised decision-making gives an

opportunity to boost it. Ansoff suggests to distinguish two kinds of environmental dynamism: incremental turbulence and discontinuous turbulence. The first refers to evolutionary change, to be answered by small changes, whereas the second demands some radical reaction. According to Ansoff, Mintzberg's emerging strategy concept is viable only in the first case. Moreover, some organisations actually apply planning to cope with radical changes and to ensure greater organisational stability and make their activities more predictable (Ansoff, 1994).

The idea of dynamism being one of the main hindrances to planning is present in both debates. Planning requires the biggest possible amount of relevant information but, with the passing of time (and the changes of the environment or the organisation) such information may become outdated. Consequently, response to the planning challenge implied by dynamism must be reflected by plan review and adaptation. Some authors consider it hardly feasible and others not feasible at all to treat dynamism by planning methods. The idea was raised to differentiate somehow the variability of the environment on the one hand, and the relevant organisational responses on the other. With that, however, we get back to ideas of decentralised planning and the empowerment of the members of the organisation to use the experimental method.

This chapter compared the calculation and the planning debate based on the criteria of the role of the headquarters, the behaviour and information of the organisation, the discrepancy between planning and implementation and dynamism, respectively. I identified the main breakpoints and arguments as well as the conclusions at the end of each section. It can be established on the basis of the above that the two debates show marked similarities in their discussion of the features of planning.

4. A general planning model

In what follows, I will define a general planning model based partly on the similarities identified above; a model that may serve as the basis for future research and bring us closer to understanding the nature of planning. While discussing the structure of the model, I will always refer to the relevant constraints imposed by the framework system.

The model presented below is a general framework for economic organisations, whether in the context of an economy or a company. Its building blocks are the individuals who gather into organisations driven by the recognition that they can realise more significant benefits collectively than one by one (synergy effect). They will only join a given organisation if they can maximise their own profit through their contribution (e.g. of labour or resources). The organisation may be a sector operated in the form of central planning, or even a national economy, or an established large company or a start-up.

Let us make two remarks at this point. Firstly, the model does not examine the way business organisations are created nor, for that matter, the way institutions regulating the national economy come into being or how companies are established. Secondly, the organisation indicated above does not stop, in the case of the national economy, at the country borders, but includes the total range of its activities covered by state planning. Consequently, in the context of the national economy, we can speak of proposal-making, indicative planning (Masse, 1962) rather than exclusive, imperative planning underscored by repression (Baron, 2004).

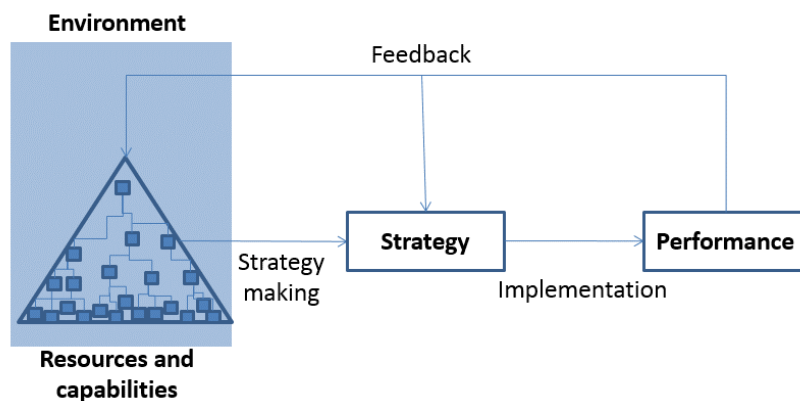
Growing complexity is conducive to the differentiation of the organisation into a strategic headquarters and operative units. *Strategic headquarters*: The objective of the strategic centre is to design the roads leading to the goals of the organisation, based on the portfolio of available resources; its function is strategy-making and, consequently, resources allocation. To realise that, it has substantial decision-making powers within the company. It functions in a differentiated organisation and can thus have decision-making powers over several operative units. The body responsible for planning can be the planning office of an economy or its budget-planning agency, the headquarters of a multinational company or the head of a small business

Operative unit: The objective of the operative unit is to ensure the optimum output based on the portfolio of available resources, i.e. it has an operative-type function. Consequently, it can be a production unit in a company (where the components of the resources portfolio are the production line, the staff doing the assembly work or responsible for material handling etc. and the output is the product itself), or a legal department (providing legal representation to the company based on their knowledge of law, the database of legal regulations, the courtroom etc.). Or, it can be a

directorate operating a given sector or it can be a state-owned company. Operative units have more limited decision-making powers than the strategic headquarters, since the latter can exercise its decision-making and accountability-related competences over them.

It is reasonable to assume here that the centre had originally had decision-making powers over the entire resources pool and subdivided that among the units. Consequently, each and every activity is assigned to at least one specific unit. Therefore, this paper will not discuss planning by juxtaposed entities (e.g. strategic alliances).

Note, moreover, that the above-mentioned differentiation can be carried on down to the level of the individuals that is, mammoth companies can be broken down to member companies, business lines, functional departments, groups and employees. There will be planning and executive units in each case, without assuming a perfect hierarchy.



5. Figure Schematic view of resources-based strategic management.

Source: Author's compilation.

Figure 5 shows a schematic view of planning by economic organisations. As can be seen, the organisation has various resources that represent the basis of the organisational strategies developed in the strategy-making stage and focusing to a large extent on the environment of the organisation¹⁴. The resulting strategy will define the operating framework of the company, and thus it will impact on

¹⁴ The competitive environment and the legal, cultural, social and natural environment affecting organisational strategy and structure can also be assigned there. For more detail, see: Porter (1998), Burns – Stalker (1961).

performance during its implementation. Finally, performance control, strategy ¹⁵ revision and resources development take place as part of the actions triggered by the feedback mechanisms.

The allocation of the resources at the disposal of the company is a central issue of strategy-making, implementation and feedback. For, resources management can always be linked to an informational and a behavioural aspect. The inherent challenge of the *informational aspect* lies in the cognitive limits of human beings, i.e. their inability to process any amount of information, without any upper limit (Simon, 1978). The essence of the *behavioural aspect* is that the members of the organisation are autonomous actors who have their proper objectives and motives (Simon – March, 1993).

One consequence of these two aspects is that the same resources are perceived differently at different places in the organisation, that is, no one is familiar with every resource and everyone is most familiar with those in his/her direct vicinity¹⁶. Therefore, the strategic headquarters must involve the operative unit in strategy-making and delegate powers to it. On the other hand, information asymmetry and the divergent goals of the internal stakeholders may give rise to agency problem (Jensen, 1990). That is, the goals of the principal (in our case the strategic headquarters) may not coincide with those of its agent having the information advantage (the operative unit that is more familiar with the resources). Therefore, control mechanisms need to be introduced in the organisation to make the agency problem manageable.

In view of the above two aspects, an authority and accountability structure is developed at the company. On one side, the lack of specific local knowledge puts pressure on the strategic headquarters to delegate more extensive powers to the operative unit, because it would not be able to handle a large amount of information alone. On the other side, however, there is a risk that the operative units either abuse

¹⁵ It follows from the definition of planning quoted in the beginning of the paper that a vision based on managerial intuition can also be called a strategy, so the above model is applicable equally to e.g. an idea proposed by a small entrepreneur, or the compilation of the budget of a national economy.

¹⁶ It does not have to be specialised professional knowledge by all means, it can also be general knowledge (such as the knowledge of the shop owner of what kind of bread his customers love most). Hayek (1995, p. 243.) called this knowledge of the specific place and time.

their advantage, i.e. use the resources for their own benefit¹⁷ or, without assuming any special intention on their part, they cannot optimise them at the level of the organisation.

The organisation must coordinate somehow the resulting *authority and accountability structure*, and that can be investigated by looking at the coordination mechanisms. Coase (1937) says the *raison d'être* of the company is that it coordinates the business activities more efficiently than the market. Williamson (1981) stresses the presence of bureaucratic control (hierarchy) within the company, and market control without it.

One encounters a combination of various coordination mechanisms at the company, the same as at the level of the national economy¹⁸. Ouchi (1980) defines three kinds of organisational control, stressing that every company applies a combination of these, and there is no “pure” control. *Bureaucratic control* essentially means that the members of the organisation must comply with specific requirements, their behaviour is strictly controlled (let's recall the file-centred operation of state agencies). *Market control*, on the other hand, puts the result in the focus, that is, the strategic headquarters does not control tightly the work of the unit, only expects it to achieve some performance target expressed in terms of market data by the end of the control period (the corporate cost and profit centres and internal standard costs function in a similar way). Finally, *clan control* is the embodiment of compliance with the organisational standards and requirements (breach of the joint agreement to arrive to the workplace on time will trigger the sanctioning mechanism of the community). Since Ouchi (1980) developed his model primarily for the factor of control, whereas this study assigns an important role also to the competences, I will apply Kornai's (2012) theory of coordination mechanisms together with Ouchi's logic (Figure 6).

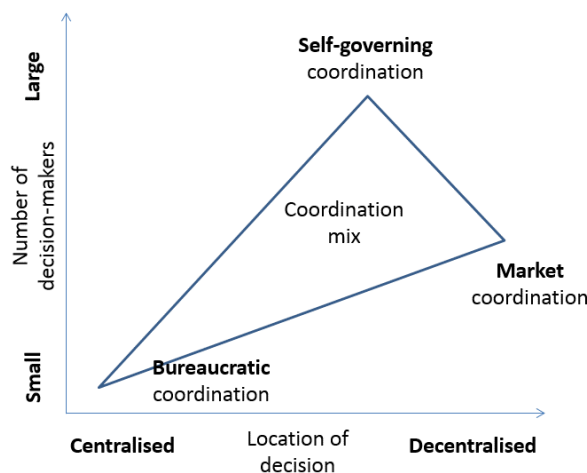
Accordingly, the following dynamic combinations can be distinguished within the organisation: *bureaucratic coordination* (strict hierarchy, control command); *market*

¹⁷ For example, more hours are envisaged for some processes than necessary, so people can work less intensively. Or: the preferences of the sector management and of the specific public companies differ, and so they want to produce different things.

¹⁸ For more detail, see Kornai (2012), and Polányi (quoted in Kornai, 2012).

*coordination*¹⁹ (juxtaposition, monetary controls), and *self-governing coordination*²⁰ (common rule-making by juxtaposed members). The authority and accountability structure and the issue of the coordination mechanisms bring us back to the dilemma of centralisation/decentralisation.

Kornai (1990) underlines that the lack of interest of the managers in the precise implementation of the plans is a major drawback of centralised companies in the socialist regime; tight control and sanctions are not adequate and sufficient incentives. In the opinion of Hayek (1944) it is the decentralised systems that make it possible for the economic actors to use their knowledge in their own interest, instead of having to communicate it to a central agency. Kornai (2011) suggests that the global decline of the socialist regimes seems to signal that the decentralised capitalist system is a more effective alternative. The whole issue is basically about the clash of market and bureaucratic coordination.



6. Figure Coordination mechanisms and centralisation.

Source: Author's compilation.

A similarly sharp debate has unfolded on the issue of company-level centralisation. Alonso et al. (2008) weighted the efficiency of centralisation against the adaptation

¹⁹ Theoretically, the principle of one person, one vote is asserted in self-governing coordination, because the range of decision-makers is the broadest there. Theoretically, prices can be influenced by all concerned also in the context of market coordination, but major actors may have a more significant influence than others. The discussion of the range of decision-makers brings us to the issue of the method of decision-making, but that goes beyond the scope of this study.

²⁰ This was the method of coordination used in the cooperative system (called associative labour) of socialist Yugoslavia (Kornai, 2012); today's concept of organisational democracy is similar to that (see: de Jong – van Witteloostuijn, 2004).

advantage of decentralisation, and came to the conclusion that centralised operation is preferable only if there is a significant danger of opportunism on the part of the organisational units. Golden (1992) took a stand in favour of decentralisation, stressing that the cost focus implied that the units were to retain operative control, but if the company was also to adjust to the changing consumer demand, strategic decision-making had to be left in their hands. Friebe and Raith (quoted by Alonso et al., 2008) underlined that centralisation may not eliminate all the redundancies in the organisation, but it can handle the resources much more efficiently. Peng (2009) expounds in his analysis of the structure of multinational organisations that the strength of the more centralised organisations lies in their global cost advantages, and that of the decentralised ones in their local response capacity. This is another manifestation of the opposition of the bureaucratic and the self-governing or market coordination mechanisms.

In centralised planning, the key decision-maker is the strategic headquarters that collects detailed information from the operative units and controls their behaviour through a bureaucratic coordination mechanism. Examples include the planning office of the planned economy that directs the economic actors via detailed instructions, but a similar phenomenon may exist at developing medium-sized companies having an authoritarian leader. Centralised planning can achieve significant *global efficiency* this way. Global efficiency means that the company as a whole can optimise its activities and, consequently, also its strategy based on information originating from its units²¹. The capacity for quick response was mentioned in the corporate strategy debate, and national-economy-level optimisation in the debate on the planned economy.

Strategic management	Centralised	Decentralised
Key decision-maker	Strategic headquarters	Organisational units
Flow of information at the organisation	Detailed, collected at centre	Aggregate data flow to the centre
Typical goal of accountability	Behaviour control	Result control
Dominant coordination mechanisms	Bureaucratic	Market, self-governing
Advantages	Global efficiency	Local adaptation

4. Table Centralised and decentralised strategic management.

Source: Author's compilation.

²¹The classical example in the category of not-for-profit organisations is the army management, functioning in a clear command-execution system and a hierarchy that makes it capable of quick response and global optimisation.

Decentralised strategic management means that the operative units make the key decisions, and the strategic headquarters focuses on the effectiveness of the company overall and thus expects only aggregate information from the units (as in the case of a company with multiple business lines, where the centre exercises only financial control over the divisions).

The behavioural aspect explain this phenomenon by saying that decentralised operation is possible only if there is very little difference between the organisational and the individual goals (either because the preferences are identical, or because the incentives function properly). From the side of the informational aspect, the question is whether the members of the organisation can provide and are motivated enough to supply the information needed by the strategic headquarters. Control is exercised exclusively through the outcome (e.g. profit and return requirements), aligned by market and self-governing coordination. At the level of the national economy, this is embodied by the for-profit companies, and at that of the companies by the profit centres. Consequently, organisations using decentralised planning have a substantial *local adaptation* capacity (Table 4). Local adaptation means that the units are capable of effective adaptation based on local knowledge and information at the level of both the activities and the strategy.

It is important to note that decentralised and centralised planning are the two ends of a scale. This chapter outlined a general planning model, showing the organisational settings, the limits and the operation of planning. My conclusion is that the strength of centralised and decentralised strategy management lies in global efficiency and local adaptation, respectively.

5. Conclusions

5.1. Argument and decision concerning planning

To analyse the nature of planning, I have examined how and in what form plans are made, and how the relevant coordination mechanisms appear in the organisation. I came to the conclusion that there are significant differences between the centralised and decentralised forms of planning, so one wonders how an organisation faced with so many approaches to planning should choose one or the other.

The comparison of the two debates revealed various arguments for and against central planning. Table 5 highlights a few of the more significant ones related to centralisation.

