Management and Business Administration Doctoral School

SUMMARY OF THESES

to the Ph.D. dissertation of

Gergely Mohl

titled

The Theory of Risk Assessment and its Domestic Practice in Financial Audit

Supervisor

Dr. János Lukács, CSc
associate professor

Budapest, 2013

Financial Accounting Department

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Contents

1 Antecedent research and the justification of the chosen topic

External audit or similar activities have been performed for many thousands of years. The profession of audit made a large journey since its formation in a methodical sense too both in Europe and in the US: instead of the entry-by-entry (arithmetical) checking of bookkeeping and the investigation of frauds the evaluation of the elements of financial reports took the central position – in the beginning the inspection of the balance sheet, and later with an ever increasing importance that of the income statement (Lee et al., 2008).

Nowadays the primary objective of an external audit is to ensure the confidence of the users (stakeholders) of financial statements in the financial statements (ISA 200). According to Barkman (1977) *credibility* takes on two forms in the process of auditing: on the hand through the audit procedures performed the auditor himself tries to gain confidence about the credibility of the assertions in the statements. On the other hand the report issued certifies the financial statements to the outside parties.

In order to issue a well-founded report, the auditor has to gain *reasonable* assurance on the fact that the financial statements as a whole are free from material misstatements, whether due to fraud or unintended error. The emphasis is on reasonable assurance: this means a high (but not absolute!) level of assurance.

In nowadays' financial audit the risk assessment plays a central role: all the relevant international (and national) audit standards demand the performance of a risk based audit, though at the very same the categories connected to this issue are quite weekly defined, the methods of risk measurement (and assessment) are mostly neither elaborated nor quantified. Here we may arrive at a contradiction, as this wide ranging riskiness is part of a profession, in which the most objective measurement and the highest level of accessible precision is the goal. As even the international standards on auditing admit: *"The assessment of risks is based on audit procedures to obtain information necessary for that purpose and evidence obtained throughout the audit.* ***The assessment of risks is a matter of professional judgment, rather than a matter capable of precise measurement****."* (ISA 200/A32.; bold letters by me G.M.)

So given is a from society's point of view extraordinarily important but at the same time risky profession, in which the assessment and controlling of risks plays a central role. I studied this topic in my thesis.

I wished to discuss, how the concept of audit risk has evolved, where are its roots in the literature of economics, in what directions is one researching to improve it, including the different methodical approaches and critics of content. My empirical research was primarily dedicated to answer the question, to what extent does this model bear relevance and explanative force in nowadays' Hungarian auditing practice.

Already this elementary – and extremely general – **problem raising had many incentives**. On the hand the disturbing silence that surrounds this topic in the current domestic literature. Though all the Hungarian language text- and professional books dealing with auditing (too) discuss this topic and put emphasis on its importance (assessment, basis for planning etc.), but they do not go beyond the presentation of professional standards. The situation is even more distressing in the field of research. With the exception of the sole research (Lukács, 2008) that was mentioned in the thesis, one cannot find any more that deals with this topic. So it could be baldly stated that today (2013) the field of audit research is truly a terra incognita in Hungary.

In the first quite theoretical part of my dissertation I came up with two possible interpretations of audit risk. The conclusion of both of them was that the auditor works under the circumstances of uncertainty, while his job is to provide his or her clients with assurance. After this I introduced the literature of uncertainty and risk in economics to a depth that fits the needs of the dissertation. Following this I studied how the audit profession copes with the handling of this uncertainty and risk. Here I also briefly analysed the formation of the concept of audit risk as we know it today through the processing of early academic literature and the current professional regulation as well (covering only the most important regulations of auditing standards).

Following this I discussed how academics and professionals try to improve this model. On the one hand I inspected what kind of methodical streams can be identified to improve the assessment of audit risk under the given conceptual framework. On the other hand I studied what kind of criticism is drawn up based on this conceptual framework, and in what directions does one try to expand the content of audit risk.

I dealt with the somewhat "isolated" Hungarian literature and domestic research antecedents separately from all these. The reason for doing so was that in the

Hungarian language literature a clear research orientation could not be identified, and as such these works could hardly be fit into the stream of international literature.

