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Performing Organisational Change Projects:

Embedding Storytelling and Ethics

Consulting Organisational Change in Cooperation

Networking with Different Actors

Considering Leadership Style and Employee Involvement

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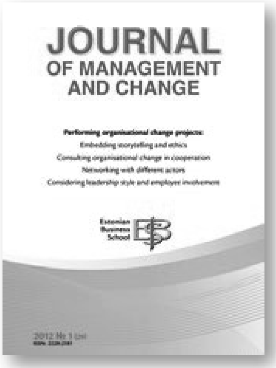

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Journal of Management and Change (JMC) is a peer-reviewed scholarly journal that serves as a discussion platform and offers guidance in managing change and organisational development.

Changes can take place in different contexts and forms in society, professional activities, organisations, theoretical approaches and orientations. However, managing change is never easy, but is a great challenge for private and public sector leaders alike requiring careful planning, implementation and evaluation, and good change management. JMC aims to provide its readers with assistance, guidance and information in all these areas.

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Editorial: Organisational Change and Development

Dear Reader,

You are holding in your hands the first issue of the Journal of Management and Change; however, the journal already has quite a history, since it has been published since spring 1995 under the name EBS Review, and so in reality it is also the 29th issue of our journal.

At the end of last year our Editorial Board decided to change the name of the journal in order to better suit the scope of the journal and refer to changes that have taken place in our business world. In addition, the new name also aptly describes the changes it has gone through as a publication. Initially, it was presented as a university magazine, a magazine for our professors, students, alumni and the board, containing research reports and articles from our own people while also leaving space for interesting contributions from outside, including our foreign partners. It was a place to share the work our faculty members had done, publishing articles with a research orientation and highlighting events at the business school.
Today, Journal of Management and Change is a peer-reviewed journal, where although anyone is welcome to submit their research articles, we only accept about 25–30% of submissions for publication. So far we have published 28 issues, and in its current electronic form, articles can be accessed by a wider range of audiences through the EBSCO database.

The journal covers business and social science fields such as management, leadership, organisational change, corporate governance, business ethics, corporate responsibility, sustainability, economics, finance, accounting, banking, human resources management, marketing, international business, entrepreneurship development, international relations, law, development studies, cross-cultural studies, public administration, women's studies, education and so on.

We have a permanent international editorial board, all well-known and distinguished academics and high-level specialists in their fields. Our aim is to pursue a continual process of improvement by broadening the editorial board with top specialists from various fields of management and business administration and receive high-level contributions from around the world. The journal publishes different kinds of original papers, including conceptual and empirical research, case studies and managerial approaches.

Journal of Management and Change is indexed with and included in EBSCO databases, and according to ETIS its publication category is 1.2.

In this issue of Journal of Management and Change you will find six papers discussing change in organisations and in society. It can be said that it is increasingly the norm for most organisations that they have to plan, implement and manage change in a rapidly changing environment. However, managing change is a great challenge for both private and public sector leaders, as it is essential to ensure that projects and programmes are viable, and that all activities are performed in time and within budget. A business change is complex, requires strong leadership and excellent organisational skills and collaboration. Dynamic environments require dynamic processes, people, systems and culture; change can be successful when there is a high level of cooperation capacity, networking, the right values, ethics and trust. Change management focuses on people, and is about ensuring that change is elaborately, coherently and sustainably implemented.

The first paper is 'Sharing culture: Embedding storytelling and ethics in the process of cultural change' from **Simon L. Dolan** and **Yuanjie Bao** from Spain. By applying a social constructivist and interactional view to storytelling, the authors indicate how the employees can perform the role of agents in the process of change using storytelling. As values play a crucial role in the process of storytelling, the authors introduce a value laden storytelling process model. The literature incorporating value congruence and storytelling is reviewed based on this model as are value laden storytelling cases to illustrate their theoretical arguments.

Karl Prammer and **Christian Neugebauer** from Austria look at how collaborative change processes can be managed from the consultant's perspective. Their paper 'Consulting organisational change cooperation – challenges, issues and solutions in theory and practice' explores the question of how collaborative change processes can be successfully managed and consulted through concrete interventions. The authors try to investigate how partners from completely different working contexts, logics and cultures can "co-produce" benefits within the cooperation. They argue the case for shared action, which generates enough "energy" for the key players to embark on an adventure of co-operation. The cooperation capacity of public organisations and profit companies has been seen as an increasingly valuable resource.

The paper by **Ülle Pihlak** and **Ruth Alas** focuses on employee involvement and leadership style during planned organisational change management projects in Indian, Chinese and Estonian organisations. The authors analysed 177 interviews about organisational change management in organisations in three very different cultures. Their study shows that both leadership style and level of employee involvement are different in these countries. They discovered that although the leadership style of the change leader is autocratic in China and India, and participative in Estonia, employee involvement in decision-making about the content and implementation of change is more frequent in China. In addition it also appears that while the level of employee involvement has a positive correlation with the success of changes in India and Estonia, the study did not show such a correlation in China. **Francesca Culasso, Laura Broccardo, Elisa Giacosa** and **Alberto Mazzoleni** from Italy in their paper 'Corporate governance in listed Italian family firms: impact on performance and comparison with non-family firms' analyse the impact of board composition on performance. The research of a sample composed of listed Italian family and non-family firms contributes to the literature on family corporate governance and shows that family involvement has a positive effect on company performance.

In the paper 'Tax compliance and tax attitudes: the case of Estonia' **Kerly Randlane** from Estonia explores the compliance of individual in Estonia in regard to paying taxes. She studied people's attitudes and compliance toward paying taxes, and how compliance and individual characteristics are connected. The outcome of the research showed that general attitudes towards the state and whether taxpayers express their trust in the state influenced overall compliance with the obligation to pay taxes. The research also revealed that education plays an essential role in developing the tax behaviour of individuals.

In establishing monetary policy, decision-makers must take into account the possible future evolution of important macroeconomic variables such as inflation, unemployment and interest rates. **Mihaela Bratu** from Romania asserts that econometric modelling and exponential smoothing techniques are two quantitative forecasting methods with good results in practice. In her paper 'A Comparison of Two Quantitative Forecasting Methods for Macroeconomic Indicators in Romania, Poland and the Czech Republic' she attempts to identify which of the two are better for short-run predictions in those countries. Using accuracy indicators the author demonstrates that smoothing exponential techniques generate better forecasts than simple econometric models in Poland and the Czech Republic, while for Romania econometric models are more suitable.

Dear reader, we hope that this brief introduction to the topics in our renamed journal inspires interest in the topics and papers presented in this issue. As usual the articles gathered here have gone through the time consuming process of review and evaluation, and the authors often had to amend and submit their papers several times before our distinguished editors were satisfied with the results. We consider the topics covered to be important and hope, dear reader, that you can find something interesting to discover. We would also like to show our gratitude to the authors, editors and partners, indeed to everybody who has helped us prepare this issue for our readers.

Wishing you all a pleasant and stimulating read,

Ruth Alas and Mari Kooskora

Sharing the Culture: Embedding Storytelling and Ethics in the Culture Change Management Process[1]

Simon L. Dolan, Yuanjie Bao
ESADE Business School, (Ramon Llull University)

Abstract

This paper applies a social constructivist and interactional view to storytelling and argues that employees can play an agency role in the storytelling process. We claim that values play a crucial role in this process and assert that value congruence is the key to ethical storytelling processes. We also introduce a value-laden storytelling process model and review the literature incorporating value congruence and storytelling based on this model. In addition, we examine the role of shared storytelling in the organizational change process using several value-laden storytelling cases to illustrate our theoretical arguments. Lastly, we discuss the implications for research and practice.

Keywords

Organizational culture, Social constructivist, Storytelling, Values, Value congruence

Introduction

Storytelling in an organization is "a natural entry point to understanding and intervening in the culture(s) of an organization" (Boyce, 1996). The discussion of storytelling theories in management literature is mainly anchored in the organizational culture area. An important theoretical question in the study of storytelling is whether it is, in fact, an effective tool utilized by management to instill organizational values and norms and to communicate management ideology, thus coordinating employee actions to fulfill organizational goals. Some scholars propose that storytelling is used by management as a control mechanism and that employee needs for freedom and participation are consequently ignored (Barley and Kunda, 1992). Others acknowledge that employees are active participants in the storytelling process (Flory and Iglesias, 2010). Whether storytelling is a passive or an active process for employees is still subject to debate. An ethical challenge is thus raised in the discourse of storytelling literature on whether employees eschew their personal interests and lose their identities when assuming organizational goals (Bowles, 1989; Boyce, 1996) in the storytelling process. The question is: is storytelling another strategy of persuasion?

Whether storytelling raises ethical concerns is, in fact, a question affecting its very nature. If we adopt the active perspective, acknowledging the agency role employees play in the

[1] Note: an early draft of this paper was presented by at the, **4th International Conference on Rhetoric and Narratives in Management Research** (a joint collaboration between ESADE and RSM, Erasmus University). Barcelona, March 24th to 26th . The paper was presented by Yuanjie Bao and was titled: "Sharing the culture: The role of storytelling in the process of managing by values".

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Yuanjie Bao has recently obtained his doctorate degree at ESADE Business School specializing in management sciences. He is a member of the Future of Work Chair team at ESADE, and has developed a specific interest in "Value Congruence" which has led to numerous publications in this field. Email: yuanjie.bao@esade.edu

storytelling process and deeming it to be an interactive process (Flory and Iglesias, 2010) that is created and shared by both the teller and the hearer, the possibility arises that the nature of storytelling is, in reality, a type of negotiation.

By referring to the social constructivist perspective and interactional psychology theories, in this paper we discuss the nature of storytelling from a value congruence perspective. An interactive storytelling process is shared and thus influenced by the characteristics, attitudes, and behaviors of both sides involved. We further present the active role that the hearer plays in the storytelling process. Specifically, we discuss the compatibility between the teller's and hearer's values and how this congruence or incongruence will affect the storytelling process in the organizational context. Thus, the objective of this paper is to examine the nature of storytelling from the value congruence perspective, highlighting the role values play in the storytelling change management process. We also discuss the role of shared storytelling in the organizational change process and present several value-laden storytelling cases to illustrate our theoretical arguments.