	Arguments for central planning	Arguments against central planning
Role of the centre	Central planning could ensure optimisation for the whole organisation.	The central body cannot redistribute the resources properly.
Behaviour of the organisation	The plans of the centre are designed according to the interests of the whole organisation, so it is in the interest of its members to cooperate.	Unless the members of the organisation are directly encouraged to cooperate, the central plans will not be useful for the organisation.
Information available to the organisation	The centre is capable of (quasi) optimal resources allocation; that's where every piece of information should be directed.	The members of the organisation will always possess more topical local information that cannot be transferred to the centre adequately.
Planning and implementation	Both planning and control are facilitated by the strict separation of the planning and the implementation stages.	The implementation of plans drawn up earlier may not be adequate for the organisation at the given moment of time.
Dynamism	Significant change can only be realised by central planning.	Adaptation to significant change can only be ensured through the trials and errors of the members of the organisation.

5. Table Arguments for and against central planning.

Source: Author's compilation.

The main point for the organisation is whether to aim at global response capability or local adaptation. It will have to design the level of centralisation of planning through the appropriate authority and accountability structures and the coordination mechanisms established between them accordingly. The framework setting of its decisions will be influenced most by the informational and behavioural aspects of the resources. Accordingly, decentralised planning can be realised more efficiently at organisations where the members are well-motivated and well-informed enough to design the plans in line with the objectives of the whole organisation. If this is not the case or if it is easy to circulate information in the organisation, centralised planning can be realised more efficiently.

5.2. Illusion of the extremes

Any decision in favour of one or the other of the two extremes described above requires the weighting of their respective shortcomings, pointed out also in the pro/contra arguments outlined above.

The illusion of global efficiency: Coase (1937) says the internalisation of the market transactions converts transaction costs into intra-company coordination costs. Therefore, conversion from one coordination mechanism to another may transform, but not necessarily reduce, the costs of the planning system²². Consequently, bureaucratic coordination enhancing behaviour control may significantly increase the costs of planning by increasing the need for bureaucracy.

Simon (1978) considers attention a key resource of the organisation. Looking at it from another aspect, centralisation raises the demand for the decision-making capacity of the strategic headquarters that may become less capable of optimisation than with a smaller amount of information to be processed²³. Owing to the growth of bureaucracy and the decline of attention, excessive centralisation may thus be conducive to poorer global optimisation and slower decision-making and, therefore, loss of the most significant advantage.

The illusion of local adaptation: Growing decentralisation gives the staff more autonomy and more latitude to enhance the innovation capacity of the company by experimenting. The market and self-governing coordination mechanisms predominate. However, excessive decentralisation threatens with making the members of the organisation unable, intentionally or due to lack of information, to work in the interest of the whole organisation. For example, they may claim excessive resources to do their work more easily, or deploy superfluous capacities available elsewhere in the organisation, or realise projects involving excessive risk from the point of view of the organisation.

Excessive decentralisation is concurrent with paying less attention to the interests of the organisation, and adaptation producing exclusively local and not all-organisational advantages. Consequently, the synergic effect is also reduced and that,

²² E.g. when a division that used to function as profit centre, with a planning unit of its own, is assigned to the company centre that will instruct it directly from that time on.

²³ Even if the organisations try to simplify the handling of big amounts of information by coding, the information management costs may still increase (Arrow, 1974).

in turn, diminishes the adaptation capacity of the organisation as a whole. Moreover, as a theoretical extreme, the organisation itself may cease to exist due to excessive decentralisation.

Summary

1. We have identified many similarities between the national economic and the corporate concepts of planning. However, I would like to avoid creating the appearance that the study suggests that the planned economy and the company are identical in this regard. This is obviously not so. However, their planning-related mechanisms are similar, so planning must have some general quality. Consequently, on the one hand, it is worth applying (with appropriate self-restraint and caution, of course) or at least examining each other's planning models and results. On the other hand, one can identify political and economic arguments in such debates that are independent of the specific historical era or business entity concerned.
2. The method of strategy-making bears also on performance. Strategy determines the very bases of corporate behaviour (and that, in turn, determines performance). Since strategy evolves in the course of strategy-making, it is particularly important which target setting method is chosen. The same company functioning in the same environment, but applying different strategy-making methods may arrive at different strategies and thus produce different results. Any change in the centralisation of planning may have a significant influence on performance itself. What is at stake here is not only which theoretical thinker, which unit head we agree with, but also the longer-term performance of a company or the national economy.
3. The centralisation of planning must never be conceived of as an extreme. Although the paper compared centralised and decentralised planning, these categories exist at theoretical level only. Firstly, there is no authoritarian company or command economy where market or self-governing coordination would not pop up at least to a minimum extent. And there is no flexible network-based organisation without at least a minimum amount of bureaucratic control. Secondly, because of the phenomena presented in the

section on the illusion of the extremes, economic rationale itself prevents that any organisation should try to realise one or the other in a “pure” form. In reality, the above distinction should be conceived of as the two end-points of a scale along which the business organisations, whether companies or national economies, are in perpetual motion, driven by trade-offs in global efficiency and local adaptation.

CHAPTER 2: CENTRALISATION OF STRATEGIC DECISIONS DURING THE GREAT RECESSION

AN EMPIRICAL ANALYSIS ABOUT EUROPEAN MANUFACTURING FIRMS

Authors: Zoltán Bakonyi and Balázs Muraközy

We use a unique survey dataset of more than 14,000 manufacturing firms from seven European countries which includes direct information on whether the firms centralised or decentralised their strategic decision-making process during these years to study three questions. First, motivated by theoretical approaches claiming that organisations under considerable stress are more likely to centralize, we use multinomial logit models to show that a larger fall in turnover is associated with centralisation. Second, we show that centralisation was associated with other elements of short-term optimisation. Finally, we show that increased centralisation has led to slower post-crisis growth even when controlling for the size of the shock and other responses.

Introduction²⁴

Firms adjust to recessions on many levels. While altering the production process or looking for new sources of financing may not require radical changes, successful firms often make bold strategic decisions. Moreover, an efficient and timely reaction may also require restructuring the strategic decision-making process itself. Such organisational change may be crucial in weathering the recession, yet it can also have persistent effects on future strategy and growth. This paper focuses on such major changes during the Great Recession of 2008-09.²⁵

In particular, we study three sets of questions. First, we investigate whether more serious external shocks are associated with increased centralisation. By proxying the magnitude of the shocks with the fall in sales at the firm and industry level we find that, indeed, firms facing more serious shocks were more likely to centralize.

Second, the literature often emphasizes that centralisation helps to cut costs in the short run but it can inhibit innovation and adaptation to local circumstances. Consequently, centralisation may be considered as part of a short-term focus strategy. We find that it is indeed often complemented by such policies, including a focus on cost reduction, cutting investments and laying off employees.

Third, we study whether centralisation is empirically associated with slower post-crisis growth. By using sales data from 2012 and 2013 we show that firms which centralised their decision-making during the crisis, underperformed their competitors using other crisis strategies.

Studying the advantages and disadvantages of centralised and decentralised decision-making is one of the classic topics of both Economics²⁶ and Business

²⁴ This paper would not have been possible without the support of Institute of Economics of Hungarian Academy of Science and EFIGE (European Firms in Global Economy: international policies for external competitiveness) research. By this way I would like to thank them for their valuable assistance.

²⁵ This has been the most serious financial crisis since the Great Depression (Reinhart and Rogoff, 2009). In 2008 and 2009, the world economy had to face a 6.5 percent decline in industrial output and a 12.8 percent decrease in international commerce. In the European Union these numbers were even larger (13.7 percent and 15 percent depression) (Békés, Halpern and Muraközy, 2011).

²⁶ See Hayek (1944), Lange (1957), Hage and Aiken (1967), Child (1972), Mintzberg (1990), Ansoff (1991), Golden (1992), Nohria and Goshal (1994), Davis *et al.* (2009).

literatures.²⁷ Another strand of literature has studied the different dimensions along which firms adjusted to recessions.²⁸ However, as yet, there is no consensus about the role of centralisation of strategic decision-making in adjusting to large external shocks. While some researchers found that companies become more centralised during recessions or more intense competition (Pfeffer and Leblebici, 1973; Richardson *et al.*, 2002; Davis, Eisenhardt and Bingham 2009; Kunisch *et al.*, 2012), while other studies claimed that such an environment is conducive to decentralisation (Aghion and Tirole, 1997; Marin and Verdier, 2008; Alonso, Dessein and Matouschek, 2008; Aghion and Bloom, 2014).

This study provides empirical evidence to this debate based on a unique survey database including detailed information for 14,000 manufacturing companies from seven European countries. The database was constructed from the European Firms in the Global Economy (EFIGE) survey which directly asked firms whether they had centralised or decentralised their strategic decision-making process during 2009. Importantly, the database also contains information about the shocks during 2009 and provides details on many other firm characteristics.

We have complemented these survey data in two respects. First, we were able to collect balance sheet and income statement data for 2009 and 2012 from the AMADEUS database for a large subset (nearly 8,000 firms) of the dataset which enables us to study the post-crisis performance of these firms. Second, during 2014 and 2015 we have made follow-up interviews with the top managers of 7 Hungarian and 6 UK firms to understand better their experience and help us to formulate our hypotheses²⁹. We will use a few quotes from these interviews when discussing our hypotheses.

²⁷ See Hage and Aiken (1967), Richardson *et al.* (2002), Argyres and Silverman (2004).

²⁸ Albeit companies can suffer from economic crises in the long run (Reinhart and Rogoff, 2009), rapid reactions can be crucial for their survival (Nystrom and Starbuck, 1984; Smart and Vertinsky, 1984; Schuh, 2012). Because of the changes in the environment, companies have to find new sources of value creation by the reallocation of resources (Fruk, Hall and Mittal, 2013). However, most companies focus on short-term achievements and act reactively rather than in a proactive way (Kunc and Bhandari, 2011). See also Smart and Vertinsky (1984), Barker, Vincent and Duhaime (1997), Wilson and Eilertsen (2010), Fruk *et al.* (2013).

²⁹ Please note, in this paper the interviews are only illustrations for the theory-building. The methodology is described in depth in the third chapter of the dissertation.

Our finding of negative long-term effects of partly emotionally driven decisions suggest some lessons. The behaviour of firms may become more rigid after crisis because of the more centralised decision-making structures. Such factors may affect the behaviour of firms and industries in the medium term. This relationship, however, also suggests that it is important for firms to regularly and consciously re-consider their decision-making processes. Firms with healthy checks and balances against over-centralisation may have a competitive edge following crises.

The rest of the paper is organised as follows. The next section discusses the theoretical background. Section 3 introduces our data and methodology, while Section 4 describes our results. Section 5 discusses the results and concludes.

1. Optimizing and behavioural approaches of centralisation

We will define centralisation as the concentration of decision-making authority in the organisation. Centralisation can be analysed at the three basic levels of strategic management: (1) strategy making³⁰; (2) implementation³¹; and (3) control³². While it is possible to analyse multiple levels simultaneously³³, this paper will focus on the highest level, i.e. strategic decision-making.

1.1. Theoretical background

Theories about the effect of recessions on centralisation can be classified into two broad groups. The first group assumes that the change in the decision-making process is an optimal choice: following a change in the environment, managers act optimally when reorganizing the firm. The second group builds on behavioural theories emphasizing the psychological factors which may become dominant under increased pressure during recessions. The distinction between these two approaches is relevant because if increased centralisation during recessions is indeed suboptimal, then firms can enhance their performance by deliberately paying attention to the psychological factors underlying centralisation and by regularly monitoring, and reviewing their decision-making processes.

³⁰ Hage and Dewar (1973), Gates and Egelhoff (1986), Roth and O'Donnell (1996), Richardson *et al.* (2002).

³¹ Child (1972) Baum and Wally (2003), Lin and Germain (2003), Ling *et al.* (2008), Peng (2009).

³² Pfeffer and Leblebici (1973), Eisenhardt (1985), Marin and Verdier (2008).

³³ E.g., Golden (1992), Colignon and Covalleski (1993), Puga and Trefler (2002), Baum and Wally (2003), Kunisch *et al.* (2012).

When optimisation is assumed (e.g., Hage and Aiken, 1967; Abbey and Dickson, 1983; Davis *et al.*, 2009), the choice is often interpreted in the context of a tradeoff between the larger efficiency of centralised firms (Ansoff, 1991; Golden, 1993; Baum and Wally, 2003; Alonso *et al.*, 2008) and the higher innovative performance of more decentralised companies (Meyer, 1982; Aghion and Tirole, 1997; Davis *et al.*, 2009; Zoghi, Mohr and Meyer, 2010).

A key construct in this literature is the model of Aghion and Tirole (1997) (A-T) which claims that delegation is optimal when chief executive officers (CEOs) are overloaded with projects. Very relevantly for our work, Aghion and Bloom (2014) argues that during crises the congruence among managers increases because the threat of crisis hurts all actors in a similar way. As a result, decentralisation is an optimal strategy in such a case. Aghion *et al.* (2014) also shows empirically that firms which had been more decentralised before the crisis performed better following it.

One key behavioural approach that helps to understand organisational reactions to recessions is based on threat-rigidity. An important characteristic of recessions is increased uncertainty (Haddow *et al.*, 2013) which may be perceived as a threat by actors in organisations (Mone, McKinley and Barker, 1998). According to Carone and Di Iorio (2013), under stress, uncertainty, and fear, our decision-making habits differ from the cognitive schemes under normal circumstances. Threat-rigidity theorists suggest that recessions inhibit cognitive processes (Mone *et al.*, 1998) and, hence, increase the demand for control and coordination in the firm.³⁴

This process may affect the behaviour of both managers and employees. First, management can be motivated to centralize in order to feel more empowered to handle decline. According to Staw *et al.* (1984), under threat conditions there is a restriction in information processing and a constriction of control. The headquarters believe that they can overcome the challenge of a hostile environment by stronger control mechanisms. As Baum and Wally (2003) state, decentralised decision-making about operations improves performance, but centralised strategic decision-making can

³⁴ In threat situations control constrictions also emit dominant and well-learned responses in the organisation (Staw *et al.*, 1984; Baum and Wally, 2003). Fruk *et al.* (2013) also point out that during the crisis, managers did not use significantly different resource reallocation mechanisms from the previous periods.

still be beneficial because it increases efficiency. As a consequence, during recessions, the management is motivated to gain more control by centralisation.

Employees themselves can prefer centralisation in an organisation under stress. Higgins and Freedman (2013) identified 20 emotional factors which influence decision-making under recessions. One example is the “sunflower reflex” which means that organisational members believe that their leaders can help them to survive the crisis. Such factors may lead employees to demand more centralised strategic decision-making (Staw *et al.*, 1984; Richardson *et al.*, 2002).

1.2. Empirical results

Companies implement a wide range of strategies during recession (Barker *et al.*, 1997), including both defensive (cost and investment reduction) and growth strategies (new products and marketing) (Wilson and Eilertsen, 2010). Barker *et al.* (1997) emphasize the importance of organisational restructuring, including the centralisation of decision-making, during crisis management. Most of the studies agree, however, that cost reduction is the most prevalent reaction (Dobbs, Karakolev and Maliges, 2001).