Finally I overviewed the previous (mostly foreign) empirical research related to audit risk, quasi to synthesise the introduced theoretical literature. The empirical research dealing with the practical application of the audit risk model of the professional standards served with many conclusions:

1. By far not all the auditors apply the model, or they do not apply it appropriately.

2. The components of risk are not always treated sharply separated from each other, as independent entities – though the mathematical formula behind the model of the standard would suggest this. However, other research come to contradicting results.

3. The work of the professional auditor – as almost every human activity based on personal judgment – is threatened by the halo effect.

4. The current model of audit risk is primarily a tool appropriate to treat risk arising from (unintended) errors, while in case of frauds it is less effective.

5. The application of the model in practice is quite rigid – it does not react to the changes of risks. The model's influence on behaviour is in many occasions exiguous – the connection between (previously) estimated risks and the audit carried out based on these risks is weak. At the same time relevant professional experience plays a vital role in its application as it significantly increases effectiveness.

The research conducted gave me the opportunity to test most of these phenomena under Hungarian circumstances.

2 Results of the theses

2.1 Method of research, population, structure and processing of the survey

Based on the aforementioned facts the empirical research necessarily turned out to be investigative in nature, as according to Babbie (2003) all of its three regular elements are present (better understanding of an uncharted area, grounding of future research, elaboration of future processes).

The method used to collect data was the survey method. Due to reasons of cost effectiveness and to increase the willingness to participate in the research, the survey was common with another research studying fair valuation. In contrast to previous plans the survey was not sent out via post, but electronically[1] in association with the Chamber of Hungarian Auditors (MKVK, hereinafter the Chamber or MKVK).

The research carried out is based on primary collection of data, which means that it contacted all the domestic, active (not suspending his or her chamber membership) auditor members of the chamber. From a temporal aspect, the research was meant to record a status, so it is basically a cross-sectional research. Questions asked of auditors related to the practices followed during the finished audit season of 2011.

Auditors were informed about the final accessible version of the survey on 25th July 2012 via the regular electronic newsletter of the Chamber. Based on the information received from MKVK an email was sent to 3,152 auditors asking them to fill in the questionnaire on a voluntary basis[2].

The questionnaire was open till 15th September 2012, which gave enough time for a response (taking summer holidays and preparations for the new audit season etc. in consideration) and to process the received answers.

Before the research I had expected to have a sample with 100 to 120 units in it. These expectations were then met, as I received 104 adequate answers, which means a response

[1] For the purposes of the research I used the platform of online-kerdoiv.com. Auditors had the option to ask for the survey via post and to answer on paper sending back the package free of charge. No such request has come to me.

[2] The research could address 100% per cent of the target population, with relatively low costs, which is undoubtedly a large advantage compared to former paper based inquiries. It is another issue that not even this method could result in a high response *rate*, but at the same time the *absolute number* of elements in the resulting sample was adequately high.

rate of merely 3.3%. All this means that I had a well analysable sample in the end with a unit number that exceeded that available for previous research.

Naturally the chosen method of research without doubt gives a less detailed view of the subject studied than a case study or interview based research would have done, despite this I still believe that the chosen form passed to the nature of the research (ie. investigative).

In the first section of the survey (questions 1 to 7) my aim was to learn the auditor's and his company's main features. I asked them about the general form of activity (privately, in a company, with assistants or without them, international relations etc.; questions 1 and 2), the number of audit engagements (q. 3), the nature of clients (company, bank, public sector institution etc.) and their size (sales revenue in case of ordinary companies, the PSZÁF[3] classification by banks; q. 4 to 6) and the accounting system (Hungarian Act on Accounting, IFRS, US GAAP, other etc.) behind the financial statements audited (q. 7).

In the second, essential part of the questionnaire (questions 8 to 19 and 27) I asked questions about the practice of risk assessment pursued by the auditors. The questions were closed ones to ease answering and processing, and with one exception I used a 6 level Likert scale, where answer 1 meant "it is not true in my case / I do not agree with it at all", while answer 6 meant "it is always true in my case / I completely agree with it",

To process the results I used the IBM SPSS Statistics 20 programme package, which was made available to me by the university.