This paper contributes to organizational culture and change management research by showing how shared values communicated via storytelling help to reshape an organization's culture and help it achieve its goals. We also contribute to storytelling literature by discussing its nature from the value congruence perspective and freeing it from the charge of ethical wrongdoing.

The Nature of Storytelling

Two Conventional Views of Storytelling

In keeping with Aristotle's claim that narrative is the art of persuasion, the traditional view of storytelling is that it is a managerial mechanism to get things done. After all, an organization's need to accomplish seemingly organizational goals requires the use of multiple resources. Some scholars claim that organizational storytelling is not a "solid" resource and that its usage is in doubt. By contrast, the traditional view of storytelling recognizes its usefulness and influence within the organization (Flory and Iglesias, 2010). This traditional view is responsible for having restored storytelling's organizational importance, but it applies an instrumental view of storytelling and has been criticized for this. While some scholars recognize the use of storytelling in several management processes (Denning, 2004), others have criticized it by claiming that it represents the sheer manipulation of employees and is only a question of gaining more power and control (Barley and Kunda, 1992; David and Strang, 2006). Thus, storytelling incorporates an inherent ethical dilemma, more specifically, the issue of employees losing their self-identity in the process of hearing the story. Management teams that frequently use storytelling instill organizational ideology and philosophy into the employees. This is a type of brainwashing and serves to guide employee actions to accomplish organizational goals. In this view, storytelling, by nature, can be seen as a means of persuasion.

The second and more social view sees storytelling in a context of multiplicity. Storytelling is part of the organizational rhetorical process. Storytelling reveals its own inherent complications and contradictions. It involves reality recognition, communication and interpretation, but it also serves to create organizational reality. It is plural by nature because it involves the storyteller and hearer at the same time. This way, it also differentiates the subject and object, whereby the teller is the subject and the hearer is the object. If we consider organizational reality and meaning to be pre-established, then storytelling is transmitting and understanding. And, if we consider reality and meaning to be created in an ongoing storytelling process, then it is also creating shared beliefs, assumptions, culture, norms and objectives. Thus, storytelling is a shared organizational experience that involves both the storyteller and hearer in an interactive process in which organizational meanings are created, transmitted and reconstructed. It is a shared process but it also has a specific subject and object; it is a state but also a process; it is a means and also an end in itself. We can consider storytelling to be an organizational mechanism or also see the organization as an ongoing storytelling process. If we see storytelling as an ongoing process for organizational members to constantly recreate and renew their organizational meaning, then storytelling's nature is based on negotiation. Storytelling is thus about meaning creation and understanding. Because of this nature, storytelling can be absolved of any ethical offense because reality is co-created (albeit only partially, as we discuss later). Thus, storytelling's problem is not an ethical issue but, rather, an ontological one.

A social constructivist view of storytelling can become crucial to understanding its nature (Boyce, 1996; Flory and Iglesias, 2010). According to social construction theory, social reality is created by the interaction between actors. In storytelling discourse, organizational reality is partially created by languages (Hartelius and Browning, 2008). If we consider storytelling to be a dynamic process involving interactions between teller and hearer, then it is logical for the storytelling process to already be influenced by human behavioral predispositions or traits even before the process begins. These include people's basic assumptions, values, norms, cultures, preferences, attitudes, etc. All these personal characteristics will influence the storytelling process. The values and basic assumptions that the teller and hearer bring to the process, the story's location, time and content, and even the hearer the teller chooses to talk to are determined by these traits. It is also highly possible that different hearers will interpret the same storytelling process differently and that different hearers will influence the storytelling process differently due to their distinctive characteristics. Thus, how the storytelling process is, whether it is successful and what meaning it creates is all determined by the actors' basic premises and characteristics. Both the teller and hearer can be meaning creators in this process, and this meaning is co-created through their interaction (Abma, 2003). McCloskey's (2006) "sweet talk" proposition, namely, that leaders are also persuaded through the rhetorical process, echoes this view.

Although this second conventional view of storytelling admits the interactional nature of storytelling and the hearer's active role as an agent, it still has its problems. Firstly, the fact that storytelling is seen as a shared experience and that one story can yield multiple understandings is not very pragmatic from the management's perspective. In this case, managers cannot know how to best manage the story-

Table 1: Differences between the traditional and social views of storytelling and their contributions

	Traditional view	Social view
Nature	Storytelling is a managerial mechanism.	Storytelling is a socially constructed process.
Meaning	Meaning already exists; reality is told to the hearer.	Meaning is co-constructed and constantly being constructed.
Role	The employee is a passive hearer.	The employee is an active hearer.
Context	Context does not matter.	Context matters.
Prescription	Managers should learn the art of storytelling.	Managers should pay attention to the other side of the story.
Relationship	Persuasion	Negotiation
Contributions	It recognizes the importance of storytelling in management.	It recognizes the multiplicity of storytelling.
Limitations	Employees lose their self- identity: an ethical concern.	There is a lack of managerial prescription; it neglects issues such as hierarchy and power.

telling process to have a unified effect and develop a shared organizational culture. The "operational validity" of this storytelling view is thus limited (Becker and Huselid, 2006). Secondly, admitting that the hearer also plays an active role in the process does not necessarily lessen the ethical concerns because the role is still different on both sides. Power relations, hierarchy and other political elements may imply different weights for both sides, and the hearer's actual influence on the storytelling process may be very limited. Thus, the ethical charge still holds, although mitigated.

We summarize the differences and contributions of these two conventional views in Table 1.

Thus, the conventional view of storytelling leaves the question of ethics unanswered, namely, whether storytelling is an act of persuasion or negotiation. Although recent developments in the field acknowledge that storytelling can yield multiple interpretations and co-create meanings, it still has not fully addressed this issue. The fact that multiple interpretations exist erodes the effectiveness of storytelling as a unified and powerful management instrument. Similarly, the fact that meanings are co-created does not necessarily generate satisfying results for either party because possible power and political games will take place. Even worse, if employees feel outplayed in the interaction process, it will lead to negative attitudes and behaviors based on the fact that employees' meaning creation needs are not satisfied.

Values and Value Congruence

As discussed, the social view of storytelling recognizes that both participants bring their own characteristics with them to the storytelling process. Thus, their values are also introduced in this process. We will first discuss the value and value congruence concepts and then examine how the value congruence perspective offers insights on the nature of storytelling.

One basic predisposition of human behavior is having values. Values are beliefs that a specific mode of conduct or end-state of existence is preferable compared to other modes of conduct or states of existence (Rokeach, 1973). Values are about whether things and deeds are good or bad. Values function as basic recognition processes and guide human attitudes and actions toward social interactions (Dolan, 2011). Values also have linguistic properties because what a person says and how he/she says it are determined partially by values. As such, if we consider that the storytelling process is determined by human behavioral predispositions and acknowledge that values are brought to the storytelling process, then we can discuss storytelling from a value perspective. Thus, values are important to consider in the storytelling process because of human predispositions and moral and linguistic characteristics. These characteristics make values critical in the storytelling process.

The concept of values and organizational culture is also a shared experience during social interactions within the organization. As interactional psychology posits, not only do the characteristics of both parties influence the outcome of an interaction, but the joint effects of those characteristics are also important (Chatman, Wong, and Joyce, 2008; Ekehammar, 1974; Schneider, 1983; Turban and Keon, 1993). Some scholars have proposed that, in an organizational context, value congruence, that is, the compatibility between employee and organizational values, can affect employee attitudes and behaviors well beyond the effects of those employee and organizational values on their own (Dolan, Garcia, and Richley, 2006). Empirical research suggests that value congruence can lead to positive employee attitudinal outcomes such as job satisfaction and organizational commitment (Bao, Vedina, Moodie, and Dolan, 2012 ; Verquer, Beehr, and Wagner, 2003) and have behavioral outcomes such as in-role performance and citizenship behavior (Hoffman and Woehr, 2006).

Although the conventional view of storytelling recognizes the importance of interaction, it has not focused on the interaction effects between the teller's and the hearer's characteristics.

Based on the fundamental importance of values in the interaction process, human predispositions, moral and linguistic characteristics and the use of storytelling in the organizational cultural perspective, we can see the necessity and importance of discussing the storytelling process from the value congruence perspective. We argue that storytelling is, in fact, an interactive process in which the values from both sides intermingle. Furthermore, it is only when the values of both sides are congruent that we can say that the storytelling process is successful. We further argue that this process addresses the ethical dilemma raised because meanings are co-created through an interactive process and mitigate the multiple interpretation effect because similar values lead to similar interpretations. Also, employees will not feel that the organization is taking advantage of them by instilling ideologies into them; on the contrary, they find those stories acceptable and enjoyable. Organizational culture is thus shared and reconstructed through the storytelling process.

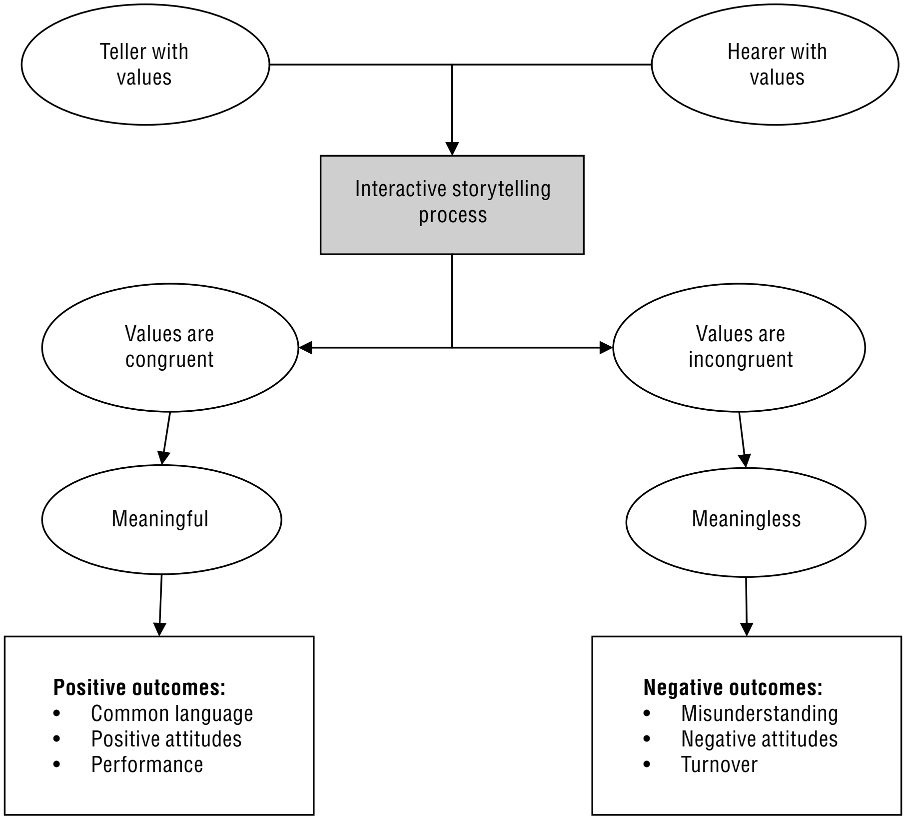
A Value-Laden Storytelling Process or Embedding Values in Storytelling

If we consider the storytelling process to be fundamentally influenced by the values that both sides bring to the process, then we can reconsider the storytelling process and especially its outcomes from a value congruence perspective (see Figure 1).