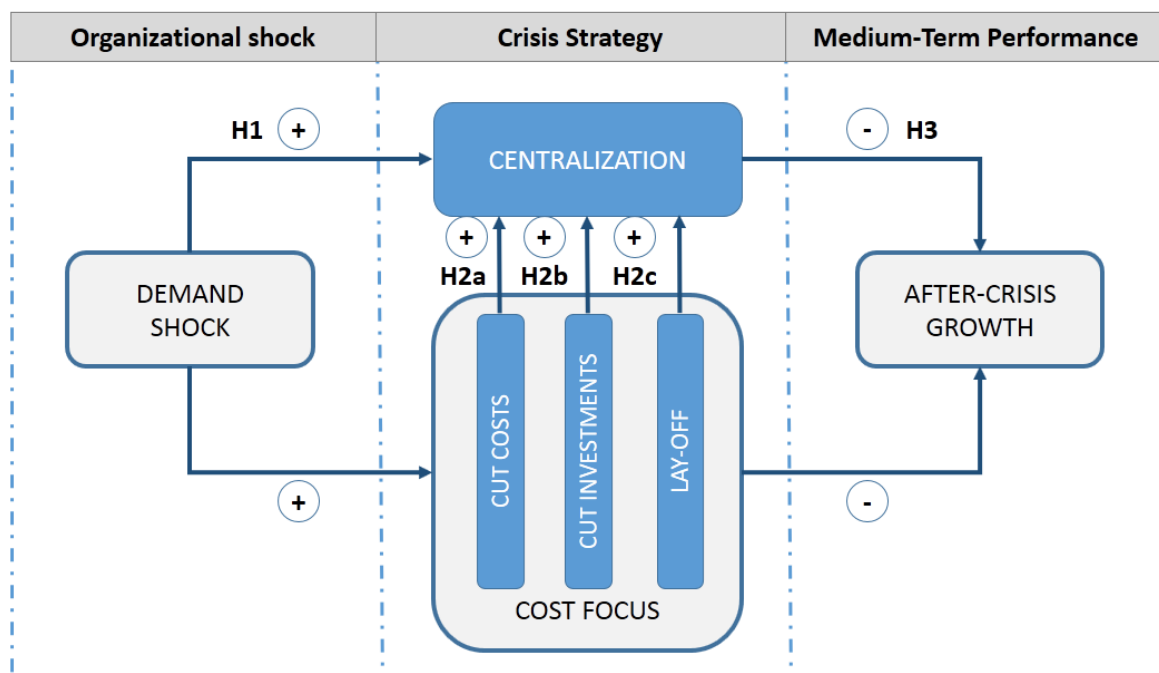
An important result comes from the longitudinal analysis of Aghion and Bloom (2014) who find that decentralised firms performed better during recessions, which confirms the main prediction of the Aghion and Tirole (1997) model.

The contingency approach of centralisation examines what kinds of contextual factors influence centralisation of organisations. Such research, in contrast to Aghion and Bloom (2014), mostly found that firms are more likely to centralize during crises. Pfeffer and Leblebici (1973) point out that competition increases the need for centralisation. Richardson *et al.* (2002) state that CEOs are more willing to delegate at the time of prosperity. Davis *et al.* (2009) uses a simulation model to show that when the environment is rapidly evolving erring on the side of centralisation may be preferable. Based on a survey, Kunisch *et al.* (2012) found that during recessions, company headquarters increased their control over the subunits.

Importantly, the centralisation of decision-making also follows secular trends. According to Marin and Verdier (2008), during the first decade of 2000s there was a decentralisation trend in Europe and in the United States while Schuh (2012) has shown that we have experienced a centralisation trend since 2010.

1.3. Hypotheses

Our theoretical framework is depicted in Figure 7. It shows that we consider three sets of object. The first is the size of the external organisational shock, proxied by the fall in demand or sales. The second set of objects includes the crisis strategy of the firm, affected by the severity of the external shock. In particular, it includes centralisation, our key variable, but also the strategic focus of the firm. Concretely, we are considering cost-focus strategies, measured as firm perception (whether cutting costs will be key to success), cutting investments and laying off employees. We are especially interested in the potential complementarity between such a cost-focus strategy and centralisation. Finally, both the size of the shock and the elements of crisis strategy may affect longer-term performance, measured as growth.



7. Figure Overview of the model and hypotheses

Source: Authors' compilation.

Our first hypothesis studies the effect of the shock on centralisation. Based on behavioural arguments, we will assume that larger organisational stress leads to more centralisation. The relevance of behavioural approaches is also suggested by some of the managers we have interviewed:

„Then when we are in crisis I do not want to trust anyone else. I want to trust only my decision. And I find it very difficult to say exactly why. I just know it will be sold. This is the one we must market. This is the one we must put all of the marketing effort. Why? I do not know. I just know.” (UK Light)

A Hungarian materials making firm's manager also explained the top management decisions with stress:

“My personal opinion is that our boss panicked because he felt crisis was approaching.”

Importantly, as we have seen, other theories, including the Aghion and Bloom (2014) model argue that such a decision is suboptimal hence, firms facing more severe shocks should delegate if they behave optimally. In operationalizing this hypothesis, we use the fall in turnover at the level of the firm and the industry as a proxy for the organisational shock.

H1. Firms facing a larger fall in turnover are more likely to centralize.

Our second set of hypotheses studies the complementarity between measures of cost-focus strategy and centralisation. Theoretically we assume that these should be correlated through two channels. First, the shock triggered by the external conditions can increase focus on the short-term and hence drive both centralisation and cost-focus. Second, centralisation may complement cost-focus policies. Under such complementarity the two policies may complement each other. Note that these two channels may be distinguished from each other by controlling for the size of the shock (channel 1).

Some managers we interviewed argued that centralisation makes cost cutting more effective and faster:

“Our reporting system to the parent company remained the same (...) (however) after the crisis the management board took it more seriously. They paid more attention than before” (HUN Engin).

“There was a possibility to cease the board of directors thereby we could make decisions faster and save costs” (HUN WHEEL)

Our first hypothesis in this group concerns a variable measuring whether the manager considered cost-cutting as key in the success during the next years which we consider as an attitude measure.

H2a. *Firms which perceived cost cutting as an important factor in success were more likely to centralize.*

Second, we proxy short-term oriented strategies with cutting investments which may drive future growth.

H2b. *Firms which cut investments were more likely to centralize.*

Finally, we consider laying off employees as another proxy for a short-term focus, because this implies losing relationship-specific investments which can only be rebuilt slowly and costly in the future. We also add, however, that laying off people may in itself generate more demand for centralisation to handle the organisation stress originating from the conflicts.

We found some examples for this phenomenon in the interviews such as:

“(If the) business went down by 25%, the normal view would be that we need to fire 25% of the staff” (UK Electro).

„It started with the extra (sales, administrative and technical) people. First it was obvious these people were not needed because of the decreasing demand. But it quickly came to the core people in the business. (...) After five years of crisis the owner, the parent decided to close the company with 15 people. You can imagine from 90 to 15...” (UK Material).

H2c. *Firms which laid off workers are more likely to centralize*

Finally, we study the relationship between centralisation and post-crisis performance. As we have already mentioned, many theories discuss the positive short- and negative longer-term effects of centralisation. Also, Aghion and Bloom (2014) emphasize the stronger congruence between incentives under stress and find negative relationship between centralisation and medium-term growth.

The negative longer term effects were also mentioned in some interviews:

I suppose it can restrict entrepreneurial type of attitude if you work in a centralised organisation. (...) (If you are an entrepreneur in a centralised company) you cannot do some of the deal which you want to do” (UK Cons).

Based on these arguments we hypothesize a negative relationship between centralising during the crisis and growth following it.

H3. *Firms which have centralised during the crisis grow slower after the crisis than similar firms.*

2. Data and methods

In this paper we use a unique firm-level survey conducted as part of the EFIGE project. It focuses on the economic activities of European manufacturing firms in several areas such as structure, employment, export, investments, competition and finance. The survey was carried out at the beginning of 2010. The original dataset contains information about 14,759 firms (Altomonte and Aquilante, 2012, p. 6.), but we excluded those that did not provide information about change in authority or change in turnover. Therefore, the final dataset contains answers from the top managers of 14,199 companies, which constitutes a representative sample of industrial (10+ employees) firms from seven countries: Austria (389), France (2,872), Germany (2,837), Hungary (441), Italy (2,922), Spain (2,764) and the United Kingdom (1,974). The number of observations across countries and industries is shown in Table 6.³⁵

Table 1: Industries by Country

NACE 2	Austria	France	Germany	Hungary	Italy	Spain	UK	Total
Manufacture of food products	24	164	216	40	162	328	86	1,020
Manufacture of beverages	1	15	43	8	35	44	8	154
Manufacture of textiles	6	88	56	6	119	44	32	351
Manufacture of wearing apparel	5	48	15	13	123	33	29	266
Manufacture of leather and related products	1	29	9	1	90	40	5	175
Manufacture of wood and products of wood	21	74	85	11	65	127	36	419
Manufacture of paper and paper products	5	66	49	11	61	22	34	248

³⁵ Not many large sample researches were published to study centralisation recently (Zoghi *et al.*, 2010; Aghion and Bloom, 2014; Hong, Kueng and Yang, 2015). Our analysis of this unique dataset can be an important addition to this literature.

CHAPTER 2

NACE 2	Austria	France	Germany	Hungary	Italy	Spain	UK	Total
Printing and reproduction of recorded media	17	109	116	13	56	51	95	457
Manufacture of chemical and chemical products	4	62	49	13	73	90	49	340
Manufacture of basic pharmaceutical products	1	20	15	2	16	14	5	73
Manufacture of rubber and plastic products	14	188	177	29	138	125	110	781
Manufacture of other non-metallic mineral products	11	124	73	22	123	119	24	496
Manufacture of basic metals	8	55	49	4	65	61	23	265
Manufacture of fabricated metal products	60	706	499	88	500	396	227	2,476
Manufacture of computer, electronic and optical products	18	157	150	11	68	26	75	505
Manufacture of electrical equipment	10	95	79	16	112	51	70	433
Manufacture of machinery and equipment	35	213	321	35	287	230	107	1,228
Manufacture of motor vehicles, trailers and semi-trailers	4	83	34	11	41	56	18	247
Manufacture of other transport equipment	2	15	18	2	35	20	16	108
Manufacture of furniture	11	41	57	8	94	154	63	428
Other manufacturing	5	37	122	5	60	52	165	446
Repair and installation of machinery and equipment	4	45	28	14	34	29	17	171
Other	70	106	287	21	111	216	358	1,169

Note: "Other" contains observations where the firm conducts non-manufacturing activity as well (e.g. service activity) or the NACE 2-digit category the firm belongs to contains less than 50 observations.

6. Table Countries by industries

Source: Authors' compilation based on EFIGE dataset.

2.1. Measuring the key variables

Shock

We will measure the change in turnover based on the following question: “Did you experience a reduction of your turnover during 2009 in comparison with 2008?” Managers could choose from four answers: “No,” companies did not experience a reduction in turnover, “Yes, a reduction up to 10 percent,” “Yes, a reduction between 10–30 percent” or “Yes, a reduction of more than 30 percent.” The responses revealed that 28.5 percent of the companies did not experience a fall in turnover, 19 percent faced only moderate (0–10 %), 34.5 percent a medium (10–30%), and 18 percent a serious one. In order to ease interpretation, we generate one “continuous” variable from these categories. We do this by replacing the intervals reported in the survey (e.g., between 10 and 30 %) with an expected turnover within the interval.³⁶ Note that the continuous variable shows the change in turnover rather than the decline in turnover, hence the more positive values are associated with a smaller negative (or more positive) shock. We will follow this logic for all our crisis variables.

The firm-level fall in demand, however, may be endogenous to some extent when testing the first hypothesis because centralisation itself can affect the fall in sales. To solve this problem, we calculate the average fall in sales in the country-industry level (except the given firms) and use it as an instrument for the firm-level fall sales variable.

Centralisation

The measure of change in centralisation, is based on the following question: “During 2009, has strategic decision making become...,” to which managers could answer “more centralised,” “more decentralised” or “nothing changed.” In the survey, centralisation was defined as “the CEO/owner takes most decisions in every area”

³⁶ Another option would be to use the middle of the interval, but this approach is problematic when the interval is unbounded (e.g., „more than 30 %”). To handle these unbounded intervals, we fit a normal distribution (by running an interval regression, “intreg” in Stata) with only a constant, and then predicting the conditional expected value for each interval. This approach yields quite reasonable numbers: +12.6 percent for firms reporting that their turnover did not fall, -5.1 percent for firms which reported that their turnover fell between 0 and 10 percent, -19.3 percent for firms reporting a fall between 10 and 30 percent, and -41 percent for firms reporting a fall of larger than 30 percent. The results are robust to modifications of this procedure, such as using the middle of the intervals and +10 and -40 for the two unbounded intervals.

while decentralisation as “managers can take autonomous decisions in some business areas”. According to this variable, 73.45 percent of firms did not change the concentration of authority, while 7.1 percent decentralised and 19.45 percent centralised during 2009.

This approach is quite simple and straightforward compared to measures used by other authors³⁷. We, however, see two main advantages of this method of measurement. First, as our question concerns a change, one can be relatively confident that managers can correctly identify the general direction of change rather than the magnitude or the level of centralisation. Second, our general definition can incorporate changes both in formal and informal authority (Cohen and Lachman, 1988, Nohria and Goshal, 1994; Aghion and Tirol, 1997; Adams, Almeida and Ferreira 2005).

Strategic focus

In terms of measuring short-term strategic focus, we use a number of variables. The first of these measures whether the firm considers cost-cutting as key to future success. This is measured by the answer to the following question: “With respect to your business, indicate the main competitive factors which will determine the success of your firm in the next years”. Managers answered to the question spontaneously, and the dummy is 1 if they mentioned lowering production cost as such a factor. Change in investment is a dummy coming from a similar question: “During 2009 has your firm reduced its planned investments in machinery, equipment or ICT?”. Finally, we also include a variable measuring whether the firm laid off any employees.

Post crisis performance

The EFIGE questionnaire does not include information on financial variables after 2009. However, as we have mentioned, nearly 8,000 firms from it can be linked to AMADEUS data both in 2009 and 2012. For these firms, we can calculate the growth

³⁷ Previous studies used more sophisticated scales with e.g., three (Gates and Egelhoff, 1986; Kunisch *et al.*, 2012); five (Nohria and Goshal, 1994; Roth and O’Donell, 1996; Argyres and Silverman, 2004); or seven categories (Richardson *et al.*, 2002; Lin and Germain, 2003; Ling *et al.*, 2008), while others use measures that rely less on the subjective judgment of the manager (e.g., Golden, 1992; Ling *et al.*, 2008).

of sales in the 3 year period, which will provide a measure for after-crisis performance.³⁸

2.2. Estimation strategy

H1.

Hypothesis 1 investigates whether firms facing a stronger shock are more likely to centralize.

As our dependent variable is categorical and can take three values, one has to use a discrete choice model. In particular, we have chosen a multinomial logit model because it is relatively flexible and easy to interpret.

In the multinomial logit framework the probability that outcome k will be chosen by firm i is:

$$P(Y_i = k) = \frac{e^{x_i' \beta_k}}{\sum_{k=1}^{K-1} e^{x_i' \beta_k}} \text{ for all } k.$$

Here, x_i is the vector of explanatory variables while β_i is the parameter vector to be estimated. We always choose “no change” as the base category while “centralised” and “decentralised” are the two alternatives. We report average marginal effects for easier interpretation.³⁹

One potential identification problem is the possibility of reverse causality, because the decision about centralisation may affect our shock variable. To check the relevance of this issue, we instrument this variable with the share of firms reducing their labour force at the four-digit industry-country level in a two-stage least squares regression (i.e., a proxy for the seriousness of the crisis at a more disaggregated level than our industry and country dummies). This industry-country level fall in employment should be exogenous from the perspective of the firm because it is unlikely to be affected by the individual firm’s centralisation decision.