2.2 Formation and demonstration of hypothesis H_1

The domestic market of auditing – according to my hypothesis – could be characterised by a certain duality. There is the Big4 and all the "others". Of course this latter category can be refined: one may find the auditors acting alone in it, as well as the Hungarian members of the so called mid-tier companies. But as the guide book of the Chamber recognises: *"Unfortunately the formation and spreading of domestic networks of companies starts very slowly, so only the Big 4 and a maximum of 3-4 other companies have an own handbook of auditing. The purpose of such a handbook is to make up for the deficiencies of tuition and to have a tool in the hands of the auditor that could be affiliated for use on a daily basis,*

[3] Hungarian Financial Supervisory Authority

and something that comes up with answers to the new challenges that could be faced on a new engagement." (Csendes et al., 2010, p. 5.)

So it could be assumed that a certain part of Hungarian auditors works without a written methodology when assessing risks. If we combine this with an earlier domestic research result, i.e. only some 60% of auditors perform such an assessment at all (Lukács, 2008), we may arrive at the following hypothesis:

H_1: A certain part of domestic auditors – mostly those without an international background, smaller market participants not belonging to any of the international networks – does not work according to a written methodology, but rather intuitively when assessing audit risks.

By the first hypothesis one might expect significant differences based on the size of the audit firm and its international embeddedness (Big4 background and belonging to international networks).

To test this hypothesis I calculated frequencies, rank correlation coefficients (Spearman), and made a crosstab (Chi square test) and discriminant analysis. The statistical validity of frequencies was tested by Friedman test and Wilcoxon signed ranks test. **Based on the results I accepted the hypothesis, and besides this my preliminary hypothesis of the market of auditors could be justified**. That is, indeed there is a part of the domestic auditors' society – and this is mostly the part without international background – that works on an intuitive basis when it comes to risk assessment.

2.3 Formation and demonstration of hypothesis H_2

The second hypothesis was deducted from the result of the many times quoted domestic empirical research (Lukács, 2008), that is without risk assessment one cannot perform a risk based audit. Thus hypothesis 2:

H_2: A part of Hungarian auditors does not use a risk based audit approach.

While testing this hypothesis the following were revealed:

1. the fundamental perception of auditors concerning audit risk is not completely consistent,

2. between the general perception of audit risk (i.e. whether it is subjective or objective) and the realisation of risk assessment there are no strong correlations in the studied sample,

3. with respect to the general perception of audit risk assessment and the realisation of risk assessment in case of the "it is quantifiable and I quantify it" approach there is a weak-medium level correlation, while in case of the "it is a qualitative category and I use qualitative categories" approach there is virtually no correlation at all, what questions the consistency of the responses,

4. auditors are consistent in risk assessment concerning first and subsequent audits,

5. surprisingly auditors do not distinguish between their approach (i.e. to document the work performed or not) according to the size of the engagement.

One of the key charts of the research was the result of the cluster analysis performed here:

Statement	K1	K2
10/ When assessing audit risk I do not follow a formalised method, but rather I work on an intuitive basis.	40.5%	15%
11/ The assessment of audit risk is only an administrative (documentation) burden.	72.9%	25.4%
12/ When working in audit engagements at the first time I assess risks but not in a written form.	91.8% (!)	1.5% (!)
12/ When working in audit engagements I assess risks in case of subsequent audits but not in a written form.	81%	18%
12/ When working in audit engagements risk assessment is mostly needless in case of subsequent audits.	27%	4.5%

Chart 1: The results of clustering with respect to attitudes towards risk assessment; percentages illustrate the rate of those within the clusters (K1 and K2) who do not agree with the quoted statements.

The statistical validity was confirmed by Mann-Whitney U test that shown significant difference between the two clusters in all five aspects.

Based on this chart I could prove that the studied population can be divided into two well separable groups, which handle audit risk completely differently. The resulting clusters were used in case of the testing of the forthcoming hypotheses as well.

To test this hypothesis I calculated rank correlation coefficients (Spearman), and made a crosstab and hierarchical cluster analysis. **Based on the results I accepted the hypothesis**.