As Figure 1 illustrates, both teller and hearer incorporate their values in the storytelling process. Thus, the storytelling process is an interaction (the shadowed area) between the teller's and the hearer's values. The storytelling process is then an exercise in trying to find a common set of values. In a similar vein, if two people have exactly the same set of values, then storytelling's effect is minimal or, conversely, the storytelling process is very efficient because both actors tend to understand the story very well and share a common language and orient their actions towards a common goal. Storytelling is thus a process of finding these common values. We could also say that when people share values there is actually no need to tell a story. We propose here that the purpose of storytelling in the organization is to understand each other's values and agree on a common set of values. After the storytelling process, if both parties find the storytelling meaningful, this implies that they share the common values found; similarly, if they construct a common understanding, then they will have a common language to communicate and act accordingly. As a result, the organizational goal is achieved through common values and understanding (Simon, 1976). Conversely, if the parties find the story meaningless, then negative effects and behaviors will become manifest and possibly lead to organizational failure in the future.

The value-laden storytelling process has its merits. Firstly, it defines storytelling as a shared experience, and its goal is to find a common set of values. And because values are predispositions of human behavior, the people who share similar values will have similar interpretations of similar stories. Therefore, if storytelling is successful and common values are clarified and understood, then there will be no multiple interpretations of a single story. Management's intentions with storytelling are then successful because organizational reality is socially constructed and shared. They create a "we" in phenomenological terms (Davis, 1986). Secondly, with respect to the conventional view of storytelling, although meanings are co-created, it is logical that employees do not have the same weight as management in the process and that there is tension associated to ethical concerns. But, if storytelling is a process of finding common values, then no matter how much weight each party has, the common values will guarantee that companies do not

Figure 1: The value-laden storytelling process model



instill values in employees if the employees do not share those values. Thirdly, because values are linguistic in nature, after the story is told and understood, and when the employee has to retell this story to other stakeholders, such as customers, it will guarantee that the same story is told, and it will not be recounted literally but based on a true understanding of the values included in that story. Therefore, the organizational culture is preserved and transmitted (Parada and Viladas, 2010).

Managing the Storytelling Process from the Value Congruence Perspective

Another approach to revealing the nature of storytelling is to examine its role in the value congruence and organizational culture management processes. If storytelling is used to achieve value congruence, then it is indeed a value interaction process as we claim. As numerous studies in the field of organizational culture demonstrate, storytelling is used in culture creation, transmission, projection, assimilation, adaptation and identification processes. We review here some key studies to support our claims. This use of storytelling in the culture management process also echoes our claim regarding the managerial significance of the value congruence perspective in storytelling as mentioned above.

Culture Creation and Transmission

Organizational culture researchers argue that the characteristics and personal experiences of founders and key leaders play a crucial role in the formation and creation of an organization

(Schein, 1983, 2009). As we know that storytelling is an important tool used by leaders (Bass and Steidlmeier, 1999; Fry, 2003), they can also use storytelling as a means to manage organizational culture (see the cases described below). Some have proposed that organizations are unique and different because their cultures are different or because their organizational stories are different (Martin, Feldman, Hatch, and Sitkin, 1983). In this sense, culture and stories serve the same purpose, and culture is a communicative approach to organization (Schall, 1983). Stories can be used to create culture and common beliefs (Lounsbury and Glynn, 2001; Marshall and Adamic, 2010; Wilkins, 1984). For example, a founder can tell his/her personal life stories to demonstrate his/her values. Stories are actually used to create and communicate culture, and, if we deem that culture consists of meanings which are constantly created through social interactions, the only way to create a culture is through storytelling and communication. One can thus argue that culture is created and recreated through storytelling (Lyons and Kashima, 2001).

After culture has been created (or recreated), it needs to be transmitted to different generations of leaders and employees. In this sense, storytelling aids in the culture transmission process. In other words, a story is a powerful tool to transmit organizational values between generations, especially in family firms (Giudici, Dessì, and Floris, 2009; Parada and Viladas, 2010). Some scholars reinforce this view by showing the effects of stories on transmitting culture and values within organizations; others have also revealed this effect within immigrant families, minorities and other contexts of social interaction.

Culture Projection and Assimilation

From the management perspective, stories can also be used as a powerful tool to project specific values to stakeholders such as employees and customers. Stories are used to communicate specific values to employees by their direct supervisor (Driscoll and McKee, 2007) and to set up organizational and leadership legitimacy (Golant and Sillince, 2007); they can also be used as a change mechanism for culture reengineering processes (Brown, Gabriel, and Gherardi, 2009; Wines and Hamilton, 2009; Wortmann, 2008).

Organizations also use storytelling as a marketing device to project and instill its values in its customers (Badovick and Beatty, 1987; Urde, 2003; Vinson, Scott, and Lamont, 1977; Yaniv and Farkas, 2005). Some scholars propose that when the values the organization projects are similar to the values processed by the customer, optimal marketing success is possible. Various storytelling techniques can be used in this regard. This includes not only the stories that sales and PR staff tell customers, but also advertisements, legends, publications, websites and other rhetorical means that serve to tell a story.

If we consider broader storytelling mechanisms that are not limited to oral stories, but include other rhetorical devices such as ceremonies, rituals and symbols (Trice and Beyer, 1984; Ulrich, 1984), the use of storytelling as a means to project and assimilate values is clearer.

Culture Change, Adaptation and Identification

Employees will eventually adapt to and identify with organizational culture through socialization processes. According to the attraction-selection-attrition model (Schneider, 1987; Schneider, Goldstein, and Smith, 1995), employees tend to be attracted to, selected by and remain within the organization whose values are similar to their own. This effect leads to a unified and stable organizational culture. Similar to our model of the value-laden storytelling process, employees can reject organizations whose values they do not agree with, or, via our model statement, whose stories they find meaningless. Some argue that socialization ends when the employee knows what is considered appropriate in a given situation, what is accepted and how things are done (Ashforth and Saks, 1996; Bauer, Morrison, and Callister, 1998; Cable and Parsons, 2001). We propose here that storytelling is, in fact, a socialization tactic that is used and shared by both the employee and the organization. Only after the story is shared between management and employees and after the employee can retell that story to other individuals, in other words, only after he/she shares the implicit values the story encompasses, is the employee fully socialized and does he/she fully identify with the organization.

The Role of Shared Storytelling in the Organizational Change Process

Because of storytelling's importance in the organizational change process and its role in value-based management and coaching processes aimed at reengineering organizational culture, we present three case studies in which the role of this shared storytelling process in the context of organizational change has been manifested. We highlight the role the leaders play in storytelling in all three cases. These studies encompass firms in three countries with three distinct cultures on three different continents: China, Brazil and Germany.

Case 1: China - Yun Ma's Small Pieces of Gold

Founded by Yun Ma in 1999, the Alibaba Group is now one of the largest internet B2B companies in the world. Yun Ma is a pioneer in the internet who aims to make the internet accessible, trustworthy and beneficial for everyone, especially small and medium-sized companies around the world. He shares his simple but value-laden story about entrepreneurship through his most famous quote: "We always try to pick up the small pieces of gold when we are on the road to success, and when the small pieces of gold add up, the weight is too much for us to reach the peak of the gold mountain." This simple story reveals his views regarding the choice between visionary long-term success and short-term benefits. The value reflected in this story helps us understand the important strategic choices in his company's development process, its defined vision, its survival after the burst of the internet bubble and the changes produced in the company.

In 2000, despite being a difficult time for internet companies, Ma introduced his firm to others in Silicon Valley (US), Hong Kong and London. At that time, the company could have introduced some short-term beneficial strategies to earn quick money, but Ma held on to his idea of climbing up to the "peak of the gold mountain" and maintained his core business value, namely, helping people with the internet. In 2001, he introduced a change in organizational culture, its focus summarized by the slogan, "if you are frivolous, just leave the company." As a result, by telling the story about the small pieces of gold, he and the company were able to hold on to its long-term strategic vision and visionary goal. By re-examining Alibaba's core, they found that payment security was crucial in order for small businesses to use the internet. They therefore decided to create a large platform for these firms to do business. Hence, the company introduced a safe transaction gateway for small businesses to use the internet to buy and sell. This simple idea proved to be very successful and has brought huge benefits for Alibaba. Its platform is now used by internet users in more than 240 countries and regions, and the company has employees in more than 70 cities in Greater China, India, Japan, Korea, the United Kingdom and the United States.

It is now clear that Ma held on to his core value of focusing on long-term benefits and made his strategic decision based on the idea of helping small businesses access the internet market. The simple story of small gold pieces expresses this value very well. And Ma deliberately held on to this value by firing those employees who did not agree with the values behind the story. These values brought about a successful organizational change in the company's employee base, in the company's strategic decisions and in its main product and source of revenue. Thus, Ma's value-laden story, which is interactive because of the firing of employees who found it to be meaningless, played a crucial role in the organizational change process.

Case 2: Brazil - Ethical Leadership in the Banking Sector

One of the hallmarks of great leaders is that they can inspire those under them to be innovative and passionate, ethical and socially responsible and hard working, or, to cite some contemporary leadership-coaching experts: "a leader who can aspire, perspire and inspire" (Dolan, 2011). These leaders will stimulate the creativity of each employee so that they eventually maximize their potential – something most would find difficult to achieve on their own. In the financial sector, finding such great leaders is even harder. Worldwide corruption in business and politics is rife. The focus on money and its acquisition has long been the norm in this industry, and the term 'cut-throat' is often bandied about to describe fierce or relentless competition at the expense of decency. The financial industry is in need of ethical leaders, and it has found one in Fabio Barbosa who, until recently, held the position of CEO at Brazil's third largest bank.