Running this model requires addressing two issues. First, an instrumental variable strategy may be very complicated to use in a multinomial logit setting, therefore, we simply run a linear regression with a dummy representing whether the

³⁸ Because of the presence of a few outliers, we Winsorize this variable at the 1st and 99th percentile. Using the un-Winsorized variable yields similar results.

³⁹ We use the “margins” command of Stata to do so.

firm centralised or not.⁴⁰ Second, in some industry-country combinations we observe very few firms and, hence, the given firm can play a very large role in the average, which may threaten the exclusion restriction. To handle this, we always exclude the firm in question from the calculation of the industry-country level average. We also drop the observation when only one firm is present in an industry-country cell.

We always include two-digit NACE industry dummies to control for the heterogeneous shocks in different industries (Békés *et al.*, 2011) as well as the possibly heterogeneous organisation of firms in different sectors.⁴¹ Country dummies are also added to control for such factors as differences in management culture (Geletkanycz, 1997), pre-crisis organisation (Aghion and Bloom, 2014) and the degree of recession (Békés *et al.*, 2011; Shuh, 2012). We also control for the size of the firm which may be correlated both with centralisation and firm performance.

Further, in some specifications we control for another set of variables measuring different characteristics of the firm. First, we control for whether the firm is part of a group by including separate dummies for domestic and foreign groups. Second, we include a dummy measuring whether the firm is in family ownership because family-owned firms may be more likely to centralize and may absorb shock differently. Third, we include a dummy for exporting as exporters may be more decentralised and their exposure to export markets may be correlated with their choices and performance. Fourth, we control for the share of university graduates because a more educated workforce may make decentralisation more effective. Because of similar reasons we control with a dummy for the use of IT for internal process management.

H2.

Our second set of hypotheses suggest a complementarity between cost-focus strategies and centralisation. We study this by including the cost-focus variables in the previous equation. In some specifications we do not control for the size of the shock,

⁴⁰ This is in line with the multinomial logit results which show that our variables are more likely to affect centralisation than decentralisation. Excluding decentralising firms from this regression yields similar results.

⁴¹ We created an “other” category for 2-digit industries with less than 50 observations and manufacturing firms which reported a non-manufacturing industry code. Our results are robust to dropping these firms from the sample.

and thus estimate the unconditional correlation between these sets of variables. This correlation may run through two channels. First, behavioural theories predict that both sets of variables may be affected by the demand shock. Second, even conditional on the demand shock the variables can be correlated because of strategic complementarity. The later channel can be isolated by controlling for the size of the shock in the regression.

H3.

H3 states that future performance is affected by the change in centralisation during the crisis. To test this hypothesis, we run the following regression:

$$growth_i = \beta_0 + \beta_c cent_i + \beta_d decent_i + \Gamma X_i + \varepsilon_i$$

where i denotes firms, $growth_i$ is (ln) sales growth between 2009 and 2012, $cent_i$ is a dummy showing whether the firm centralised during the crisis, $decent_i$ shows whether the firm decentralised during the crisis and X_i is a set of controls. Besides country and industry dummies in some specifications it also includes the size of the shock and the strategic focus variables to isolate the direct effect of the change in centralisation on medium-term growth under the crisis.

3. Results

3.1. Descriptive evidence

Table 7 shows how firms facing different shocks changed their level of centralisation.⁴² During 2009 7.1 percent of firms decentralised and 19.45 percent of firms centralised their strategic decision-making. The probability of centralisation is strongly related to all our shock measures. In terms of change in turnover, only about 14.4 percent of firms with an increasing turnover centralised compared to 21.4 percent of firms which faced a very serious fall. 22.2 percent of firms with increasing employment centralised, while this share was 16 percent for firms deciding on a large layoff. A similar pattern is found for investment (17.1 vs 21.6 %). Finally, 16.2 percent of firms with cost-cutting focus centralised compared to 21 percent of other firms. In contrast to centralisation, the relationship between these variables and decentralisation is quite weak.

⁴² As it was discussed, the change in employment and investment variables are continuous, but we divide them into these intervals to ease the interpretation of the descriptive statistics.

	Decentralised	No change in centralisation	Centralised	Total
Shocks				
No change, or increase in sales	7.16%	78.47%	14.37%	100%
Sales decrease: 0-10%	7.51%	74.59%	17.9%	100%
Sales decrease: 10-30%	6.53%	71.82%	21.64%	100%
Sales decrease: >30%	6.36%	72.28%	21.36%	100%
Mention cost cutting as key to success				
Yes	6.77%	76.94%	16.29%	100%
No	6.98%	71.98%	21.03%	100%
Cut investment				
Yes	6.44%	76.5%	17.06%	100%
No	7.63%	70.75%	21.62%	100%
Cut labour				
Yes	6.77%	77.27%	15.96%	100%
No	7.01%	70.79%	22.2%	100%
Average sales growth, 2009-2012				
Growth rate	4.92%	6.44%	1.91%	-

7. Table Distribution of the firms by shocks, strategic focus, medium-term growth and the centralisation decision

Source: Authors' compilation based on EFIGE dataset.

3.2. Regression results

While the descriptive results of the previous subsection are suggestive, regression analysis is needed to show if the patterns arise because of a composition effect and whether the different shocks have independent effects.

H1

Table 8 shows the estimated average marginal effects from the multinomial regression.⁴³ Column (1) and (2) show results when controlling for 2-digit industry and country dummies while in columns (3) and (4) we include the full set of controls.

⁴³ Industry dummies are not reported for brevity.

	(1)	(2)	(3)	(4)
	Marginal	Marginal	Marginal	Marginal
Centralisation in 2008-2009	effects,	effects,	effects,	effects,
	centralised	decentralised	centralised	decentralised
Sales change, %	-0.103 (0.021)	0.027 (0.014)	-0.101 (0.021)	0.028 (0.014)
National group, dummy			0.037 (0.012)	-0.002 (0.007)
Foreign group, dummy			0.074 (0.016)	-0.015 (0.008)
Owned by family, dummy			0.010 (0.008)	0.01 (0.006)
Direct exporter, dummy			0.004 (0.008)	0.019 (0.005)
Share of workers with university degree, %			0.050 (0.035)	0.049 (0.018)
Use of IT, dummy			0.013 (0.009)	0.017 (0.005)
Observations	12,256	12,256	12,256	12,256
Pseudo R-squared	0.0492	0.492	0.0540	0.0540

Notes: The table shows the results of the multinomial logit models run on firm-level data and estimating the impact on centralisation decision. The dependent variable shows whether the firm centralised, decentralised or did not change their decision-making process during 2009, with 'no change' as the base category. The table includes marginal effects, standard errors clustered at country-industry level are shown parentheses. Sales change variable is calculated by country and NACE industry excluding the effect of the observed firm. Abbreviation "IT" stands for information technology processes and solutions for the internal information management.

8. Table Multinomial logit model, H1

Source: Authors' compilation based on EFIGE dataset.

According to column (4), a 10 percentage point larger turnover shock (-10 change in the turnover change variable) is associated with a 1 percentage point (s.e.=0.021 percentage point, t-value=4.76) higher probability of centralisation. In contrast, a similar shock decreases the probability of decentralisation by about 0.27 percentage

points (s.e.=0.014, t-value=1.93). The estimates remain very similar when we control for ownership and human capital in columns (3) and (4). The controls behave as expected: being part of a group – either domestic or international – is associated with centralisation during the crisis while exporting, having more university graduates and internal IT infrastructure is associated with decentralisation. These results are large in both statistical and economic terms and confirm Hypothesis 1: large external shocks during crisis are associated with increased centralisation and decreased decentralisation.

Centralisation in 2008-2009	(1)	(2)	(3)	(4)
	OLS	2SLS	2SLS	2SLS
Sales change, %	-0.0927 (0.0214)	-0.238 (0.0767)	-0.331 (0.127)	-0.319 (0.128)
National group, dummy				0.0406 (0.0119)
Foreign group, dummy				0.0580 (0.0153)
Owned by family, dummy				0.0072 (0.0083)
Direct exporter, dummy				-0.0006 (0.0008)
Share of workers with university degree, %				0.0585 (0.0378)
Use of IT, dummy				0.0093 (0.0087)
Size FE	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	No	Yes
Industry FE	Yes	No	Yes	Yes
Observations	11,556	11,555	11,555	11,555
R-squared	0.053	0.047	0.042	0.046

Notes: The table shows the results of instrumental variable models run on firm-level data and estimating the impact on centralisation decision. The dependent variable shows whether the firm centralised or did not centralize its decision-making process during 2009. The table includes regression coefficients; standard errors are shown parentheses. Column (1) shows results of the

ordinary least squares estimation, including controls for country, industry and size. Columns (2) and (3) reflect results of 2-stage instrumental variables (2-SLS IV) estimation with controls for size and country, and NACE industry, respectively. Column (4) shows results of 2-SLS IV estimation with controls for size, country and NACE industry and set of industry-level and individual explanatory variables. Sales change variable is calculated by country and NACE rev.2 industry excluding the effect of the observed firm. Abbreviation “IT” stands for information technology processes and solutions for the internal information management; “FE” – fixed effects.

9. Table Instrumental variables, H1

Source: Authors' compilation based on EFIGE dataset.

As it has been already discussed, one potential problem with these results is the potential for reverse causality or other type of endogeneity. In particular, the type of organisational change chosen by the firm may affect turnover leading to spurious results. We attempt to alleviate this potential bias by using an instrumental variables strategy in which we instrument the firm level change in sales with the 4-digit industry level fall in sales. The results are presented in Table 9.

The first column presents the OLS coefficient as a comparison, which is very close to the marginal effect estimated from the multinomial logit model. The second column shows the 2SLS coefficient when only country dummies and firm size is included as controls. In column 3, we also add industry dummies while in column 4 we include all controls. The point estimates are even larger than in the OLS suggesting a 3 percentage point increase in the probability of centralisation after a 10 percent fall in revenue. The estimated effect is also large in statistical terms ($p < 0.05$). These 2SLS results reinforce that large external shocks indeed have a causal effect on centralisation.

H2.

We test hypothesis 2 by including the strategy focus variables into the previous regression. The results are reported in Table 10, in which the first two columns only include size, industry and country variables, the second two columns also include the change in sales of the firm and the last two columns include the full set of controls.

CHAPTER 2

Centralisation in 2008-2009	(1) ME, centr.	(2) ME, decent.	(3) ME, centr.	(4) ME, decentr.	(5) ME, centr.	(6) ME, decentr.
Cutting cost strategy, dummy	0.012 (0.008)	-0.006 (0.006)	0.012 (0.008)	-0.006 (0.006)	0.012 (0.008)	-0.006 (0.006)
Reduced investment, dummy	0.033 (0.008)	0.009 (0.005)	0.030 (0.008)	0.012 (0.005)	0.030 (0.008)	0.011 (0.005)
Reduced labour, dummy	0.039 (0.008)	-0.006 (0.005)	0.034 (0.008)	-0.001 (0.005)	0.033 (0.008)	-0.001 (0.005)
Sales change, %			-0.040 (0.023)	0.038 (0.015)	-0.041 (0.023)	0.038 (0.016)
National group, dummy					0.040 (0.012)	-0.001 (0.008)
Foreign group, dummy					0.062 (0.016)	-0.012 (0.009)
Owned by family, dummy					0.010 (0.008)	0.010 (0.006)
Direct exporter, dummy					0.002 (0.008)	0.019 (0.005)
Share of workers with university degree, %					0.059 (0.035)	0.050 (0.018)
Use of IT, dummy					0.012 (0.009)	0.019 (0.005)
Observations	12,256	12,256	12,256	12,256	12,256	12,256
Pseudo R-squared	0.0513	0.0513	0.0518	0.0518	0.0563	0.0563

Notes: The table shows the results of the multinomial logit models run on firm-level data and estimating the impact on centralisation decision. The dependent variable shows whether the firm centralised, decentralised or did not change their decision-making process during 2009, with 'no change' as the base category. The table includes marginal effects, standard errors clustered at country-industry level are shown parentheses. Sales change variable is calculated by country and NACE industry excluding the effect of the observed firm. Abbreviation "IT" stands for information technology processes and solutions for the internal information management.

10. Table Multinomial logit model, H2

Source: Authors' compilation based on EFIGE dataset.

Hypothesis 2a argued that the perception that cutting costs will be key in market success can be correlated with centralisation. We find evidence for this: firms with such a focus are about 1.5 percent more likely to centralize (s.e.= 0.008, t-value=1.5). The point estimate is robust across specification. This effect, however is relatively small both in economic and statistical terms.

Hypothesis 2b claimed that cutting investments is a good proxy for cost-focus strategies, hence we expect a positive relationship between this variable and centralisation. Indeed, we find that firms which cut investment are 3-4 percentage points (s.e.= 0.008, t-value=3.75) more likely to centralize than other firms. This effect is large both from an economic and statistical point of view, hence these findings confirm the hypothesis.

Finally, those firms which had to lay-off a significant number of employees are 3-4 percentage points more likely to centralize. While we did not find any strong connection between reduced labour and decentralisation (-0.001 coefficient). These effects remained robust across all model specification, thus we accept the Hypothesis 2c as well.

Importantly, the point estimates of these strategy variables do not change after controlling for the fall in sales. Consequently, it is unlikely that the demand shock confounds both centralisation and the strategy variables: our estimates show that they are more likely to be complementary policies.

In addition, significant centralisation scheme differences are identified among countries. French and British companies are less motivated to change authority in any direction than Austria which is the basis in our model. German companies significantly less prefer centralisation. Spanish organisations are more likely to change authority structure in general but mostly in the way of centralisation. This was the only country where significance levels changed intensively in the different specifications. In our sample Italy stands firmly on the side of centralisation in the time of crisis. Hungarian firms did not show significant difference in centralisation schemes to Austria.

Interestingly no significant industry-effect can be identified in our model. Only few model specifications can show significant difference from the basis (food, beverage

and tobacco). Solely printing and reproduction of recorded media industry seems as centralisation supporter.

H3

Hypothesis 3 investigates the relationship between post-crisis performance and centralisation by linear regressions. Note that this variable is only available for a subset of firms, which results in a smaller sample size.

In column 1 (Table 11) we only control for industry, country and size variables besides two dummies of interest, which represent whether the firm centralised or decentralised during the crisis. The results show that the three-year revenue growth rate was about 2.4 percentage points (s.e.=0.012, z-value=2) smaller for firms which centralised during the crisis than for other firms. Decentralisation does not seem to affect 3-year growth. This effect is important both in economic and statistical terms, given that the average 3-year growth rate was 8.7 percent in our sample.

In the second column we also control for the change in sales during the crisis. We find that firms facing larger shock have grown somewhat faster following the crisis. But, importantly, including this variable does not change the estimate of the centralisation dummy. In column 3 we also include the short-term focus strategy variables. These seem to have a low partial correlation with post-crisis performance and their inclusion does not affect the estimate of the centralisation variable. Finally, in column (4) we include our full set of controls. We find that exporter firms have faced stronger sales growth, but again, including these controls does not affect our estimates.

To sum up, we find that firms which did centralize during the crisis have underperformed their competitors. We find that this effect is robust for controlling for the fall in demand during the crisis, the proxies for short-term strategy and other controls.