2.4 Formation and demonstration of hypothesis H_3

Before this dissertation was prepared there was no domestic data available with respect to how risk assessments are made while performing audit engagements. So the questions here were aimed at learning whether auditors make a component based risk assessment. If yes, which method do they use (work on a probability basis, using checklists etc.). If the assessment is completed does this result in a quantitative or a qualitative estimate? Hypothesis three was formed to test these issues.

H_3: Risk assessment is mostly not made on a component basis, and the estimated risks are mostly not quantified, but instead, qualitative categories are used (such as low, medium, high).

This hypothesis too was tested using the statistical tools used to test the previous hypotheses. Based on this the **first part of the hypothesis** – i.e. risk assessment (when it actually happens – here I strongly relied on the results of the testing of hypothesis 2) is not made on a component basis – **had to be rejected**; **the second part** according to which auditors working on a risk basis mostly use qualitative categories **was clearly supported by the available evidence**.

2.5 Formation and demonstration of hypothesis H_4

The basis for this hypothesis was provided by former empirical evidence (see e.g. Daniel, 1988). The testing of this hypothesis gave me an opportunity to find out whether in those cases where the audit is really performed on the basis of risks, are we facing a transaction based approach or one that uses a strategic lens focusing on the business risks of the client. The thought behind this was that the application of the strategic approach requires a thorough methodological knowledge and vast resources (see e.g. O'Donnell et al., 2005; Peecher et al., 2007; Marden et al., 2009; Schultz et al., 2010). Out of these two

requirements especially the latter one is something that most domestic auditors lack, and will lack in the future as well (see: Lukács, 2011; Garajszki, 2011).

Accordingly hypothesis no. 4:

H_4: Among those auditors, who perform a risk based audit, the majority uses a transaction based approach.

The fourth hypothesis was aimed to examine the practice of auditors who perform risk based audits and was searching for the answer to the question: what approach exactly is used to assess and estimate risks. The main difficulty during the inspection was not the testing itself but the judgement of the issue whether the received responses are consistent at all.

When testing this hypothesis besides the statistical tools used earlier, I also made a factor analysis (principal components analysis) and ran a Friedman and a Wilcoxon test in order to find out whether the transaction based or the strategic approach is more widely spread among those, who actually perform a risk based audit.

During the testing it became clear to me that in the current Hungarian practice auditors build up the comprehensive risk from the individual components by sharply separating them, and not even the detection risk is determined based on the comprehensive risk (this finding was parallel to the responses to question 14).

Basic statistical methods did not allow me to answer the question whether the transaction based or the business risk based approach is the more widespread among those who perform a risk based audit – this was the reason for using factor analysis.

When doing so, the idea was to find a significant difference between the use of the results of these two risk assessment methods in any of the possible fields (planning, performing, evaluation of the audit etc.), then the method that could be linked to the further use will be the one that is actually applied by the respondents, despite the fact that the responses are quite similar with respect to these two contradicting methods.

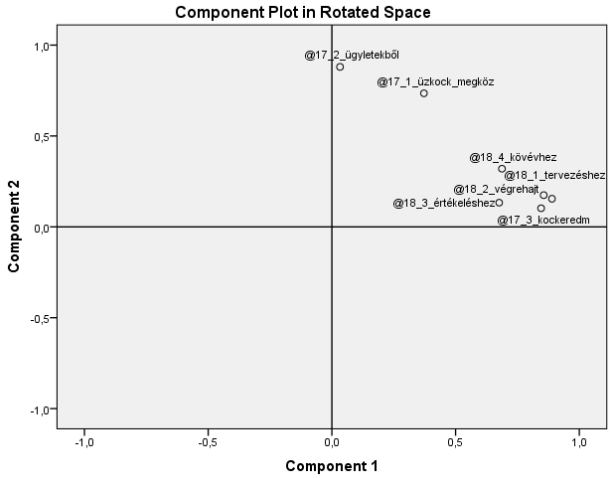

Figure 1: The component plot of the factor analysis to test hypothesis H_4

The results of the analysis clearly showed that not even the factor analysis pulled one of the approaches and the use of its results into one factor. However, based on the matrix of factor weights, the transaction based approach plays a more important role than the business risk approach concerning the use of the results of risk assessment. The same results were confirmed by Friedman test and Wilcoxon signed ranks test.