According to Balch (2010):

> Fabio Barbosa likes to buck the trend. When his fellow bankers were leveraging themselves to the hilt, he was banging on about non-financial risk evaluation. As other banks invited in the latest market gurus to address their boards, he called in NGO leaders, environmentalists and Value-Based scholars to address his senior team; he really wanted to instill other types of values in the bank he was heading. His commitment to long-term, responsible banking is not new. More than a decade ago, he presided over Dutch bank ABN AMRO, which set a course to become "a new bank for a new society". He took that same mission to Banco Real in 1998, following its acquisition of ABN AMRO. As Banco Real's chief executive, he oversaw a number of banking firsts, mostly notably in environmental risk analysis techniques. In October 2007, Banco Real was incorporated into Spanish banking giant Santander. Barbosa remained as head of the new outfit's Brazilian operations. His goal was to see the resulting alliance become the "best bank in Brazil". The idea that profits and sustainability can sit side by side took his new colleagues at Grupo Santander Brasil a while to accommodate. To help matters along, Barbosa held weekly sessions with his senior management team to thrash through the merged entity's mission and values. This was no impersonal conversation. Managers' own ethical viewpoints were sought and Brazil's social reality interrogated.

There are rumors and legendary stories about Fabio Barbosa's leadership style and day-to-day activity. Some of these stories involve denying loans to companies who were destroying Brazilian rainforests or his constant fights initially with superiors at ABN Amero and later also at Banco Santander to retain such socially responsible policies. Barbosa applied the cold hard facts as well. In case after case, he demonstrated how companies with a good social and environmental risk profile performed better over time. Low risk equaled long-term returns. It is a formula his fellow bankers were quick to appreciate. In this typical storytelling, he often cited the timber industry to make his point. "Should Grupo Santander Brasil lend to a company that is cutting down the Amazon?" To turn the question around, he would ask: "Will such a company be doing business five years from now?" The straight answer back was "of course not." Barbosa's storytelling became legendary. His quote, "I don't want sustainability to be a restriction. I

want it to be an inspiration," is cited by all the bank's stakeholders (van de Loo, 2006)
As President of Banco Real earlier in the decade, Barbosa introduced a transformative sustainability initiative that included social and environmental risk analysis, ethical investment funding, microcredit operations, a diversity program, and employee programs to help charitable causes in Brazil. This led the *Financial Times* to name Banco Real the Sustainable Bank of the Year in 2007. Barbosa's initiative became the object of a study at Harvard and earned Banco Real other sustainability awards from the UN, the International Chamber of Commerce and The Prince of Wales International Business Leaders Forum. Barbosa continues to be recognized for his efforts to integrate philanthropic and sustainable practices in business models. In 2010 he was named Leader of Social Change by the Foundation for Social Change in partnership with the UN, and, in July 2011, the UN Foundation announced that it had named him to join its Board of Directors.

When Barbosa's values started to clash with Grupo Santander's values, he decided to step down and leave the bank. Barbosa's motto of Managing by Values (Dolan et al., 2006) clashed head on with Banco Santander's managing by profits. Barbosa was so convinced about applying the philosophy of managing by values in the day-to-day reality of his company, that he accepted to write the preface to the Portuguese language version of Dolan and García's book, "Managing by Values," published in Brazil. Today he heads one of the largest global media companies in Brazil, Grupo Abril, and is responsible for reshaping the organization. His values and vision for responsible leadership have not changed. The recent UN meeting in Rio de Janeiro in 2012 named him one of the "Six Champions of the Earth", and he received an award given to those whose actions and leadership have had a positive impact on the environment.

Case 3: Germany - Transforming Continental A.G.

In the mid 1990s, Continental was a domestic powerhouse in its native Germany, producing high quality tires. However, it was only a fledgling global player. Continental's senior officers knew that for the company to survive, they would have to build new core competences outside the tire manufacturing area and grow significantly beyond its domestic markets. To this end, they would have to diversify their operations and acquire companies outside Germany and its current core business sector. The challenge was to break away from a 125-year-old tradition and culture of manufacturing high quality tires. To overcome resistance to change and get all the company's employees on board (from senior management to other lower-level employees), Hubertus von Grunberg, the company's CEO, had to first persuade all senior management teams that the company could not continue to grow organically and that they needed outside help. This clashed with the company's culture of self-reliance. Instead of an endless stream of lectures on global business strategy, however, he decided to tell them a story about Continental's changing position in an increasingly competitive industry, a position that might become increasingly smaller given the inroads competitors were making into the territory controlled by Continental (Ready, 2002). He added a key element to the story, talking directly about the company's proud heritage. However, he recounted how this same heritage had also prevented him from identifying partners that could strengthen Continental's competitiveness. He said that he had to change, and he challenged the group to do the same. The future leaders reflected on von Grunberg's underlying message: adhering to the behaviors and mindset of the past might be the biggest obstacle to the company's transformation. Von Grunberg believed that his story, which encompassed both strategic interests and the need to adopt a new set of shared values and behaviors, was instrumental in launching Continental's transformation. By

2011, Continental had become a very successful company with over 30,504 million euros in sales, and with 163,788 employees in 46 countries (source: https://www.conti-online.com/generator/www/com/en/continental/csr/themes/economy/corporation/link_corporation_en.html). The company had successfully expanded from being only a tire manufacturer to become a firm producing other products related to the automotive industry (chassis and safety equipment, power trains, interiors and other components). Today it ranks among the top 5 automotive suppliers worldwide.

Conclusion

Storytelling has been an effective means of communicating important substantive and cultural messages for thousands of years. The Bible is one of the best examples of how storytelling has been used to shape behaviors, cultural norms and core values. Great stories create rich visual imagery in our minds, and great storytelling has emerged as a legitimate and frequently used approach by leaders to implement effective changes in many organizations today.

On the practical side, storytelling, strange as it may sound, is hard work and very labor-intensive. Some believe that a number of ingredients must be combined to make storytelling an effective means to lead change in organizations. Ready (2002) defines five key components of effective storytelling, and we wish to conclude this paper by slightly expanding on his points:

- Effective stories are context specific; they need to be related to the organization's current challenges.
- Effective stories are level-appropriate; for stories to be meaningful, tellers need to frame them around experiences they had when they held the same level of responsibility as the hearers.
- Effective stories should be told by role models (see all three cases described above); they need to come from respected and credible leaders. Storytellers need to be highly respected role models and highly accessible coaches (Dolan, 2011).
- Effective stories need to be embedded in drama; compelling stories draw participants in and grab their attention. A drama which instills empathy amongst hearers makes the latter more committed.
- Effective stories need to have high learning values; they have to stimulate learning (or the potential for it) that eventually leads to changes in behavior.

On the more academic and scholarly side, in this paper we propose a framework based on a social constructivist and interactional perspective. We propose that the storytelling process is a value-laden interaction process. We further suggest that value congruence is the goal of storytelling, and, thus, storytelling is perceived to be free of ethical charges. The nature of storytelling is a value interaction process to find a common set of values. Storytelling is widely used in various organizational culture management settings to achieve value congruence and accomplish organizational goals. We claim that, because of the managerial significance and the nature of the teller's level of power, hierarchy and other political influences, the value congruence perspective does indeed provide us a very informative understanding of the nature of storytelling.

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Consulting Organizational Change Cooperation – Challenges, Issues and Solutions in Theory and Practice

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Abstract

The cooperation capacity of public organizations and profit companies is an increasingly valuable resource. Cooperation partners come from profit and non-profit organizations and from organizations in the public domain, and all are subject to a financial and legal context. Coming from such completely different working contexts, logics and cultures, the potential partner organizations provide services parallel to each other (many times in a competitive relationship).

How can those partners jointly "co-produce" benefits through cooperation?

Within such an environment, a shared case for action needs to take place, generating enough "energy" for the key players to embark on such a cooperative adventure. How is it possible to initiate such a process?

At the end of a cooperative change process, it is vital that the cooperation is fully developed and established. How should the cooperation project be designed and implemented so that cooperation can continue?

This article discusses these issues and challenges using a case study. From the consultants' perspective, the article explores the question of how collaborative change processes can be successfully managed and consulted through concrete interventions (e.g. organizational design, process design, settings, etc.). From a scientific perspective, the article tries to show which challenges and issues have to be considered.

In this interaction between practical action and theoretical reflection, the article specifically describes what happened in the change process, but also generalizes aspects that offer theoretical insights into OD change processes in inter- and trans-organizational cooperation.

Keywords

Collaborative change processes, cooperation, consulting, different logics, development and implementation of organizational change

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Introduction: The Challenge of Consulting Cooperation

Increasing technological development, the effects of globalization, and the ensuing social problems: migration, poverty, global economy, environmentalism, climate protection (inter alia), lead to a specialization of society and its organizations. Modern institutions within different societal systems have to cooperate more and more frequently to convey political results and solutions, provide social services, develop and implement innovations, or simply increase efficiency regarding competition and response to customers´ demands. Interdependence increases with regard to content and organization, as does the importance of stable horizontal relationships between organizations. These challenges and standards demand new forms of coordination (Mayntz, 2009a, 2009b; Grande/May, 2009).

The organizational form "cooperation" is a particularly useful way of establishing the coordination of horizontal relationships (e.g. Sydow and Manning, 2006; Huxham and Vangen, 2005; Cropper et al., 2008). It enables people and organizations to accomplish goals, which they would be unlikely to accomplish on their own, by pooling interests, talent and other resources. Organizations are increasingly seeking cooperation with other organizations and players, not only in dealing with pertinent issues and complex societal problems, but in ways that allow them to react to their mutual interdependence. At the same time, the operations of the participating organizations have different systems of competence and organizational structure, with their own internal logic and are connected to different interests and professions with diverse educational and specialist traditions. This diversity can be harmonized through contracts, streamlining the administration and implementing exacting rules about work processes and competences. All of these efforts will help to reduce or minimize problems, but they will not generate any general changes in structure or organizational culture. Attempts to order this diversity in the context of cooperation through hierarchy and sets of rules have been tried time and again, but with only moderate success at best. Cooperation, by contrast, offers an attractive alternative for managing this diversity effectively. There has been strong scientific interest in research collaborations in recent years, albeit with varying results (e.g. Sydow, 1992, 2003; Huxham and Vangen, 1996, 2005; Hibbert, Huxham and Ring, 2008; Cropper et al., 2008; Cummings, 2008; Cummings and Worley, 2008; Motamedi, 2010). However, it can be seen time and again that in the case of actual implementation and operationalization, the necessary practical approaches and sufficient concrete implementation experience is still missing. The findings provide "little in the way of detail regarding how the change process actually works in practice" (Clarke, 2005: 41; see also Motamedi, 2010: 45). Recent discussion among management scholars and practitioners reflect the fact that consulting in networks, in benefit alliances and in cooperation demands different foci and models to those that are effective in single organizational settings (see Sydow and Mannings, 2006; Chisholm, 2008).