Average sales growth in 2009-2012	(1) OLS	(2) OLS	(3) OLS	(4) OLS
Decentralised in 2009, dummy	0.015 (0.018)	0.016 (0.018)	0.018 (0.018)	0.016 (0.018)
Centralised in 2009, dummy	-0.024 (0.012)	-0.026 (0.012)	-0.024 (0.012)	-0.025 (0.012)
Sales change, %		-0.173 (0.041)	-0.234 (0.04)	-0.234 (0.04)
Cutting cost strategy, dummy			0.014 (0.011)	0.014 (0.011)
Reduced investment, dummy			-0.011 (0.011)	-0.012 (0.010)
Reduced labour, dummy			-0.052 (0.011)	-0.053 (0.011)
National group, dummy				-0.002 (0.015)
Foreign group, dummy				-0.011 (0.021)
Owned by family, dummy				-0.022 (0.012)
Direct exporter, dummy				0.053 (0.011)
Share of workers with university degree, %				0.045 (0.058)
Use of IT, dummy				0.011 (0.011)
Observations	7,814	7,814	7,814	7,814
R-squared	0.091	0.096	0.100	0.104

Notes: The table shows the results of the linear regression models run on firm-level data and estimating the impact on firm's average sales growth in 2009-2012. The table shows regression coefficients estimated by least ordinary squares method, standard errors clustered at country-industry level are shown parentheses. Sales change variable is calculated by country and NACE industry excluding the effect of the observed firm. Abbreviation "IT" stands for information technology processes and solutions for the internal information management.

11. Table Centralisation and sales growth in after-crisis period, H3

Source: Authors' compilation based on EFIGE and AMADEUS datasets.

Note that these empirical results are much in line with those of Aghion and Bloom (2014) in terms of showing that centralisation is associated with worse performance following the crisis. However, an important difference is that Aghion and Bloom (2014) considers the level of centralisation while we show that firms which have changed their level of centralisation underperformed other firms.

Summary

In terms of theory, our finding that larger shocks are associated with centralisation may be in line with the threat-rigidity approach according to which managers centralize in a threatening environment. Centralisation may also be optimal for more rapid search in a complex and rapidly changing solution landscape.

Centralisation seems to be viewed as a complement of policies reflecting short-term, cost cutting focus. Firms perceiving cost cutting as key or firms which cut their investments are more likely to centralize. This tendency suggests that these policies may complement each other but also that short-term focus triggered by perception of threats does not only lead to short term cost cutting but also to organisational changes with potentially longer term impacts.

This later point is reinforced by our third finding that firms which centralised their decision-making process during the crisis under-performed their rivals, even controlling for the demand shock during the crisis and changes in investments. Indeed, centralisation seems to be suboptimal in the medium term.

Importantly, our findings underline a key discrepancy between approaches emphasizing optimal responses (e.g. Aghion and Bloom 2014) and behavioural approaches claiming that centralisation and strategic decisions may be driven by other factors, such as the need of control during threat situations. Our Hypothesis 1 supports the positive finding that large shock lead to centralisation while our more normative finding in Hypothesis 3 shows that indeed delegation seems to be a better response in a normative sense. It does not mean that centralisation cannot be efficient in the short run. It may be a useful tactic to handle crisis situations, but to avoid its long-term downsides, managers should be ready to reconsider the concentration of decision-making authority of the firm.

Several important theories suggest that the centralising tendency during recessions may be suboptimal from the viewpoint of the firms. This implies that managers should regularly any consciously review the decision-making process of the firm and analyse systematically the decisions taken at times when the firm is under stress.

CHAPTER 3: WHY DO FIRMS CENTRALISE DURING THE CRISIS EVEN IF IT IS NOT OPTIMAL?

A QUALITATIVE STUDY

Author: Zoltán Bakonyi

In the time of crisis companies centralise because they would like to gain efficiency. The short term advantages of concentration of authority (such as whole company focus, easier communication, and higher decision speed) override its longer term downsides such as less innovation and flexibility. On the other hand, firms prefer decentralisation during prosperity therefore organisations change according to the economic cycles. Based on interviews with Hungarian and British senior managers a theoretical model is formulated which describes why centralisation is maintained longer than it is optimal and why decentralisation starts later. The perfect timing of restructuring authority can provide competitive advantage for the companies as a tool to adapt to the environment.

Introduction⁴⁴

The change in concentration of decision-making authority can be a tool to adapt to the environment. Because adaptation is a potential source of advantage, adequate centralisation can increase the competitiveness of the firm.

This qualitative research examines the relationship between economic crisis and centralisation which can be defined as an increase in concentration of decision-making authority in the company. The downturn of 2007-2008 has been the largest recession since the Great Depression (Reinhart and Rogoff, 2009) and because crisis is always an interesting setup to examine decision-making of the firm (Higgins and Freedman, 2013) the Subprime Mortgage Crisis is an unfortunate but useful occasion to analyse centralisation.

Certainly all of the companies had to react to the downturn, thus wide variety of crisis tactics emerged. One of these reactions was restructuring authority (centralisation or decentralisation) within the company. There are several studies in the literature which examines the relationship between environmental changes and centralisation by empirical (Richardson et al., 2002; Kunisch et al., 2012; Aghion and Bloom, 2014) or mathematical models (Aghion and Tirole, 1997; Marin and Verdier, 2008; Davis et al., 2009).

The central purpose of this paper is to contribute to one of the most important debates in the field. One side argues, in the time of adversity companies centralise (Pfeffer and Leblebici, 1973; Richardson et al., 2002; Davis et al. 2009; Kunisch et al. 2012). On the other hand, some studies state such environment motivates firms to decentralise (Aghion and Tirole, 1997; Marin and Verdier, 2008; Alonso et al., 2008; Aghion and Bloom, 2014). One of the most focused studies on this topic is Aghion and Bloom's (2014) paper (which is based on a panel research) describing that even in the time of crisis decentralisation increases the total factor productivity and sales growth of the company.

⁴⁴ This paper would not have been possible without PhD Balázs Muraközy's guidance and the support of Institute of Economics of Hungarian Academy of Science and EFIGE (European Firms in Global Economy: international policies for external competitiveness) research. By this way I thank them for their valuable assistance. I would like to thank Dr Attila Bokor for guiding me by valuable feedbacks as well.

This paper is the second wave of a centralisation research. The first wave was a cross-sectional quantitative research based on the EFIGE database including more than 14,000 European manufacturing companies. That previous study showed crisis increases the probability of centralisation (Bakonyi and Muraközy, 2016). In this qualitative interview-based analysis, 13 senior managers were asked how they reacted to the crisis and why they decentralised or centralised. It would like to contribute to the quantitative-dominated literature by a descriptive, qualitative study analysing the root-causes of change in concentration of authority.

Understanding centralisation habits can fundamentally influence performance because while centralised companies are good at efficiency, decentralisation fosters innovation (Davis et al., 2009). Therefore, in a long run centralised companies can lose their innovative capabilities. Thus it is crucial to answer the main research question of this paper namely (if decentralisation is so beneficial) why companies centralise during the crisis.

This paper starts with a literature review which has two parts. The first one describes the key definitions of centralisation in the view of strategic management. The second one shows the most important reasons of centralisation and decentralisation based on previous studies. The next part of the paper describes the methodological background of the interviews. The third part examines why companies change their concentration of authority during crisis. Based on the empirical findings the final part articulates a theoretical conjecture which analyses how economic cycles and centralisation may be interrelated.

1. Literature review

1.1. Reaction to crisis

Crisis is a state when an unexpected change in the contextual factors significantly jeopardizes the profitability, the operation or the existence of the organisation. Unexpected change can be a political crisis, a humanitarian catastrophe or an environmental disaster etc. which are analysed by the emergency literature (e.g. Cosgrave, 1996; Higgins and Freedman, 2013). This paper examines how companies react to the largest economic meltdown of our time, therefore it is based on the

strategic management and decision theory literature (e.g. Wilson and Eilerstsen, 2010; Kunc and Bhandari, 2011).

After the Subprime Mortgage Crisis companies had to face serious effects of crisis such as: (1) decreased demand; (2) reduced liquidity; and (3) increased uncertainty (OECD, 2012). In this radically new environment companies had to develop new strategies to prosper or at least to survive.

There were huge differences in crisis reactions among companies⁴⁵ (Békés et al., 2011). According to Wilson and Eilertsen (2010) both defensive and offensive strategies are implemented as a reaction to crisis.

Offensive strategies:

- New products,
- Entering new markets,
- New pricing,
- Investing in new production facilities, and
- Increasing marketing budget.

Defensive strategies:

- Reducing operational costs,
- Stopping new hiring,
- Employment downsizing,
- Decreasing training and R&D expenditures, and
- Put larger projects on hold (Wilson and Eilertsen, 2010, p.4.).

Nevertheless, decreased demand and liquidity forced companies to focus primarily on increasing efficiency (OECD, 2012). On the other hand, companies which implement radical turnaround are more successful than those which have only cost-cutting strategies (Barker and Duhaime, 1997). According to a McKinsey study those companies became more profitable which significantly reallocated their resources

⁴⁵ Interestingly 10-20% of the manufacturing companies had better performance in 2009 than one year before (Békés et al., 2011, p. 4.).

(Fruk et al., 2013) moreover faster resource reallocators became more profitable than the slower firms (Hall and Kehoe, 2013).

The main reason why firms preferred short-term strategies was the increased uncertainty (Kunc and Bhandari, 2011). Because as Smart and Vertinsky (1984) state implementing a significant, strategic turnaround is easier in stable environment. Moreover, uncertainty also decreased investments and innovations during the depression (OECD, 2012).

But how do managers choose strategy during depression? In the time of economic hardship managers have to face three main challenges related to decision-making. Because of turbulence they have (1) less time to decide; (2) less information available; and (3) increased decision load (Cosgrave, 1996). To understand their decision habits during depression we should understand the structure of decision-making authority of the firms.

1.2. Definitions of centralisation in the literature

A wide variety of definitions can be found about centralisation in the field. Some studies focus on the different scopes of decisions that an organisational unit leader can make (Child, 1972; Richardson et al., 2002; Lin and Germain, 2003). The same logic is implemented in the researches examining how frequently a member of the organisation can take part in important decisions (Hage and Dewar, 1973). Centralisation can emerge if a decision should be approved by higher hierarchical levels (Gates and Egelhoff, 1986) or there can be other strong control mechanisms in decision-making rules (Pfeffer and Leblebici, 1973).

Several studies analysed general organisational structures of multinational companies (Keats and Hitt, 1988; Nohria and Goshal, 1994) or the relationships of headquarters and organisational units (Golden, 1992; Argyres and Silverman, 2004). Because formal and informal authority can differ (Cohen and Lachman, 1988), alternative authority structures are examined in the literature (Nohria and Goshal, 1994; Adams et al. 2005).

For the further investigations the following definition is suggested which contains all types of centralisation. Level of centralisation can be defined as the concentration of

decision-making authority in the organisation. The increase of authority concentration is considered as centralisation and its decrease as decentralisation.

2. Centralise or not to centralise?

In the following part of the paper the most important theoretical reasons of change in concentration of authority are analysed. Based on the results of other studies the most significant reasons for centralisation are (1) efficiency; (2) easier communication; and (3) lack of trust and the main motives for decentralisation are (1) easier adaptation; (2) division of responsibility; and (3) better entrepreneurship.

2.1. Why centralisation?

Efficiency. Examining organisational structures we can find a trade-off between efficiency and adaptability (Peng, 2009). According to Davis et al. (2009) if we have to choose between too much or too little structure, in dynamic environment it is always better to try the centralised one. Golden (1992) states that central operational control helps companies focus on cost cutting which as it was mentioned before a key element of crisis tactics.

Easier communication. According to Staw et al. (1984) in time of threat situation, central decision units are overloaded with information therefore they prefer simplifications. Moreover even in decentralised organisation coordinative communication is extremely important (Alonso et al., 2008), especially when the congruence is not perfect between the centre and organisational units (Aghion and Tirole, 1997).

Lack of trust. Trust is one of the most important factors of delegation (Aghion and Tirole, 1997; Aghion et al., 2013). Richardson et al. (2002) state after the time of prosperity, CEOs become risk averse and therefore less willing to delegate. Sometimes the CEO may consider a decision too important or too difficult to delegate so she is too worried about the potential mistakes (Leana 1987 in Richardson et al. 2002).

2.2. Why decentralisation?

Better adaptation. One of the most important reasons of decentralisation is the better understanding of local situation of the units. Decentralised business units can adapt to

the local competitive environment more easily than a centralised one (Alonso et al., 2008).

Division of responsibility. Several researches show decentralised organisation can be more resistant because divided responsibilities help companies make better decisions and adapt faster. Adams et al. (2005) stated firms run by powerful CEO have more variability in performance because the risk of judgment errors increases significantly. Mone et al. (1998) emphasize that the less widely diffused power increases the influence of organisational decline on innovation.

Other related reason is the *new knowledge or new viewpoint* in the management. As Meyer's (1982) research shows decentralised structure fosters organisational learning even in the time of crisis. Moreover according to Aghion et al. (2013) skill intensive firms can perceive larger productivity growth after decentralisation. These can be supported by new knowledge and viewpoints.

Better entrepreneurship. Decentralisation can foster entrepreneurial behaviour within the organisation as well. Aghion and Tirole (1997) describe that the main reason for delegation is the emergent initiatives at lower levels of the company. According to Puga and Trefler (2002) tight control on innovation process helps the principal control the costs but it decreases agent's motivation to innovate as well.

3. Methodology

To examine the research question semi-structured interview-based methodology was applied for three reasons. First, it helps researchers to create a comprehensive analysis about complex social settings (Selmier et al., 2015). Second, it allows extending the existing theories by new examples and observations (Eisenhardt and Graebner, 2007). Third by this method we can pay attention on the personal interpretations of the senior managers who decide on centralisation. There are several definitions, numerous empirical and mathematical analyses of centralisation but this research focus on the reasoning and the viewpoint of the real decision-makers from sub-micro perspective.

Counter to the quantitative (survey-based) methods this interview research can examine this particular question in-depth. For instance, qualitative methodology allows senior managers to list as much reasons for centralisation as they want, which is

useful for the root-cause analysis. Then they can structure or weight these causes as they prefer.

This analysis is the second wave of the centralisation research of EFIGE survey which contains data about the economic activities of 14,759 European manufacturing companies having more than 10 employees in 2008 and 2009. The senior managers of the Austrian, French, German, Hungarian, Italian, Spanish and British companies provided information about employment, export, investments, competition, finance and organisational structure including centralisation (Altomonte and Aquilante, 2012, p. 6.). In the first wave of the research our empirical results showed that crisis increases the probability of centralisation (Bakonyi and Muraközy, 2016). Because mixing methods help authors better understand the background of social phenomena and provide richer results (Mason, 2006) therefore a qualitative interview methodology was applied.

I conducted the first interview with the senior manager of a Central European pharmaceutical company in 2013 which preliminary research was very useful for the further analysis. The other dozen companies were chosen from the EFIGE database. The interviews took place in 2014 with six Hungarian senior managers and in 2015 with six British ones. To minimize selection bias the next method was followed during the sample selection. All of those Hungarian (mostly in Greater Budapest) and British (mostly in Greater London) companies were selected which (1) faced more than 20% turnover decrease in 2009; (2) centralised or decentralised their strategic decision-making in 2009; (3) still operate (in 2014 or 2015); and (4) have at least one senior executive who was the manager of the company in 2009 as well.

I used internet search to find out the still operating 16 Central Hungarian companies and 13 firms in Central Britain. Ten Hungarian and seven British companies explicitly or implicitly refused to take part in the research. After that 6 interviews were conducted in Hungarian in person and 6 in English via telephone or video-conference (Table 12).

The most important limitations of this sample are the following. (1) They are only manufacturing companies which are not representative for the whole economy. (2) These companies did survive the crisis: they are the “fortunate few”. They may have

totally different crisis tactics or centralisation schemes than other firms but their answers are still interesting and can be interpreted in a descriptive study.