Based on the tests performed I accepted hypothesis H_4.

2.6 Formation and demonstration of hypothesis H_5

Moving along this thread of thought the following question arose. To what extent do those auditors who actually make a risk assessment use the results of such an assessment (for the purposes of planning, collection of evidence, evaluation). Answering this question again would be a great opportunity to come up with a reflection on international empirical result (such as Bedard, 1989; Mock et al., 1993 and 1999).

Based on this hypothesis 5 was the following:

H_5: Those domestic auditors, who make a formal audit risk assessment, does not use the result of this assessment when carrying out audit engagements.

The statistical tools used were the same as before. To verify the answers I ran a Friedman test a pairwise Wilcoxon signed ranks test. Both tests confirmed that a statistically significant difference exits only related to use/not use (in favour of use), but related to the field of use (planning, implementation, evaluation etc.) no differences could be discovered.

From the above, it seems to be clear that auditors claim to heavily rely on the results of the risk assessment in every respect. **Therefore,** based on the **results I had to reject Hypothesis H_5** as it turned out that the results of risk assessment are widely used by auditors.

2.7 Formation and demonstration of hypothesis H_6

The survey gave me a good opportunity to prepare a kind of empirical risk map, based on which one may find out which are the most risky areas in the financial statements according professional auditors. Through this it was possible to confirm those opinions according to which auditors put a special emphasis on items containing accounting estimates (see e.g. ISA 315.; ISA 540.; Boritz, 1991; Petroni et al., 1996; Mohl, 2004; Glover et al., 2005; Smieliauskas, 2007; Marden et al., 2009). **The experience gained this way could be used in many fields in the professional world as well** (education, professional tuition, legislation etc.). Within this hypothesis I also studied the perceptions of auditors related to fraud or more precisely their perceptions of risk of fraud. This again gave me the chance to reflect on international results (Loebbecke et al., 1989; Shibano, 1990; Srivastava et al., 2009). So my last hypothesis was:

H_6: Hungarian auditors – in harmony with professional standards and the international literature of the issue – identify accounting estimates as significant risks.

The last question of the survey (question 27) was aimed at preparing the aforementioned risk map. Respondents had to indicate whether they find a certain area of the balance sheet (and the related parts of the I/S) or a certain issue (such as taxation or the evaluation of the going concern assumption) risky if they occur, and to what extent do they think they are risky and what is the reason for this riskiness: error or fraud.

It could be stated that out of those areas where estimates are present only the amortization of intangibles, revaluation and fair valuation was not on the list of risky items. All the other areas involving estimates are deemed to be risky by the participants. Extremely risky are inventories, receivables and as a more or less domestic specialty the field of taxation.

I reached the following conclusions:

- risky areas include almost all those that involve accounting estimates,

- fraud as a main source of risk does not appear (though it is of course present as a source)
- inventories, receivables, accruals, prepayments and provisions are the critical, estimate prone areas.

Using the same statistical methods as before and **based on the tests run I accepted the hypothesis.**

***

Altogether out of the six hypothesis set up prior to the research four was completely accepted (H_1, H_2, H_4, H_6), one was accepted partially (H_3), and one had to be rejected (H_5).

3 Summary of conclusions

Based on the testing of the hypotheses through a sample of professional Hungarian auditors I managed to form a view on their perceptions and practice related to audit risk. **As it was expected the research according to its investigative nature raised as many new questions as many it managed to answer, and as such a bunch of relevant new research topics have emerged.**

The results of the research carried out are summarised in the below points (in brackets the number of the hypothesis that led to the conclusion):

1. Based on the analysis of the responses it turned out that the Hungarian profession shows the signs of duality in many aspects, let it be the general circumstances of the activity or the methods used (working papers, materials of the Chamber etc.). [H_1]

2. It could be clearly seen that the companies and auditors without international roots do not build international connections. It also became evident that auditors of larger firms – mostly the Big 4 companies – have a larger number of engagements per auditor than individual auditors or those who work at smaller companies. [H_1]