Practical implementation, therefore, poses the question: how is it possible to successfully manage cooperation between different organizations with their different structures and logics of action – be it government organizations, non-government organizations, clubs or traditional profit organizations? The creation and maintenance of cooperation is therefore in no way trivial (Willke, 2001; Grossmann, Lobnig and Scala, 2007, 2012; Cropper et al. 2008; Zürn, 2009).

To establish cooperation the participating organizations, with their representatives and potential supplemental organizational consultants, have to overcome several challenges. However, these challenges exceed the normal requirements of establishing and developing internal organizational structures.

Not only is the necessary experience to deal with this complex form of coordination missing, but in addition, collaboration is hampered by the increasingly blurred organizational boundaries. Managing the interfaces between the participating organizations efficiently is a pivotal contribution to the improvement of the quality of services. These cross-border interfaces within the performance processes are among the major challenges in establishing and developing cooperation. It is simultaneously an organizational and consulting challenge.

The focal challenge with regard to organizational development is overcoming differences in organizational and internal structures and cultures. Participating organizations – especially when they differ in terms of socio-political or entrepreneurial background – usually work with totally different traditions, culture and work logic. Despite their different cultures, these organizations are expected to accomplish tasks alongside and directly with each other. The cooperation partners not only operate subject to different legal regulations with different competence structures and organizational set-ups, but are furthermore defined by their own logic of action. To summarize by way of illustration: Private business orientates itself primarily on the basis of the mechanisms of the market. The effective self-logic of private businesses in cooperation is often defined by an attempt by their actors to utilize their cooperative actions to pinpoint problems for which solutions have already identified. It is their objective to secure progress and make decisions quickly. Politics and administration orientate themselves primarily on a hierarchical structure. Its actors are therefore much more hesitant. According to their logic of "open attitudes", politicians are not primarily interested in an efficient cooperation process, but much more in keeping "hot issues" as open as possible. This way they can keep their autonomy and remain able to act and find compromises within their own system of politics and administration. NGOs and public sector organizations have to orientate themselves in terms of both hierarchical structure and the market, as they are "doubly-dependent" – they receive subventions from the state/politics but have to be organized like a private business. They are caught between required efficiency and functionality towards customers and colleagues, and loyalty to the political actors.

These different methods of organizational logic create effective differences, which present a substantial challenge during the development of cooperation. The representatives of the cooperation system as well as the consultants have to face and attentively balance this challenge.

To participate successfully, all participants not only have to establish the cooperative system together, but they also have to work according to internal and external preconditions on a personal and structural level at the same time. This issue is directly connected to several consulting-oriented challenges. Besides providing material on what or how cooperation can be implemented, the main task is the organization of a successful procedure to overcome the aforementioned different internal logics of participating organizations and to secure sustainability – if such is indeed a goal of the participants. The results of developing and implementing cooperation often remain just "on paper"; they are formally installed by a "top-down" decree but they actually show little or no effect in day-to-day business.

To create sustainable and effective cooperation, the development processes have to be organized "top-down" as well as "bottom up". Therefore, all relevant institutions and groups with their different interests, points of view, logic of action and so on, have to be included to successfully install cooperation at inter-company level (Grossmann, Prammer and Neugebauer, 2011a, 2011b).

Methodological Approach

Research into organizational development (OD) focuses on the study of interventions. OD research involves an implementation-oriented approach that concentrates on the development and implementation of the concepts of management, change, modelling and consulting organizations (see among others French and Bell, 1994; Gallos, 2006; Cummings/Worley, 2008; Cummings, 2008). It is not limited to the description and the analysis of organizations as objects of research. It also takes into consideration ‘interventions of managers, experts, employees and even consultants’ (Lobnig, 2009: 20), and the relevant social processes to initiate an intended change in, of, and with organizations.

The conventional methodological approaches; for instance, natural scientific “laboratory conditions” or empirical quantitative surveys, provide neither sufficient observational tools nor role models to research the social processes under examination. OD research uses other forms of generating knowledge and has created its own specific methodological norms of comprehension. Accordingly, a specific methodological approach is used, called the “Practitioner’s Model”.

According to Kurt Lewin, ‘You cannot understand a system until you try to change it’ (cf. Schein, 1996: 34); in other words, it is the concrete practical experiences that are definitive. In addition, H. v. Foerster’s statement that the observer and the observed are inseparably connected, or rather that observation is never independent from the observer must also be considered. All descriptions of intervention and observation have been utilized directly, reflected upon from different points of view, and subsequently, in an adapted form, utilized again.

This approach basically matches the Action Research approach (see among others Argyris et al., 1985; Eden and Huxham, 2002; Huxham et al., 2009) and utilizes Lewin’s Circular Action Research of “analysis, planning, acting (execution), observing (more fact finding), reflecting and acting again” (Dickens and Watkins, 2006: 194).

A major criticism of this approach is that research and intervention cannot be merged: ‘[Action Research is] either producing research with little action or action with little research’ and ‘the principles of action and research are so different as to be mutually exclusive, so that to link them together is to create a fundamental internal conflict’ (Dickens and Watkins, 2006: 190). This criticism indicates significant differences between the conventional Action Research approach and the Practitioner’s Model. The main difference is the intentional consideration of the double role performed by a “Practitioner’s Model consultant” as both consultant and scientist at the same time. As Action Research is viewed more as research in the sense of ethnographic observation, the continuative considerations of the Practitioner’s Model are based on Schein's Clinical Perspective in Fieldwork (Schein, 1987). Schein introduces a tiny but significant difference that can also be found in the Practitioner’s Model. The scientist in his double role – contrary to ethnographic approaches – does not perform any specific form of field research, but intentionally takes on the role of an “assistant low on intentions”, who has been contracted by the “object of research”. This leads to a distinct perspective: ‘The primary source of organizational data is not what is ‘out there’ to be observed, but is in the careful analysis of how members of the organization relate to the outsider’ (Schein, 1987: 30). That means that according to this definition, research is always considered ‘introspective research’ (Lobnig, 2009: 22), which substantially supports scientific abstraction. Schein describes the difference like this: ‘The ethnographer’s model of the organization is quite different in that it is built more on the assumption that the organization exists outside of the ethnographer’s consciousness and is there to be understood and deciphered, not to be perturbed’ (Schein, 1987: 30).

The Practitioner's Model connects the practice-oriented approach of Action Research with the enhanced perspective of the double consultant/scientist role in order to doubly underpin theory formation and hypothesis. As a method of research this conceptualisation makes reference to a trans-disciplinary orientation. The transfer between research and practice is not inherent, since this transfer does not take place automatically, but has to be organized and initiated by specific processes and structures.

Case Study and Consulting Admissions

In 2007, upon the instigation of the provincial government and health insurance companies, an Austrian province took the initiative to subject all health care tasks, including patient care, to planning.

A "health fund" consisting of 15 members with voting power (representatives of the provincial government, the social insurance carriers and the federal government) as well as about the same number of consulting members (representatives of the medical association, hospital consortia, and country and city municipalities) has been constituted as an individual legal entity. The aims and purposes of the fund are the improvement of the quality and efficiency of health services, as well as the execution of complementary projects.

At the same time, a process designed to consider "interface management" has been initiated. Initial survey analysis has shown that an optimization of inter-governmental cooperation to increase efficiency in both the processes and performance of patient-oriented service is necessary. This is especially apparent at the level of the distribution of tasks between the organizations – first and foremost in patient-case coordination.

There was a number of challenges identified during the evaluation process. Firstly, there were considerable weaknesses in admission and discharges management, with the weakest link in managing discharges. There were three aspect in need of improvement in a system focused on standardization: the methods for organizing the medical support staff; information as part of the discharge process (e.g. doctor's notes, letters regarding long-term care); and the discharge process itself.

Secondly, attention had to be focused on how the coordination structure was set up for relevant fields of work and the competence issues between the participating service providing organizations.

Based on these findings, the ensuing consulting contract for the cooperation project, scheduled for 2 years, was as follows:

> *'Merge over 30 governmental, outsourced state-affiliated organizations and public sector health care and social services organizations into a cooperation system. Consult all participating actors (eventually there were 164 people who actively took part in different project committees) during the establishment of a quick, complete, as well as medically and economically worthwhile chain of treatment for all patients and/or persons directly concerned. Additionally, develop a common cooperative structure to guarantee the sustainability of the results of this process of change'.*

Our department[i] has been assigned to support this cooperation development in acknowledgement of our individual and specific approach. Of particular note is the scientifically established validation of the consulting, and our combination of process-oriented consulting competence and professional know-how relevant to the task.

The cooperative oriented preliminary design study made it possible to identify the sectors that required solutions to be developed during the project. The main objective of this coop-

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eration project was the construction and development of a cooperative effort to optimize cooperation between the government-based service provider and non-profit organizations in the healthcare and social services industries. The aims and objectives were as follows:

1. Develop guidelines and tools for the three contextual sectors:
   - admissions management;
   - discharge management;
   - medication and healing aid practices.
2. Design an appropriate cooperative coordination and management structure.

The Set Up

At the highest political management level, a steering committee with about 35 members has been installed, involving top managers from the participating organizations as well as the most important decision-makers of the provincial government. The committee was responsible for all decisions made during the project and ensured the compliance of all relevant organizations. The explicit presence of the top management of each participating institution in the committee meetings ensured that all mutually agreed decisions were transferred to the individual sectors and supported by the employees. In addition, the decision-makers knew that people would refer to their published statements, and the decisions were made with great care. Sometimes it took two or three attempts until a result had been approved. However, it was far better to discuss issues in the "protected environment" of the project than later during the implementation process or daily routines, influenced by self-doubt and the relativizing statements of the management.