CHAPTER 3

Code	Role	Date	Country	Size	Industry	Group member	Change in turnover	Change in authority
HUN Pharma	chief financial officer	2013.01.18	HUN	large	Pharmaceuticals	independent	10% increase	centralisation
HUN Engin	managing director	2014.08.05	HUN	medium	Production process systems	international	10-30% fall	centralisation
HUN Cosmet	business development manager	2014.08.05	HUN	small	Handmade cosmetics	independent	30%+ fall	decentralisation
HUN Proth	managing director	2014.08.14	HUN	small	Artificial limb manufacturing	national	10-30% fall	decentralisation
HUN Material	managing director	2014.08.15	HUN	large	Construction material	international	10-30% fall	centralisation
HUN Metal	chief executive officer	2014.09.10	HUN	medium	Scrap metal processing	independent	10-30% fall	decentralisation
HUN Wheel	chief executive officer	2014.10.01	HUN	large	Wheel manufacturing	independent	30%+ fall	centralisation
UK Light	chief executive officer	2015.01.09	UK	small	Specialized electronic devices	independent	10-30% fall	centralisation
UK Electro	business development manager	2015.01.14	UK	large	Electronic equipment manufacturing	independent	10-30% fall	centralisation
UK Print	managing director	2015.01.15	UK	medium	Premium printing	international	30%+ fall	centralisation
UK Cons	managing director	2015.01.21	UK	large	Construction systems	international	10-30% fall	centralisation
UK Material	managing director	2015.02.03	UK	medium	Construction material	international	10-30% fall	centralisation
UK DIY	chief financial officer	2015.02.24	UK	medium	Craftsman tools	independent	30%+ fall	centralisation

12. Table The interview sample

Source: Author's compilation.

The senior managers of the sample were shortly briefed about the project and only the key topics were mentioned before the interview, to avoid influencing their memories. During the interviews I always shared that information what they had provided about centralisation in EFIGE survey (viz. centralisation or decentralisation) for an easier recall of the events. All of the (approximately 45-90 minute-long) interviews were recorded, typed word-by-word and after that sent back to the interviewees for possible edition or comments. Only the final, reviewed versions were used for the analysis. Because of confidentiality agreements all of the companies' or interviewees' name will remain hidden as they were so during the whole interviewing process.

To avoid influencing the interviewees I did not speak about the findings of centralisation literature or about the results of the previous research waves (including the link between crisis and centralisation). I used a semi-structured (kind-of-narrative) interview system where only the key topics (signs of crisis, reactions to the crisis, centralisation) were defined. The exact length and depth of the discussion were up to the interviewees.

At the end of all interviews I summarized and shared my key takeaways on the spot. After receiving the reviewed interview text, I created a one-page-long summary about it which was useful for the following interviews and the final theory-building process. Then all of the interview texts were coded and recoded several times according to the emerging concepts and the existing theories. The intermediate and final results were presented to eight senior researchers (peer review). Based on the previous results and their feedbacks this paper was written in 2015 which includes several citations from the original interview texts.

4. Empirical findings

Based on the interviews the following chapter describes the most important reasons for change in concentration of authority.

4.1. Definitions of centralisation based on the interviews

As it was described before there are various definitions of centralisation in the literature and this diversity emerged in the interviews too. Based on the opinions of

the interviewees different types of centralisation could be identified in every step of strategic management.

Centralisation of strategy making means that fewer people take part in decision-making. It can occur in two ways. The first is the *de jure* centralisation which appears when the corporate governance system is reshaped. “There was a possibility to cease the board of directors thereby we could make decisions faster and save costs” (HUN WHEEL). The second version is one of the most popular centralisation modes which is the *de facto* centralisation. It happens when a manager starts to delegate less authority to the subalterns. “We made every decision in (the CEO’s) office. It was obvious neither division can have their own strategy which is not totally aligned with the corporate-level strategy” (HUN Engin).

These two versions are really similar to Aghion and Tirol’s (1997) formal or real authority concepts. Albeit some authors distinguish strategic and operational decisions (e.g. Baum and Wally, 2013; Kunisch et al., 2012) this distinction is always difficult especially when a company is extremely centralised. “We wanted to maintain the relationship with our key accounts but in the same time we had to cut advertising costs (...) (therefore) we decided not to print our corporate magazine but we edited an web-based one” (HUN Engin).

Centralisation of implementation describes if a decision is made, how few people manage its execution. Some researches focus on the implementation of functional strategies (Ling et al., 2008). There is an example of decentralisation from a growing company. “We started to grow in new segments thus we got more middle managers. (...) (But still) the decisions are made by the directors (...) and it is executed by the (middle) management” (HUN Proth).

Moreover, organisational restructuring can result in new concentration of authority. “Before (the crisis) our product and service procurement system was really decentralised. But after that, to save costs, we centralised almost all of the service procurement into one unit under the supervision of Technical Directorate” (HUN Pharma).

Centralisation of control means reporting becomes more detailed or more frequent. According to Colignon and Covalleski (1993) the centralisation of the accounting system can be a result of changing environment. “We implemented a very strict controlling system during the crisis. Before that we monitored our performance only in every six month but then we started to make it in every week” (HUN Metal). But sometimes there is no such a radical change in the controlling system, centralisation can appear even in reporting habits. “Our reporting system to the parent company remained the same (...) (however) after the crisis the management board took it more seriously. They paid more attention than before” (HUN Engin).

In the following part the most important reasons of change in concentration of authority will be examined.

4.2. Reasons for centralisation

Efficiency. Not surprisingly the most popular reason for centralisation was efficiency. “Manual control can be very useful during a long crisis because we can make decisions in a more effective way” (HUN Metal).

This efficiency can come from the whole company focus which was also one of the most popular reasons of centralisation. “We wanted to have a group perspective (...) rather than one person makes a decision for his market without any consideration of the implications for the rest of the group” (UK DIY). In the case of centralised decision-making, ideally all of the relevant information are gathered in the centre therefore decision-makers can optimize to the whole organisation not only one particular unit (Alonso et al., 2008). Also in the sample several managers mentioned advantages of merged organisational units. Speaking about centralisation and standardization the senior manager of UK Cons stated “there were 20-30 different reporting systems in the company for health and safety. Now everybody works in a same way. Everybody knows what the system would be. E.g. in France, Germany, UK etc. (Now) everybody will understand that immediately. We will have a single strategy and single structure with a common goal”.

Easier communication. The next related reason of centralisation is easier communication. “It is much easier to come to a conclusion for 8 people than when 30

people sit together” (UK Print). During the interviews two senior managers stated that centralisation can cause better communication (UK Electro, UK Cons).

Decision speed⁴⁶ was also a popular reason. “The greatest advantage of centralised management is the shorter decision lines” (HUN Engin). Similar opinion is described in Baum and Wally’s (2003) research which analyses how decision speed can support firm growth in dynamic environment. Senior manager of HUN Metal mentioned a more dramatic example for faster decision-making. “In peacetime we can play this <management game> (...) and wait for weeks for a decision (...) in critical situation we have to speed up”.

Lack of trust. The most important emotional argumentations of centralisation were based on trust issues. “When we are in crisis I do not want to trust anyone else. I want to trust only my decision. And I find it very difficult to say exactly why” (UK Light). The senior manager of HUN Metal mentions an example for this phenomenon. “Some of our middle managers are not totally able to lead people (...) in crisis we do not have the time for them (...) therefore I undertook some of their responsibilities”.

In addition to the trust issue, ethical reasons were also mentioned as a motive for centralisation namely if the ownership suffers the losses they deserve to have more extent control rights (UK Material).

4.3. Reasons for decentralisation

Better adaptation. Even those interviewees who centralised during the crisis emphasised the adaptation advantage of the decentralised organisations. “I think one of the downsides (of centralisation) would be that the benefit of local management, in terms of understanding the local markets. It may be not fully understand, and championed without the local manager” (UK DIY).

Some senior managers mentioned local information is not just important but difficult to acquire. “We can also go directly to (the) customers and sell (without hiring a distributor). This can keep the margin from the distributor. The downside is that it is

⁴⁶ Interestingly even that company mentioned need for speed which later explicitly stated that during the crisis they had more time, because of the decreased number of orders (HUN Metal).

hard to rebuild the market. The distributor knows the local market (new concerts, new cultural centre etc.) but I do not” (UK Light).

Division of responsibility. Decentralisation can increase the division of responsibility in the organisation which can foster better decision-making in two ways. First it can disencumber the senior management. “If the company is led by manual control, the manual controller takes all of the responsibilities (...) the middle manager is only a loud-speaker. (...) During the crisis we restructured middle management roles and divided the responsibilities” (HUN Metal).

Second division of responsibility allows middle management to take part in important decisions. Therefore, new knowledge and viewpoints can emerge in the decision-making forums. “(A larger) number of people (were) involved in decision-making (...) the responsibilities became wider because more voices were added to the meetings. So a wider variety of inputs was available” (UK Electro). “The crisis was permanent. We thought we need change (...) therefore we created a sales management role and hired a new colleague. (...) She took part in the main decisions as well” (HUN Cosmet).

Better entrepreneurship. If there is a more diffused power structure in the organisation, employees are more empowered to innovate or at least experiment with new solutions. “It depends when we are talking about different companies and personalities. I suppose it can restrict entrepreneurial type of attitude if you work in a centralised organisation. (...) (If you are an entrepreneur in a centralised company) you cannot do some of the deal which you want to do” (UK Cons).

Finally, personality can be a reason of decentralisation too. As the senior manager of UK Cons articulates “I think from a personal point of view it is a little harder dealing with centralisation rather than decentralisation”. Similar opinion is stated by the CEO of HUN Wheel “For me working in larger teams in a decentralised way is simple more fun”. Furthermore, one of the articulated disadvantages of centralisation was that even some senior managers did not prefer centralisation ethically. “(...) During the crisis the senior management can seem anti-democratic” (HUN Wheel).

4.4. Heterogeneity

Because of the small sample there was no significant heterogeneity among the reasons, only the following phenomenon could be identified. First, easier communication was more mentioned by medium and large firms, and international group member companies. Its main reason can come from the internationalisation and heavy growth because both can cause communication difficulties in the organisation.

Second, mostly large company managers stated that the efficiency of centralised organisations comes from the whole company focus. Certainly if a corporation is large enough to have multiple business units, their coordination is one of the core issues of the management.

Third, adaptation to the local conditions and acquiring new viewpoints to the decision-making process as reasons for decentralisation were emphasised mostly by small companies. Perhaps their small size determines they are more sensible to personal changes in the management than larger firms.

Finally, only two national specificities could be identified. Interestingly most of the Hungarian companies stated that one of the main reasons of centralisation was decision speed. While no British manager articulated it directly, almost all Hungarian senior managers said they centralised because they wanted to make decisions faster. On the contrary only British managers emphasised that centralisation made communication easier. This national heterogeneity can be a new direction of future researches.

4.5. The non-mentioned reasons

To have the richest data with the possible lowest confirmation bias, semi-structured interviews and grounded analyses were applied during the research. Therefore, only those reasons were examined in the proceeding parts which were mentioned by at least one senior manager at least once. Neither before nor during the interviews were they briefed about the findings of centralisation literature. Thus, it can be very interesting to investigate what kinds of topics were not mentioned during the 45-90-minute-long interviews however they are widely researched.

Innovation vs. centralisation

As it was described before there is a trade-off between efficiency and flexibility (Peng, 2009). Although almost every senior manager in the sample declared efficiency as one of the strengths of centralisation, neither of them described it is less good at innovation. There was only one senior manager (UK Cons) who mentioned that entrepreneurial type of personality does not favour centralised organisation. According to Aghion and Tirole (1997) if the agent is participated in the decision she can become more motivated. From the other perspective if an agent could participate in the decision-making forums but later she lost this right as a result of centralisation, she can become less motivated or less proactive than before. Hence, the company can lose its innovativeness. On one hand because there is no enough capital to invest during downturn, innovation is not a short-term issue. But on the other hand it is alarming how few senior managers mentioned this downside.

Costs of centralisation

Monitoring and information always generate costs (Aghion et al., 2013). According to the incentive view of delegation the main reason for decentralisation is increasing initiatives at lower levels of the hierarchy. In this approach the largest problem is that the headquarters time and attention is unpriced however control can be rather time consuming (Aghion and Tirole, 1997). Interestingly there was only one senior manager (HUN Material) who stated centralisation caused extra expenditures for them. But in their case their parent company centralised monitoring therefore they were the “victims” of the decision. No “centraliser” senior manager mentioned that their subalterns had to work more because of centralisation or the company had to implement costly restructuring.

It can be caused by several reasons. (1) Because external activities can be priced more easily than internal ones (Aghion and Tirole, 1997), managers not always take the increased costs of centralisation into consideration. (2) Additionally sometimes principals and agents would like to push these costs to the other (Puga and Trefler, 2002), thus it was hard to understand who covers which cost. (3) And finally they may not remember it at all.

Power issues of centralisation

Certainly almost every restructuring can awaken power issues in the organisation (Pfeffer and Leblebici, 1973) it is more likely in the case of centralisation. Very few senior managers mentioned power struggle or organisational reluctance because of centralisation but it can be really harmful in the time of depression (Marin and Verdier, 2008). Either they may overcome obstruction easily or it was not a pleasant topic to speak about during the interview, yet, very few senior managers described it.

Long-term consequences

Although restructuring can influence organisations in the long run only few senior managers described it in depth. All of the reasons or consequences of centralisation were discussed in shorter term or centralisation itself was examined as a temporary solution. Certainly there is a possibility for that they did consider the long term consequences as well but they hardly mentioned it during the interviews.

5. Discussion

According to the interview research centralisation can be considered as a reaction to downturn. Most of the senior managers did not mention centralisation while they listed the most important crisis management tactics. Most of the time after mentioning their survey answers (viz. they centralised or decentralised) they all could recall it. Moreover, every senior manager mentioned centralisation as a reaction to crisis without exception. Its detailed description highlighted that the different definitions of centralisation could be implemented during crisis management.

De facto centralisation is relatively easy to implement. For example, a senior manager stops to involve other people to decisions. Not surprisingly this was the most popular type of centralisation. The centralisation of the controlling mechanisms is a little bit more difficult but still easy. The top management can start to ask for new reports or current ones but more frequently. This step can have higher transaction costs but the largest portion of these costs is “paid” by those subalterns who create the reports (especially in the short run). Therefore, it does seem easy to implement for managers.

De jure centralisation contains the restructuring corporate governance which means a lot of administrative costs and a longer “turnaround time”. Therefore, it is a relatively difficult way of authority concentration. But the most challenging centralisation type is centralisation of implementation. Most of the time it means organisation restructuring which needs complex strategy and tiring implementation, to overcome the possible obstruction of the organisation.

Consequently, even those companies could centralise which did not implement complex organisation restructuring program. Moreover, some forms of centralisation (de facto, control) are so easy to start, may be most of the organisations cannot notice it for a while.

While all of the centralizing company described the relationship of their choice and the economic meltdown, no decentralizing firm mentioned any direct link between delegation and the depression.

Two of the three firms which decentralised were in the middle of a very intensive growth period and the crisis only slowed them down for a while in 2009. Therefore, their decentralisation (establishing new middle management roles) was more linked to prosperity rather than depression. The third company had been having a long turnover decrease trend when it decentralised (created a new sales manager role) around 2009. Moreover, the first two decentralisers stated that few years after the first wave of the crisis, they faced a new, more serious depression and then they re-centralised again.