3. It also turned out that auditors do not make an exception with respect to the methods used to assess audit risk: they use the same methods, guides as they use generally. [H_1]

4. It could be stated that the use of audit software brings auditors towards formalism. This phenomenon could not be discovered by those mainly using paper based working papers. [H_1]

5. A significant difference could clearly be seen between auditors working individually and those working with assistants related to the level of intuitivism pursued in their work. The presence of assistants and the fact of working in a workgroup are likely to play a role in this. *Revelation of the effects of these factors could definitely be subject to future research.*[H_1]

6. Based on the analysis performed it could be stated that the sales revenue of the client companies has no clear effect on the level of intuitivism in the work of auditors. [H_1]

7. The fundamental perception of auditors concerning audit risk (whether it is a quantitative or a qualitative category) is not completely consistent. [H_2]

8. In contrast to this, auditors are consistent in risk assessment concerning first and subsequent audits: those who prepare written risk assessment in the first engagement are likely to do so in subsequent periods as well, while those who do not do so are likely not to do so in the future either. This latter group is also likely to completely omit risk assessment. [H_2]

9. After stating that there is a part of the Hungarian auditor society that does not perform risk based audit, it also turned out that those who do perform a risk based audit assess risk on a component basis and work with qualitative categories. [H_3]

10. An interesting instructive of the question researching detection risk is that the profession is quite divided concerning its treatment. *The different existing methodological approaches in this field would be worth to be researched in the future.* [H_3]

11. Based on the responses received it turned out that the respondents build up the comprehensive audit risk from its components rather than decomposing it to separate components. *The practice and methodology applied here could be subject to future research.* [H_3]

12. I also managed to conclude that auditors use the business risk or the transaction based approach in most of the cases, but at the same time they are lot less determined in using the outcomes of these methods. The rigidity of the prescribed working programmes hijacks them from doing so. [H_4]

13. I managed to prove that the transaction based approach plays a larger role in the audits of the respondents than the business risk based approach. [H_4]

14. It also became clear that those auditors who follow a risk based approach do utilise the results of the risk assessment – both in the given and in subsequent years. *What this utilisation actually covers, and what effect the previous year's audit has on the next year's audit risk assessment and the generally followed working programme could be subject to future research.* [H_5]

15. Finally it also could be proven that accounting estimates are identified as sources of risk almost without exception irrespectively of the accounting system of the financial statements being audited. [H_6]

16. It was also discovered that auditors mostly identify errors as the cause behind risk, while they do not devote this role to fraud. *Further research could reveal the actual causes of riskiness and the relationship of errors and frauds.* [H_6]

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5 Publications of the author in the topic of the thesis

1. Mohl Gergely [accepted for publication]: A kockázat szerepe a könyvvizsgálatban. *Vezetéstudomány (expected date of publication: 2013)*
2. Mohl Gergely [2012]: A bizonyosságfüggvények elméletének alkalmazása a pénzügyi kimutatások ellenőrzésében. *Hitelintézeti Szemle* 3., pp. 211-229.
3. Mohl Gergely [2011]: Mintavételezés a könyvvizsgálatban I. *Számviteli Tanácsadó* 1. szám, pp. 17-19.
4. Mohl Gergely [2011]: Mintavételezés a könyvvizsgálatban II. *Számviteli Tanácsadó* 2., pp. 14-16.
5. Mohl Gergely [2008]: Megújuló könyvvizsgálati standardok 2008. III. *Számadó* 3., pp. 5-7.
6. Mohl Gergely [2008]: Megújuló könyvvizsgálati standardok 2008 II.: A 240. témaszámú standard. *Számadó* 2., pp. 8-13.
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8. Mohl Gergely [2006]: Új könyvvizsgálati standardok II. *Számadó* 1., pp. 9.-14.
9. Mohl Gergely [2005]: Új könyvvizsgálati standardok I. *Számadó* 12., pp. 12.-18.
10. Mohl Gergely [2005]: Becslés és értékelés a könyvvizsgálatban II. *Számadó* 1., pp. 6-14.
11. Mohl Gergely [2004]: Becslés és értékelés a könyvvizsgálatban I. *Számadó* 12., pp. 6-12.

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