Furthermore, a project team was created at provincial level. Its members have created both the framework and milestones for future relevant cooperation structures and guide-

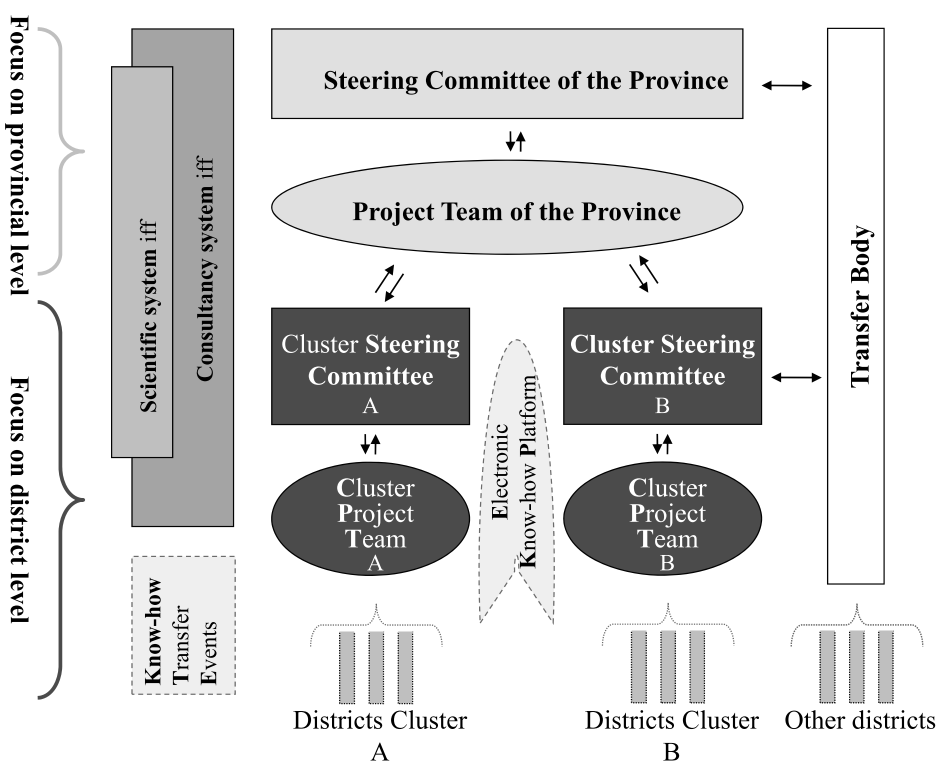

Figure 1: The Project Organization of the Case Study

lines, and consolidated the solutions found in two different Cluster Project Teams at the district level. The team also initiated the choice and implementation of teams at the operational level in the districts. In summary, at the highest control level (i.e. at the provincial level), a dual project system was implemented: (1) a committee at the executive level that guarantees the current results in the context of the pilot project, with ultimate policy making authority; and (2) a project team to organize and process the substantial, operational agendas (see Figure 1). This dual project system was then repeated at the operational level.

The operational design of the cooperation structures and the development of solutions did not occur in all districts, but only in two clusters of districts. The cluster development team in both "model regions" did the main work in accordance with the "bottom up" principle. The teams developed the appropriate tools, instruments and "interface management" ideas and solutions in regard to the relevant services in their region within the framework set by the project team at provincial level. The cluster steering committees made the decisions concerning the work of the operational teams and ensured compliance within the relevant organizations in the model regions.

To connect the remaining districts, a transfer committee with representatives of the future potentially cooperating organizations from these districts has been installed. In this way it was ensured that every institution, every profession, and every district – even in different ways and intensities – was involved directly in the project.

According to the OD Practitioner's Model, different modules (shown in Figure 2) were set up and utilized.

1. Encompassing scientific records of the project were executed throughout the project.
2. A qualitative environment analysis with representatives of the participating organizations has been conducted in a preliminary design study. This was carried out by a preliminary design study core team (9 representatives of the key organizations) and an extended preliminary design study team (about 20 more people from the remaining organizations in the cooperation project). The contextual and organizational framework for the execution of further project work was specified.
3. After carrying out the preliminary design study and the establishment of project structures for further diagnosis, conception, piloting and transfer, solutions were

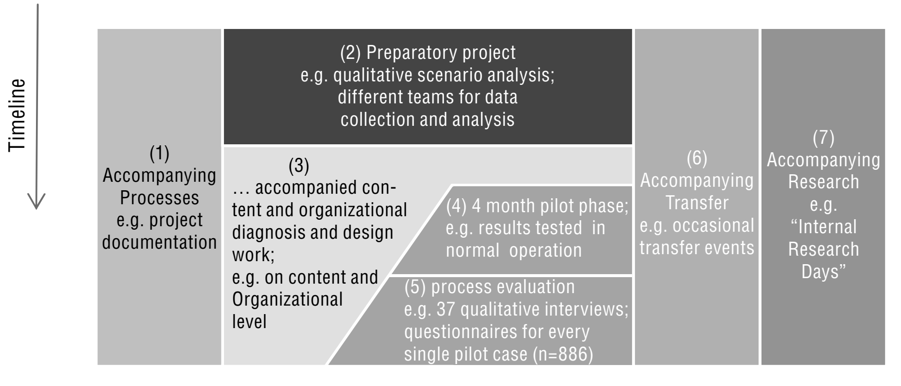

Figure 2: Practice-oriented Display of the Research Approach

developed. This was affected by the interaction of external support and various different teams in different settings.
4. After the conclusion of the first conceptual working phase, a 4-month pilot phase was conducted. The conceptual project results were tested in real life operation in the participating organizations and an evaluation process took place concurrently. The results were processed in a second conceptual phase.
5. About 36 qualitative interviews with actors involved in the piloting were conducted during the evaluation. In addition to these individual interviews, questionnaires were used for every single case (n=886). These questionnaires accompanied the cases (patients) during the whole performance process (treatment chain) in the participating organizations.
6. Special committees were established to provide external expertise to interpret the results at regular intervals. The committees included organizations and their actors who did not participate directly in the project. The actors in the project reported directly to the committees about the project's status quo. In this way they could provide their points of view and expertise in feedback meetings. Valuable findings regarding acceptance and criticism of cooperative procedures could be acquired and an initial transfer to colleagues in the cooperation organizations was initiated.
7. Internal research days, held quarterly, were implemented to support the reflective phases of the research. On these research days discussion was concentrated exclusively upon the accumulated findings and observations. Long-term external cooperation partners not included in the project were invited to these meetings in order to gain objective results, to uncover "blind spots", to reflect on the work and question all assumptions.

Constitution Stage and Considerations To Guide the Cooperation Project: OD Approaches to Develop a Common Understanding of Cooperation

Normally, projects for corporate cooperation – especially plans for reform in the public sector – are virtually designed on the drawing board by experts after mutual agreement by representatives of powerful cooperation organizations. The resulting conclusions are verified – usually via a theoretical "dry run" – for their factual correctness, usefulness, and acceptance by both the representatives of the relevant authorities and some of the future cooperation's more important institutions. Next, they are adapted to ensure political feasibility. Finally, the results are approved by the legislative body and/or the responsible authorities.

This kind of procedure offers the actors predictability and the security of long-lasting routines. Contractors, protagonists and actors know beforehand which results are expected and/or should be produced at the end of the project. If external consultants are involved, they ensure compliance with the practice of the procedure. The consultants create the diagnosis and project conception, in correspondence with the experts and responsible actors; they also often develop the solutions themselves and plan the implementation.

Such a top-down approach is hardly useful if the aim is to ensure real, sustainable, effective cooperation.

A useful first step is a preliminary design study co-drafted by all the cooperating institutions, which focuses on framing the project and its content and organization (including the commission of external consultants).

Nevertheless, some additional conceptual considerations should already be addressed and applied at this preliminary stage, which can support the development process.

Limiting Complexity by Implementing a Preliminary Design Study

In a preliminary design study the cooperating institutions and their representatives can experience a cooperation situation beforehand and "run a test". The participants should be able to try out cooperative acting and enter a process of trust and commitment to their partners. Also, the actors can observe scientists and consultants at work and verify their impartiality.

The results of a preliminary design study are that:

- each actor knows exactly which roles he/she has to perform contrary to the usual project procedures and day-to-day routines;
- a project framework has been jointly designed.

By the end of the preliminary design study the participants had developed the necessary commitment to cooperation and they were capable of identifying themselves with the cooperation project. The goals regarding the content could be set, two model regions could be selected for testing and people could be appointed to project committees in accordance with mutually agreed criteria. Contrary to the actors participating in the preliminary design study, the commitment of the non-involved employees of the institutions was relatively low. As a result of past experiences, they held to the assumption that the final result of this cooperation would be words and no action.

To keep the chance of success high, experience has shown that a carefully designed process taken step-by-step by all participants together is necessary. This generates a common understanding of "where the project is at" and a sustainable commitment to the agreed solutions by all direct and indirect actors of the cooperation system and their relevant institutions.

Criteria-Based Recruiting

In criteria-based recruiting, people are not just appointed "on call" by key players. Prior to the appointment process, the participants involved identify "recruiting and representation criteria" with the consultants.

The appointment criteria are defined in the sense of a "positive force of negative thinking"[2]. This means that recruiting is planned in such a way that the members of the committee and the results most likely to emerge will not be accepted by the people who "stayed at home". Conversely, functional criteria regarding the selection process could be designed. During the design of the criteria, the question that must be asked is: Which aspects should be covered by the members of the committee? These must be such that the committee is able to work efficiently and professionally, and that acceptance of the committee's actions and decisions will be guaranteed.