According to earlier researches there are several reasons to decentralise during crisis. E.g. decentralised structure fosters organisational learning even in the time of crisis (Meyer, 1982). Aghion and Tirole (1997) state because of the costs of monitoring, the urgency of decision-making (e.g. crisis situation) increases the need of delegation. Based on the findings of this interview research, most of the companies in the sample did not decentralise because of the crisis. On the contrary economic meltdown was the root-cause why others centralised.

Certainly we should handle these results with care. May be only the senior managers did not remember well (it happened 5-6 years ago). May be the sample should be enlarged to more industries or countries. But according to this interview research and

earlier findings I can state the dominant direction of causality between economic cycles and change in concentration of authority is the following: crisis increases the probability of centralisation. We may find some counter examples but the main logic fosters centralisation.

In this part of the paper the main reasons of centralisation during downturn were discussed. Based on these findings we can assume that if decision-making authority concentration is changed in the time of adversity it may change during recovery as well. The following part introduces a model which can describe the relationship between change in level of centralisation and economic cycles.

6. Conjecture: Centralisation as an adaptation strategy to economic cycles

Because of the increased uncertainty in the environment, managers would like to have larger control in the organisations during depression. Additional to the normal business senior managers have to handle crisis as well. According to Aghion and Tirole (1997) if the principal is overloaded with projects, the real authority in the firm can be restructured. To handle difficult situations, central decision units prefer simplifications (Staw et al., 1984). Furthermore, Puga and Trefler (2002) state centralised organisations are better at cost control than decentralised ones.

In the time of prosperity companies would like to gain more flexibility to adapt to the growing opportunities of the business landscape. As Alonso et al. (2008) described decentralised organisation can be really good at flexibility because division leaders understands the local information better, and if they have enough decision rights they can react faster. Therefore, a decentralised organisation can innovate easier (Mone et al., 1998) and gain higher sales and total factor productivity growth than a centralised one (Aghion and Bloom, 2014).

Consequently, in general, companies centralise their authority in the time of crisis and decentralise it during prosperity. But certainly practice is far more complex than such a simple theory.

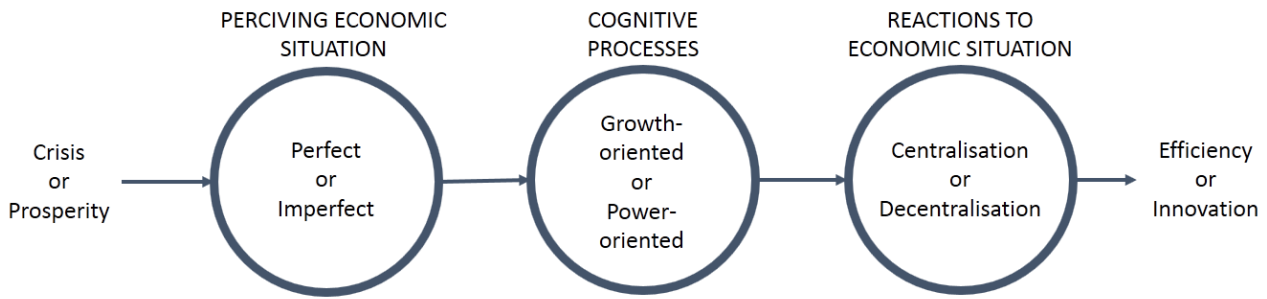
6.1. Imperfect adaptation to economic cycles

“I think maybe the crisis has created more centralisation than people needed to control the situation” (UK Cons). As the senior manager of UK Cons stated there is a possibility of imperfect adaptation to economic cycles. Centralisation may be useful during the crisis but destructive in the time of prosperity and vice versa with decentralisation. In the following part of the paper a theoretical model is introduced which describes how companies centralise according to economic cycles (Figure 8).

0. A general model of centralisation and economic cycles

The model has three elements such as (1) Perceiving economic situation; (2) Cognitive processes; (3) Reactions to the economic situation. The general model can handle only radical changes of economic situations such as crisis or prosperity. Steady state is governed by different dynamics which are not analysed this time. In the focus of the model there is the senior manager who perceives the economic situation and after considerations she chooses a reaction to it (either centralisation or decentralisation).

Perceiving economic situation. The first element of the model describes those sensors of the company which perceive the radical changes of the economic situation. To handle complexity only two types of perceiving are distinguished such as perfect or imperfect perceiving of the economic situation. The first theoretical category is close to the view of homo economicus: the senior manager has a perfect “sensor” for economic environment. It shows all the changes real-time which are inputs for perfectly fitting predictions about the future. The imperfect perceiving means the senior manager does not understand changes perfectly, she can only guess the future status of the environment. Moreover, detecting prosperity is always more difficult than perceiving crisis. “When there is growth in few weeks or one month it does not mean anything, but if there is growth even in the third month one after another, you can say something” (HUN Engin). Because during crisis there is a significant decrease in turnover, it can be identified easier than a slower recovery.



8. Figure Theoretical model about the imperfect adaptation to economic cycles

Source: Author's compilation

Cognitive processes. This part of the model defines the dominant logic of the senior manager in time of radical environment changes. In the case of growth-oriented cognitive processes her personal aims are aligned with the company goals. She believes if she maximises the profit of the company she will gain private benefits as well. Therefore, she uses calculative logic viz. she implements all changes which are necessary to increase profitability. On the other hand, power-oriented cognitive processes mean the senior manager believes her power within the organisation can ensure her private benefit-maximisation. Thus, she is motivated to maintain her decision-making authority in the firm.

Reactions to the economic situation. As it was studied before there are several possible reactions to radical environmental changes but in this model only two kinds of possible reactions exist such as: centralisation and decentralisation. Centralisation means the concentration of decision-making authority within the organisation increases and decentralisation describes the opposite⁴⁷.

⁴⁷ In this model we do not examine the original authority concentration we theoretically assume there are only legal and cognitive boundaries of centralisation and decentralisation. On one side there is the perfect tyranny and laissez faire market is on the other.

In the followings three main versions of the model will be described such as (1) “Perfect adaptor”; (2) Imperfectly rational; and (3) Power-oriented senior manager⁴⁸ (Figure 9).

1. “Perfect adaptor”

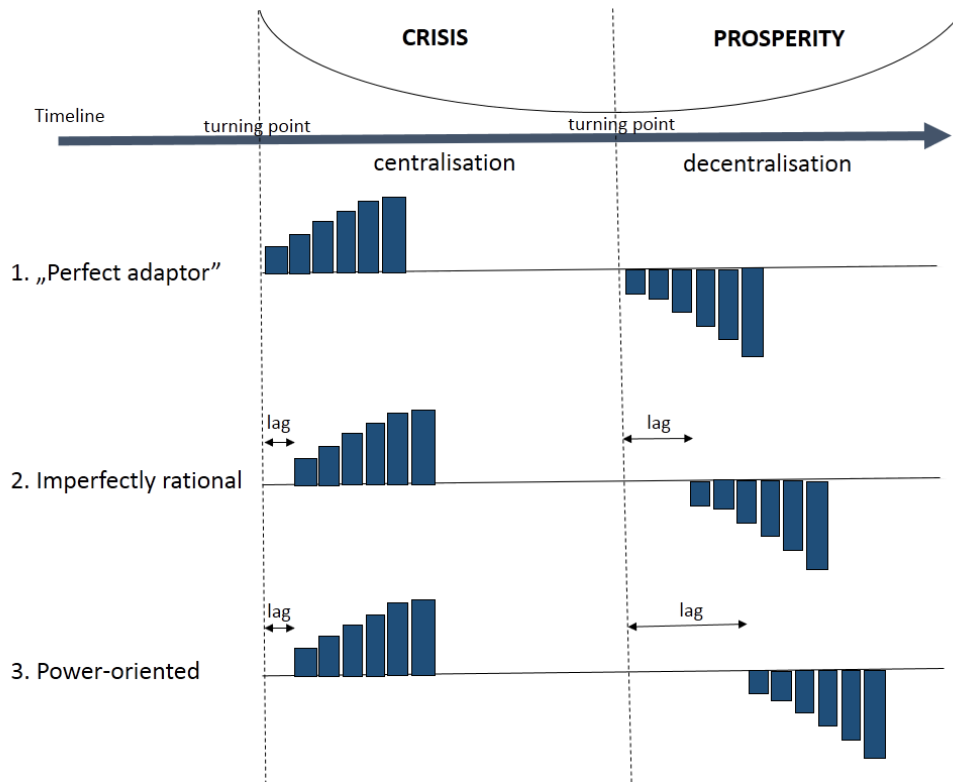
In this case senior manager perceives crisis perfectly and she implements growth-oriented logic as well. In the time of crisis, she knows immediately when depression starts when the first depression-related turnover decrease occurs. On the other hand, during prosperity she is able to catch the changing point of the market trends, and knows exactly when recovery starts.

Because she implements rational cognitive processes she understands during meltdown, company needs to decrease its costs and react to the organisational uncertainty as soon as possible. Therefore, she will centralise the company because by this way it can gain efficiency and higher decision speed. During recovery she knows the division leaders will be able to innovate and gain higher turnover and profit margin than her alone, thus she decentralises the firm.

2. Imperfectly rational

Here the senior manager cannot detect economic changes immediately. She is not sure whether the turnover decrease of the last report means a temporary slowdown or it is the first step of a disastrous collapse. The same situation emerges in the time of prosperity. She is growth-oriented and would like to maximize the profit of the firm, hence, she does not act until she becomes sure about the future trends. When she is assured about crisis she needs to have more control to gain more efficiency and thus in the turbulent environment she centralises. On the other hand, in the time of prosperity she decentralises. But because of the later economic trend detection there will be a lag both in centralisation or decentralisation.

⁴⁸ Theoretically a fourth type of model can be distinguished: there is a perfect perceiving and power-oriented cognitive process but because homo economicus view does not handle emotional factors we exclude this option from our model.



9. Figure Three types of imperfect adaptation

Source: Author's compilation

Moreover, as it was defined before the detection of recovery is always harder than of crisis thus decentralisation has a longer “lag”. As a result of the late detection of prosperity she will maintain centralisation a little bit longer than it is optimal and start decentralisation later. “When we believed in progression we decreased centralisation. We returned to the previous state in 4-6 months after recovery” (HUN Engin).

3. Power-oriented decision-making.

In this case senior manager cannot detect the trends perfectly and her cognitive processes are dominantly power-oriented. Hence she faces the same dilemma like before viz. she needs time to understand the trends. After she becomes assured about economic trends she starts to think about the reactions. Because she implements power-oriented cognitive processes she prefers power which is her key to maximize her benefits. Thus she centralises in the time of crisis because she cannot trust her colleagues can react to the downturn accordingly.

On the other hand, she will detect recovery later than crisis. Therefore, she will decentralise much later than it is optimal because she does not want to lose power.

“(After a decentralisation program) now we restarted rather a manual control because of the long-lasting crisis. Now we are in a strange mix (...) We will return to decentralisation immediately when the results show we can do it” (HUN Metal).

This part of the paper described how imperfect perceiving and power-oriented cognitive processes can maintain centralisation longer than it is optimal. Certainly it has serious consequences in terms of profitability which is analysed in the next part.

6.2. [Adaptation to centralisation cycles as competitive advantage](#)

Because centralisation can increase efficiency and decentralisation strengthen innovation the ideal timing of restructuring can provide competitive advantage. If a company earlier adapts to the environmental changes, it can gain efficiency or innovation before its competitors.

This adaptation advantage is widely discussed in business literature. Hamel and Valikangas (2003) call it resiliency. "Strategic resilience is (...) about continuously anticipating and adjusting to deep, secular trends that can permanently impair the earning power of a core business. It is a capacity to change before the case for change becomes desperately obvious" (Hamel and Valikangas, 2003, p. 54.). As we can see resiliency is a much broader concept but centralisation can be one tool to reach it.

According to Starr et al. (2003) those companies which are more resilient can access to capital cheaper than other ones. To gain this advantage companies need to adapt the economic cycles more accordingly. As Teece states (2007) one of the most important steps of creating dynamic capabilities is establishing effective sensing mechanism which can identify future business opportunities. Thus if companies can perceive crisis or prosperity better than other ones, they can react faster.

To implement a successful change management strategy, companies should focus on numerous success factors (Kotter, 1995). Albeit it is easier to establish a need of change in the time of adversity (Hemp and Stuart, 2004), according to Beer and Nohria (2000, p. 133.) almost 70% of organisational change initiatives still fail. One of the most important factors of change is organisational support which is influenced by power structures (Pfeffer and Leblebici, 1973). Thus if companies can handle their power struggles, they can react to environmental changes more easily. Certainly these are

only assumptions which should be analysed by further qualitative and quantitative researches.

Conclusions

The purpose of this paper was the qualitative description of the reasons why companies centralise during crisis. Based on the results we can identify some concluding remarks.

1. Decreasing profitability motivates companies to centralise.

In rational view centralisation is really useful during downturn because it helps companies to control costs and gain efficiency (Alonso et al., 2008). On the other hand, this process is strengthened even by power-oriented logic because significant decline in profit can cause panic and lack of trust in the organisation which increase the need of control. Furthermore, this centralisation can be maintained for a longer time if either they cannot identify prosperity immediately or they like power.

2. Senior managers hardly consider long-term effects of centralisation.

Albeit there are several studies describing why decentralisation is better at innovation or growth in general or especially during downturn, these reasons are not really considered during centralisation. One of the main reasons of this phenomenon can come from loss avoidance approach (Kahnemann 2011). Because during depression most of the companies try to decrease costs which favours centralisation as we have seen before. Cost cutting-driven centralisation can always generate faster results than a hazardous sales increase-driven decentralisation. A rapid centralisation can seem a safer and better choice than a stronger innovative capability of which results can be harvested only in the future. Therefore advantages of centralisation in the time of adversity always override its disadvantages.

3. The adequate timing of change in concentration of authority can provide competitive advantage.

If companies centralise in the time of crisis and delegate during prosperity, adaptation to economic cycles can be crucial. This can gain competitive advantage if the companies can perceive economic situation and restructure their authority better than

their competitors. Advanced controlling systems can support the detection of turning points in economic cycles and strong self-reflection can help companies avoid power struggles during organisational restructuring. Certainly to develop such an adaptive capability, manager competences are crucial. As Aghion and Bloom (2014) state there is a correlation between skilled managers and decentralisation but the direction of causality is not clear.

SUMMARY AND FURTHER RESEARCHES

1. Key results

The main purpose of this thesis was the analysis of the relationship between economic crises and concentration of authority.

1. Centralisation vs. Decentralisation.

Concentration of authority helps manage resources by handling their informational and behavioural aspects. Concentrated authority (centralisation) is good at global efficiency because it allows companies to optimise to the whole organisation, not just few particular units. On the other hand, decentralisation is better at innovation because it empowers the organisational member to experiment and to share ideas.

Centralised and decentralised organisations are two sides of the same continuum where companies can move. Managers must handle the “illusion of extremities” which describes neither end is preferable. The too centralised organisation has to face a significant overhead and bureaucracy while too much decentralisation can result in lack of cooperation.

2. Companies centralise during crises.

As a consequence of an extreme demand shock companies increase the concentration of authority. Because of the uncertainty, senior managers can experience anxiety and mistrust which can be a trigger to raise the control inside of the organisation. Moreover, centralised organisation is better at efficiency and communication which are important to handle the demand shock.

Concentration of authority has several forms, such as: centralisation of de facto and de jure strategy making; of implementation; and of control. Both types of centralisation are closely related to crisis tactics, mostly to short-term, cost-cutting actions. Concentrated decision-making authority is rather useful in the middle of the crisis, it helps companies react rapidly and gain efficiency.

3. Centralisation has significant disadvantages in the long run.

Although centralisation is advantageous in short-term, it can cause difficulties as well. First of all it can increase the transactional costs within the firm because it intensifies

the workload of the employees (e.g. more reports, tighter control etc.). Second it can lead to the “illusion of extremities”. Because it is a helpful tool to handle crisis the centralisator senior manager can think more and more centralisation can increase the chances of survival. Certainly it also results in higher costs and more bureaucracy.

Third as a consequence of less innovation, centralised companies has slower growth than others. Escalating the problem, some senior managers maintain centralisation longer than they should because they either cannot perceive perfectly the beginning of the recovery or they just simply like power. Hence, those companies which can change the concentration of authority according to the economic situation can gain competitive advantage.

2. Managerial implications

To sum up, centralisation can be beneficial during crisis, but in mid-term it can decelerate growth. To handle this issue, managers should focus on the following topics (Figure 10).

Perceiving crisis	Cognitive logic	Centralisation
Questions: <ul style="list-style-type: none"> Is it a crisis? How serious is it? 	Questions: <ul style="list-style-type: none"> Why should we centralise? How does centralisation fit to other crisis tactics? What type of centralisation should be applied? What is the current concentration of authority? What are the long-term effects of centralisation? 	Questions: <ul style="list-style-type: none"> Which part of the organisation should be centralised? What are the costs and benefits of the centralisation in different parts of the organisation? When will we decentralise again?
Tips: <ul style="list-style-type: none"> Controlling and forecasting system Industry insights 	Tips: <ul style="list-style-type: none"> Self-reflection Long-term perspective Open discussion 	Tips: <ul style="list-style-type: none"> Reconsider costs and benefits regularly Resiliency and openness to change

10. Figure Key topics during centralisation

Source: Author's compilation

Perceiving crisis. At the beginning of crisis, senior managers must understand the turning point and the seriousness of change on time. According to the interviews those

companies could react faster which had got a more advanced controlling system or more actual insights from the industry. Forecasts and early warning systems help companies to make bold decisions about fundamental changes. If we understand the need of change early, we may have enough resources to create a radically new business model which fits the new economic environment.

Cognitive logic. Every crisis strategy contains several steps and actions, and only one of them is centralisation. Its efficiency and decision speed can strengthen other short-term tactics such as cost-cutting. On the other hand, we should examine the current concentration of authority as well. If the corporation is rather centralised already, the further concentration of authority can cause more problem (e.g. authorisation process extends or people become more reluctant). Thereafter we should consciously decide which type of centralisation we want to apply. If the organisational structure is reshaped the *de jure* strategy making and the implementation should be centralised. If the core strategy is a cost-cutting lean program, centralisation of control can be beneficial. Whichever we choose, we should consider its long-term effects. If we centralise the strategy making, fewer ideas will be shared. If the implementation becomes centralised, employees have less possibility to experiment or become less motivated than before. Both phenomena can decrease the future growth of the company.

Centralisation. Centralisation can be motivated by lack of trust and power issues in the organisation. To avoid the negative effects of this change (e.g. power struggle, decreased employee motivation) we should decide in which organisational unit and why we want to centralise. Second, because it will generate costs in different parts of the organisation we should be aware and communicate this change. To handle the long-term negative effects of centralisation we should make cost-benefit analysis regularly and determine when we will decentralise again (e.g. after 3 months of continuous revenue growth or after we become financially liquid again). This self-reflection and willingness to change help companies to gain competitive advantage during crisis.

3. The management accelerator effect conjecture

The previous chapters lead us to the management accelerator effect conjecture which is a cyclical theory concept of centralisation. To analyse it in-depth we should restructure the most important messages of the previous chapters.

The main question of the thesis was the following: what kind of relationship exists between concentration of authority and economic crisis. Management accelerator effect helps us broaden the question to the relationship between concentration of authority and economic cycles. It is a hypothesis which describes that the centralisation habits of firms can strengthen economic trends. Therefore to define management accelerator effect a theoretical model should be formulated based on three core elements such as (1) national growth; (2) firm performance; and (3) concentration of authority.

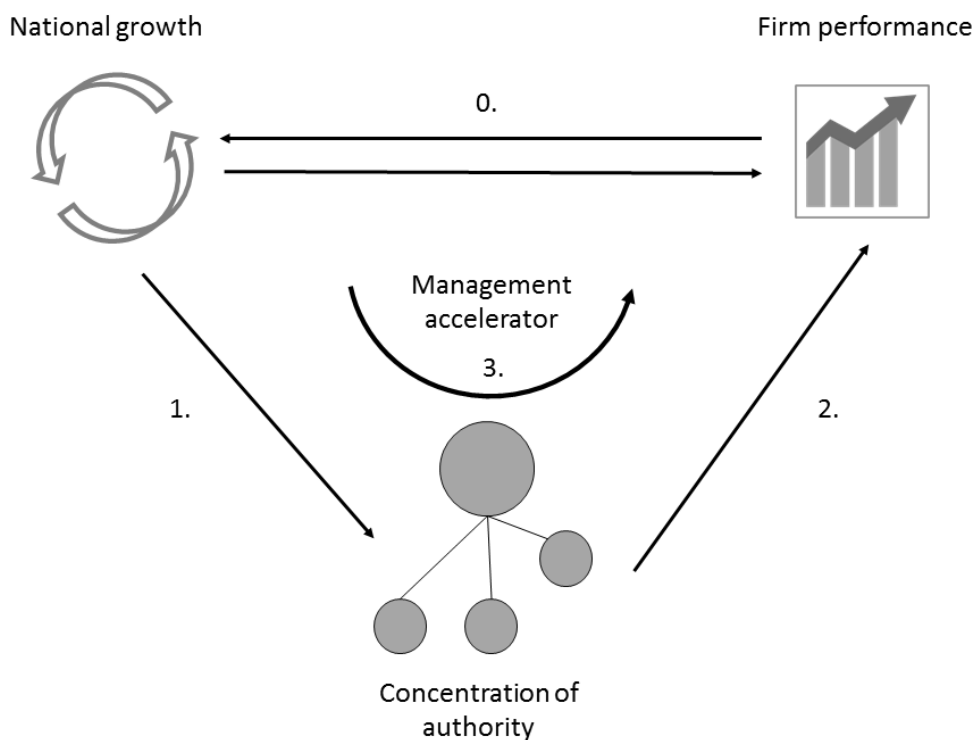
Considering national growth, this conceptual framework focuses only on economic cycles. In our case, economic cycles are defined as a sequence of strong growth periods (prosperity) and serious recessions (crisis). Firm performance means the long-term profitability of the firm. Concentration of authority is the structure how resources are managed in the firm. These elements are interrelated in several ways as Figure 11 shows.

0. National growth and firm performance. Obviously, national growth is an aggregation of performances of firms. There are several macroeconomic theories which describe this relationship but in our case the most fundamental link between them is innovation⁴⁹. This widely analysed connection has two main parts. First, innovation influences economic cycles. Huge amount of researches have examined this link since Schumpeter published his pioneer study on cycle theory in 1912 (Schumpeter, 1980). It describes how entrepreneurial innovations strengthen economic growth. But on the other hand it can also cause recession because innovations foster overinvestments

⁴⁹ Measuring innovation is always problematic (Szabó and Derecskei, 2012). It becomes more difficult when we try to categorise innovation during crisis because downsizing and even centralisation can be a form of innovation. To handle this challenge some studies just simply exclude organisational innovation from the examination (Zoghi et al., 2010).

and credit expansion which can throw the economy into recession (Madarász, 2002).

Second, because innovation requires significant amount of investments, economic cycles greatly influence innovation activities (OECD, 2012). E.g. in the time of depression companies are suffering from shortage of capital to invest, therefore they hold their innovations back (Reinhart and Rogoff, 2009). The same logic can be applied describing how capital abundance strengthens innovation⁵⁰.



11. Figure Relationship between economic cycles and centralisation.

Source: Author's compilation.

This thesis is not a macroeconomic work therefore the in-depth analysis of macro cycles is too far from its primary scope. However its findings can

⁵⁰ Certainly on company-level we can find several counter-examples. E.g. the Japanese Shin-Etsu Chemical is very famous for its contra-cyclical innovation activity. During prosperity it is always preparing for crisis and vice versa. It may be one of the most important reasons why it has been still operating for more than 100 years (Rhodes and Stelter, 2010).

contribute to this field by explaining how centralisation of strategic management influences economic cycles.

1. National growth and concentration of authority. The second and the third chapter of this thesis paid a lot of attention on this relationship. According to their findings in the time of crisis companies centralise their strategic management. This can be a result of lack of trust; increased need of control or a willingness to gain efficiency. Both the quantitative and qualitative research results proved this hypothesis.

On the other hand, in the time of prosperity firms decentralise their strategic management because they would like to involve new knowledge or information to decision-making or want to foster entrepreneurship within the organisation. These phenomena were called the centralisation cycles conjecture. Albeit both the qualitative and quantitative researches provided some evidence to this hypothesis, they were not significant; therefore further researches are needed at this part. But as it was mentioned, change in concentration of authority can have serious long-term consequences.

2. Concentration of authority and firm performance. Centralisation of strategic management influences company performance in several ways which was examined in the first chapter during the description of the general nature of planning.

According to these results centralisation is good at global efficiency while decentralisation fosters local adaptation. In general centralised companies are better at efficiency and cost-cutting and decentralised ones are better at innovations.

Both the qualitative and the quantitative chapters showed centralisation is strongly related to short-term crisis reactions which help survive the crisis. On the other hand, only the quantitative analysis proved that centralisation is less good at mid-term growth.

If we analyse the 1st and 2nd steps in the model we can better understand the management accelerator effect. The Table 13 shows which parts of the model were proved by empirical evidences in the dissertation.

Hypotheses		Theoretical results	Empirical results	
			Quantitative	Qualitative
1a)	Crisis increases the probability of centralisation.	✓ ✓	✓ ✓	✓ ✓
1b)	Prosperity increases the probability of decentralisation.	✓ ✓	✓	✓
2a)	Centralisation increases efficiency.	✓ ✓	✓ ✓	✓ ✓
2b)	Decentralisation increases innovation.	✓ ✓	✓	—

13. Table Management accelerator model and empirical evidences

Source: Author's compilation.

3. The management accelerator effect. Change in concentration of authority is an indirect way how economic cycles can influence innovation. In the time of crisis companies become more centralised which decreases their innovative capacity in the short run. In the time of prosperity they decentralise and gain more innovation capability.

But as the third chapter showed, not all companies adapt to economic cycles perfectly. Some firms would not like to change at all, others want to restructure authority but they cannot manage it in the right time. Those companies can gain adaptation advantage which can centralise and decentralise accordingly. The analysis of adaptation advantages of firms leads us to understand the management accelerator effect.

Consider a nation economy with several companies changing their concentration of authority according to economic cycles. If these companies are good at changes they can gain adaptation advantage which affects the whole nation economy. This statement has two serious consequences: (1) centralisation interacts with economic cycles back and forth; and (2) centralisation management practices influence country-level competitiveness as well.

- (1) Centralisation and economic cycles. One of the results of the thesis was that exact timing and implementation of restructuring authority can increase company performance. Therefore the growth of the whole economy is

influenced by the centralisation performance of its firms. Consequently on one hand restructuring of decision rights is a result of the economic cycle and on the other hand it is also one of the influencing factors of growth and recession.

- (2) Centralisation and country competitiveness. If in a country there are more firms which centralise effectively, it can gain better performance than another country. But on the other hand if this centralisation is maintained even in the time of prosperity, companies lose their innovation capability. Therefore appropriate centralisation practices can increase the competitiveness of the whole nation economy as well.

It is important to note economic growth and competitiveness are not based only on centralisation practices. Moreover it may not be the most important factor of them, but it still matters. It can be considered as an accelerator factor which influences productivity of labour and capital. For example if the companies of a country can centralise and decentralise effectively with adequate timing, the whole economy can grow faster. Or on the contrary if they cannot do so, the country must face a much slower growth or a longer recession.

Please note, this schematic concept is an assumption showing only the main direction of causality. It is just a dominant logic from which some firms can differ in several ways. First, not all companies change their concentration of authority. Moreover according to the second chapter 73.5% of the manufacturing firms in the EFIGE dataset did not change it at all in 2009. Second, we always can find contra-cyclical examples because 7.1% of the firms decentralised during crisis. But still, only centralisation had significant relationship with crisis and decentralisation shows far better results in innovation. Therefore the model above describes the main logic of cycle-centralisation interactions.

This is the management accelerator effect conjecture which remains only an assumption in this thesis but future researches may analyse it in-depth.

4. Further researches

Certainly only one PhD thesis is not enough to cover all of the most important questions of the field therefore we can identify a plenty of interesting directions for further researches.

The first chapter synthesised the calculation and corporate planning debate. Certainly there are several other debates in the literature which focus on centralisation. It would be very interesting to examine debates about authoritarian and democratic leadership from political and management science perspectives. Moreover even crisis-time centralisation has a huge literature in history and political science (e.g. the dictatorship in the ancient Rome).

Considering the second chapter a longitudinal analysis can support the centralisation cycles conjecture. Moreover if we could record panel data about centralisation and economic performance of particular companies, we would be able to estimate the management accelerator effect as well.

Also time-series data could be a further step for the third, qualitative paper which showed why firms centralise during crisis. But the sample could be broadened by an Italian sub-sample as well. It would be very interesting because Italian companies preferred centralisation the most, among the six examined countries.

Besides these potential new researches, several other slightly-related topics emerged during the thesis as well. I think the thoughts about strategic management are getting more and more “meta” by the time. Between 1950s and 1960s the core issue of strategic management (business policy) was how complex activities of the organisation can be planned. In the next few decades the most important question was that how we can gain competitive advantage. Between 1980s and 2000s the concepts of strategic management focused on the sustainability of competitive advantage.

But nowadays, the sustenance of the existing advantages is not enough: companies should gain new advantages. The growing turbulence of the 21st century prompted companies to rethink their strategic concepts because in this hypercompetitive environment product and technology life-cycles are getting shorter. Thus they should

prepare themselves to create new sources of competitive advantages by innovation and product development.

This inspiration motivated me to research two topics which is not strongly related to centralisation. The first is the concept of strategic mindsets. Strategic mindset is the sum of those cognitive patterns of a group of individuals in the organisation which fundamentally influence their assumptions about business opportunities. In 2013 I wrote a conceptual framework which describes two assumptions such as (1) the more dynamic strategic mindset results in the more radical innovation strategy; and (2) in time, strategic mindsets become more static. This paper was published in the Budapest Management Review in 2014.

The second innovation-research topic is more theoretical describing the Misesian rent of the firm. During the research of the first chapter I had the opportunity to analyse Mises' works about planning. Several times he described the importance of the forecasting ability of the entrepreneurs which inspired me for a new study about economic rents. I think there are two kinds of economic rents such as (1) scarcity-related or (2) uncertainty-related rents. The first category covers the monopoly, Ricardian, Paretian rents and the second one contains the Schumpeterian and Misesian rents.

As it was described before because of turbulence strategic management focuses on gaining new competitive advantages thus forecasting ability is increasing in importance. Therefore, I would like to conduct a research about the concept of Misesian rent. But because this thesis ends here this study is something for the future.

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