Such criteria-supported recruiting is complex but offers many advantages. Since one person can cover several areas, the chances increase that the maximum number of aspects are covered by a minimum of personnel. Resources are saved and working capability is increased. The consideration of important aspects improves the quality of output and the acceptance of the people concerned. Since the middle management of larger organizations plays an active part when selecting the delegates and performing the briefings, it ensures an tight connection between the middle management and the cooperation early on. Criteria-supported recruiting relieves the people selected from conflicts of loyalty in the cooperation project. They are not people "connected to someone" with suspected "secret agendas" but are appropriate representatives of jointly developed and transparent recruiting and representation criteria. Their job is viewed as an assignment

[ii] According to Paul Watzlawick's 'The Situation is Hopeless, but Not Serious' (Watzlawick, 1983a) the expression 'The positive force of negative thinking' is the reversion of the book title 'Vom Schlechten des Guten' (Watzlawick, 1983b)

instead of an act of self-fulfilment influenced by individual interests. If their contribution to the construction of the cooperation project and the development of solutions is attacked by colleagues from their home organization – since there is a shift of interfaces or the colleagues face a higher burden of work – they can point out their assignment and that they have been selected as the person best qualified for the job.

For all these aspects to take effect and to enable those concerned to refer to them, the criteria of representation and appointment have to be communicated, as has the whole recruiting procedure. Selection criteria also have to be made transparent.

Differentiation of Roles within Committees without Hierarchy

The roles of members of a committee should be defined without any different in levels of hierarchy. The likelihood of the development of a hierarchic culture and different levels of responsibility for members of the project team can be decreased considerably.

The non-existence of a hierarchy in cooperation is, of course, a problem in hierarchically organized businesses. Even without any formal definition of hierarchic roles in a committee, there is a tendency to build cooperation patterns within the team that mirror the patterns of conventional organizations. Without any specific cooperation rules and role profiles, the conventional patterns and roles will "automatically" be established.

In an attempt to both counter and ensure acceptance for this phenomena, projects should be based on hierarchy and non-hierarchy at the same time. The idea is to restrict hierarchy to decision making bodies on the one hand and to free the diagnostic/conceptual team from any hierarchy on the other hand. This helps to avoid "armchair experts" among the players and force every member to "drive" the project. The best way to do this is to deliberately forego a project team manager and establish a project team, which has a rotating coordinator instead.

Set of Rules

To make sure concepts such as 'there being no hierarchical differentiation of roles' more than mere ideas, they have to be laid down in a set of rules. These rules have to be approved explicitly by the project committees and the organizations involved. Rules that have been accepted by all actors are decisive for ensuring a secure work environment. They help to ensure the continuity and reliability of each personal contribution, increasing productivity and trust in the cooperation project and its actors. Sensible rules for cooperation projects could be:

- compulsory attendance at meetings;
- individual responsibility when accomplishing tasks, no proxy solutions;
- a principle of consensus, especially when setting the project framework;
- cooperative design of information and external policy.

Experience has shown that cooperative work is easier when the rules are applied more expressly, consistently and rigorously, and the more any breach of the mutually agreed rules is articulated, the more adhering to the rules is publicly demanded. Openness in dealing with rule violation or resistance might not normally be applied in the day-to-day business of the participating institutions, but it is a condition of successfully sustaining cooperation. Such "re-socializing" of action within the ambit of goals and procedures that accord with an agreed set of rules, as well as an active culture of conflict resolution and feedback is an ongoing task in cooperation systems. The rules create security for the participants and potentially increase the necessary trust.

Dealing with Asymmetries of Power

It is a major challenge to get all actors on board when consulting a cooperation project. There are some dimensions that have to be taken into consideration in this phase.

Firstly, there is a difference between the powerful organizations or rather the "big players" and the remaining "smaller" participating organizations. Powerful cooperative actors are all those organizations that have a major influence due to their size and financial, political or legal options. These powerful organizations in the cooperation project are normally faced by a higher number of small organizations, which often depend financially and/or formally on the large players, only having a small number of employees, and often without levels of hierarchy and symbols of status. The big players act "loud", have strong hierarchical structures, considerable specialist management resources and the executives are equipped with many symbols of power. Small organizations are used to acting "quietly", they do not have many employees and the executives often also work in operational roles. However, they render essential services to the client and often have the relevant know-how.

Secondly, there is a difference between the management level and the operative level. The management level is a mirror image of the above-mentioned situation. Big players are in regard of the organizational structure – with a board of directors, executive board, staff units and so on – often highly diversified, while the smaller organizations have hardly any organizational units or levels of hierarchy for sole management purposes at all. Representatives of "smaller" organizations are "weak" in this area. At the operative level, the situation is often quite reversed. This is the strength of smaller organizations in the cooperation project. They can provide competences and expertise at the operative level and stand eye-to-eye with the big players. They often generate the essential services for customers – at least from the customers' point of view.

The third dynamic coming into play is in the success-critical challenge of maintaining the connection between the few decision-makers high up on the rungs of the hierarchy and those who have the know-how and work on the ground. What good are solutions developed in a cooperation project if those who "were not taken along" do not want them, or are only forced to live with them?

A vital factor influencing success in this area is that the consultants pick up these dimensions correctly and guarantee that all participating institutions can meet each other eye-to-eye. The big players must acknowledge the operative competence of small organizations and contain themselves politically. The small organizations have to trust themselves to become more courageous during the development process – contrary to their usual culture of behaviour. Both have to support the process with their expert knowledge, their potential and their needs to ensure successful cooperation development.

Pointing Out Conflicts of Loyalty

The actors involved in cooperation always face the dilemma of "double loyalty". On the one hand, representatives have to be loyal to the colleagues involved in the cooperation. On the other hand, loyalty towards the home organization and its members is called for. Every "either/or" situation inevitably leads to failure. Conversely, the interests of the cooperation project and the organizations involved cannot be balanced by one representative alone. There is a need for empathy, and everyone must know that a pragmatic approach is important and the home organizations must allow enough leeway for it to work.

It is vital for sustainability that the actors manage to maintain their loyalty to both and balance their loyalty between the different expectations. In the long run, this cannot be achieved by the operative actors alone. The colleagues and managers of their home organization, who are not directly involved in the cooperation, have to provide support and are therefore able to influence the cooperation indirectly. It takes intervention by the management of an organization to ensure that they "put up with the trouble". If the management involved in the project – as members of an explicit decision-making committee – put up with this balancing act themselves, they lead by example and increase the chance that all the other members of an organization openly deal with the changes necessary for the cooperation. The behaviour of the management, their perceptible "pro" attitude towards the cooperation and its solutions, is a vital element in successful and sustainable cooperation, ranking next to contextual ideas about what is useful and what is not (Prammer, 2010).

"All-party Approach" by Consultants

An "all-party approach" can be helpful during the initiation of cooperation and at sensitive points during the development. The impartiality of the external consultant should not be understood as emotional indifference or a lack of interest, but disinterest in the sense of a lack of bias or 'Multidirectional Partiality' as introduced by Ivan Boszormenyi-Nagy (Boszormenyi-Nagy, 1987: 99). An "all-party approach" gives the weaker party a voice and allows the expression of taboos.

This is the only efficient way to help consultants identify relevant differences and mutual interests, structure a working schedule, generate thematic fields, find solutions, develop rules for cooperation, solve conflicts, moderate sensitive decision-making processes and so on. Experts and consultants have to be committed primarily to the task – the cooperation – to gain acceptance and be capable of acting. As already mentioned, the preliminary design study was established to ensure the impartiality of external consultants from the beginning, and to provide optimal support and relief to all organizations in the cooperation project. During this preliminary design study the representatives of the potential institutions in the cooperation project could meet and establish relationships before "hot" issues had to be resolved. At the same time the actors could observe the work of the consultants and verify their impartiality. This was especially important because the pre-negotiations had been conducted by the two financial backers of the health fund alone.

Organizing Cooperation: Working within Trans-Organizational Settings

In addition to working on organizational differences, one of the biggest challenges during the development of cooperation is to demonstrate to the actors how different cooperation is from their past project experiences and previous interactions with other organizations. The consultants' job is to teach the cooperative approach, and to provide experiences to the actors which show them that although cooperation comes at a cost it offers immeasurable benefits. Examples of these benefits include:

- agreed decisions are less likely to be openly or secretly boycotted;
- project results will not get lost in anyone's desk;
- sensible ideas for implementing change have an actual chance of realization.

The considerations outlined below increase the chances that such insights and changes will be affected.

Build-up of Working Capacity

When establishing a sustainable corporate cooperation project, it is vital to proceed sensitively. The relevant organizations and their members have to be led to cooperation step-by-step via a continuous process of harmonization and learning. Matters of importance must be repeatedly considered, actions tested cooperatively and a process of continuous reflection embarked upon. Only by creating an understanding of functionality, a changed mode of control and reduced calculation of individual interests within the cooperation project (see also Willke, 2001), will organizations be able to participate and sustain cooperation successfully.

The provision of such a process adapted to suit this specific context, as well as the supervision of the actors and/or their organizations during the said process is a complex consulting service. It has to be provided continuously and is often an underestimated aspect of consulting. Cultural change, the alignment of interests, the processing of different requirements at interfaces, the processing of loyalty issues, the effectiveness of different power levels, the relative power of the influence of the actors' home organizations and so on, cannot take place without meeting some resistance. The overt or hidden countermeasures of the actors are also a part of this resistance.

Reviews for Learning and Re-adjusting

The creation of working capability for a new team and a new task never happens automatically. It takes a generous amount of time, a certain amount of observation, and joint reflection about the functional and dysfunctional nature of the observed action.

Sequences of reviews should be planned and agreed upon beforehand by the actors; otherwise, the opportunities for investing time and energy in reflection within the committees decreases considerably. Not everyone is used to spontaneous invitations to meetings concerning reflections on the quality of cooperation, or even attending such a meeting, especially if another person has just violated one of the rules. In reality, the production of output is usually more important on a content level than reflection on a personal and/or processual level. There is a tendency towards procrastination when it comes to reflection. To counter this tendency or the lack of dynamics, the implementation of "review rituals" has proven valuable. Review meetings or small review modules enable a thorough review of up-to-date project work and any adaptations of the project that may be necessary to ensure success.

Pivotal points that can contribute to the task are:

- verification of past work;
- identification of problems and dangers;
- displays of motivation from the cooperation actors;
- adjustment of further work;
- correction or supplementation of the sets of rules, role profiles, etc.;
- individual and common learning from experience;
- development of common objectives and keeping cooperation relationships intact.

Circular Planning of Goals and Framework

A circular planning process allows the representatives of all participating organizations to generate a common reality for the task that enables joint action for the establishment of the cooperation project. The mutual exchange of ideas and examination of criticisms strengthens the whole venture (Prammer, 2009: 215 ff.). This is achieved by jointly processing the contents of the task under the supervision of the consultants as follows:

1) Case for Action
2) Objectives
3) Subject matter
4) Success factors
5) Organizational structure
6) Rules of the game
7) Resources
8) Milestones/key dates
9) Next steps to be taken
10) Commitment

This process should be coordinated between the individual participating organizations as well as the members of the central project committees. Circular planning issues include:

- the mutual reference of each individual point to a list describing the "circular planning of goals and frameworks" (i.e. every point affects other circular points as part of a reciprocal system);
- an active process between all organizations and acting persons – what one person/group wants to change, affects the work/responsibility/etc. of other participating persons/groups (only by completing the circle can the final framework be set);
- the fact that this process of comparison has to be organized again and again to ensure that all adaptations can be executed in a coordinated way by all committed actors/groups (the whole venture is developed step-by-step in a circular manner).

Each actor is able to contribute their specific know-how and is aware of the complexity of the whole. The additional necessary input of time and resources is set off by the chance to achieve:
- better transparency;
- harmonized procedures;
- better identification with the procedure and tasks;
- stronger individual responsibility for the task and the developed solutions.

Cooperative Decision-making

Another important aspect of the development of cooperation is decision-making. Cooperation becomes effective only as a result of jointly and cooperatively made decisions. Decisions represent the direct expression of joint effort, emphasize the success of working processes, form a cooperation identity in regard to content and strategy, improve the generation of trust and strengthen organizational relationships. At the same time, decisions also demand commitment from the participants for or against the cooperation project. Concrete decisions eliminate the possibility of manoeuvrings either politically or with regard to any undecided matters. The process of decision-making is in no way an easy one. Decisions that result from a common effort and are not uneasy compromises contribute vitally to the improvement of cooperation and can be felt and experienced by all partners. In this way, decisions become a central driver of successful and prosperous cooperation.

Experience has shown that during the development of cooperation – especially when setting the framework – a decision based on the majority alone is not sufficient. Even if it takes longer to achieve, "consensus" is the order of the day. It helps avoid premature closure of solution-finding processes.

The "foundation" of cooperation should always be supported by all partners. During the development process it is possible to switch to "qualified majorities" as soon as "less powerful" organizations have realized that failure to assert suggestions is balanced equally among all actors. A "qualified majority" could mean, for example, that ¾ of all members of a committee and at least one member of each functional group involved have to vote for a proposed solution.

Clear Separation between Design and Decision-Making

To guarantee the most efficient method of solution-finding, it is necessary to execute diagnosis/design and decision-making/safeguarding in two separate committees (shown in Figure 3). The committees have to be staffed with different teams of people. Diagnosis and design is assigned to representatives of operative actors because they have the know-how and they are the people who have to cooperate when utilizing the found solutions. Decision-making and safeguarding is assigned to representatives of the management systems, since they have the necessary power.

Establishing an explicit decision-making/safeguarding body and delegating people from top hierarchical levels to this body ensure that:

- the hierarchy will be forced to commit itself to the cooperation at an early stage;
- the safeguarding of the cooperation project as well as its solutions are guaranteed;
- the members of the project team can invoke the hierarchy, if the organization's resources have to be accessed or if there is resistance.

In addition, the explicit creation of a parallel diagnostic/conceptual team staffed with knowledgeable representatives of the operational units ensures that:

- the content of the work carried out is largely free from corporate policy and firmly rooted in reality.

In this way the developed solutions are represented by a greater number of actively contributing individuals within their own organization. Furthermore, a better economy of resources, especially time, is mobilized. This increases the chances that all delegates of a project, especially those at management level, are present at meetings.

Priority of Disturbances

Ruth Cohn's motto[3] 'disturbances have higher priority' (Cohn, 1991: 121) gains special significance when developing cooperation.
A central factor of success in cooperation is joint consideration of issues, analysis and decision-making. If a "disturbance" occurs in a participating organization and/or an actor – an event or factual matter that distracts attention from the important cooperation issue currently under discussion – they will not be able to contribute. The risk increases that agreed solutions will not fit perfectly or that they will not be so well supported by those "disturbed". This mechanism is all the more true if the disturbance or irritation originates from the situation of cooperation itself or negative assumptions about the cooperation partners (organizations). As long as the disturbance exists, a loss of attention and energy is the consequence, both for those who are directly affected and for those who react sensitively to the problems of others.

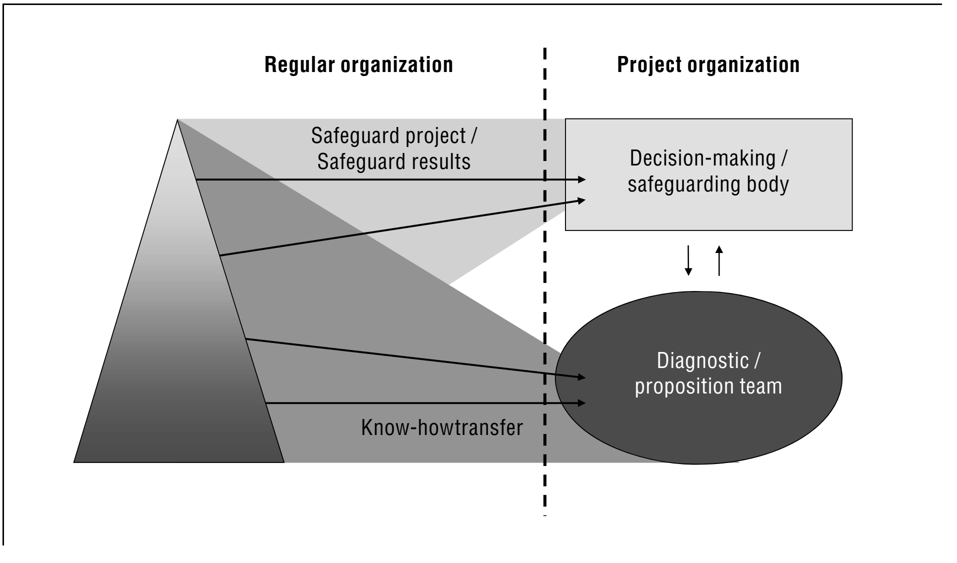

Figure 3: The Separation of Design and Decision-Making

Implementation of Server Functions

When providing services in the public sector and in participating organizations, staff size is usually small. Labour force is a scarce commodity in project work. The allocation of personnel directly affects the working process. It makes sense to support the project with external help in the form of a server and service function whenever such external support will not reduce the identification with the task and its solutions. However, such server functions pose a threat in the sense that responsibility for success is increasingly transferred from the cooperating organizations to the external consultants.

The job description for the committees and the precise scope of the supervising consultants/ experts must be clearly defined. Solutions must be found by representatives of the cooperation system alone. External support can provide facilitation, suggestions for problem resolution and help with the documentation. An explicit statement defining the parameters of external input/support with regard to process supervision, the provision of expertise, scientific documentation and coordination of the project, will clarify the actors' own roles and the performances that can (or cannot) be expected from the other actors.

The implementation of an electronic information platform is useful too. It gives the actors in the project committees direct access to all the material that has been processed during the project work.

Teamwork

It has been shown that thinking about creating a position and instantly appointing someone to perform specific tasks is not necessarily the best option. It is better to specify the function first. The cooperation development team should first ask: What tasks need to be performed and in which way should (or shouldn't) these tasks be accomplished? What has to be considered in respect of the specific function and what behaviour would be more/less productive?

The next thought should concern the person with the appropriate profile and how they could perform best in that position. After that, appropriate persons can be taken into consideration. Sometimes you have to "return to Go", because there is no adequate candidate available. In any case, the actors will have gained a general idea what the function requires.

In the case study, the following question arose: Should a coordinating and troubleshooting position in one of the working areas, in which several groups of professions work together, be assigned to only one person or to a mini-team? This mini-team would cover all relevant professional expertise and other matters pertinent to the accomplishment of the task and also the acceptability of the responsibilities of the position itself.

So far the terms "together/common/joint" or "actors of all participating organizations" have appeared often in the text; this can be summarized under the term "common reality". The teams and group principles form one of the central guiding principles of cooperation – especially during the development phase. A team is not only better for considering the interests of all participating organizations on the same level, but it can also be said that successful teamwork provides lots of energy for "pro-cooperation" and is a pre-requisite for the quality and acceptability of agreed solutions and provided services. This is valid for the development and the day-to-day business of cooperation, as well as necessary improvements later on.

Teams can be utilized on completely different levels:

- the level of directly-provided services;
- the level of coordination between the single participating organizations;
- the level of decision-making;

[iii] Developed by Ruth Cohn in her 'Themenzentrierten Interaktion' (Cohn, R. 1991: 121)

- and the performance of special functions, for instance the preparation of social settings and presentations, or special tasks.

External help is invaluable for the establishment of such teams, for the development of an appropriate working culture as well as suitable rules and roles, including roles concerning content and behaviour – especially during the initial phase of cooperation development. Consultants can point out important factors for success and help to process and secure them. They can offer task profiles, rules and instruments, or facilitate development and feedback processes. Actors left alone with these problems often feel overextended and tend either to remain in their old patterns of interaction or quickly fall back on them.

"Temporary Isolation" by "Protected Areas"

"Temporary Isolation" means that in certain project phases and/or during certain working stages no information concerning the content of the project or about the quality of the cooperation is communicated externally.

A "protected area" is social "temporary isolation" which helps members of a team to work creatively "without penalties". They can:
- voice what is not desirable under normal conditions;
- develop alternative and innovative solutions without having to fear reprimand from other committees or their own organization.

It is similar to rehearsing a theatrical play. Actors will be more willing to experiment if they are able to assume their new role without an audience than rehearsing live or in front of the press. A "protected area" enables open discussion and the voicing of apprehensions concerning their own institution's solutions and ideas. The team members are able to express ideas disadvantageous to their own organization. At the same time, a "test run" takes place in a temporary "protected area". The participants can observe whether discussed topics, which have been declared sensitive, stay within the team, or whether they are used as weapons by representatives of other organizations. Step-by-step trust can be generated, as well as ensuring that participants realize the real value of loyalty to the cooperation as opposed to loyalty to their own organization.

Such temporary isolation from access to the home organization is an unusual intervention for most institutions. It necessitates dealing openly with rule violations, disagreements and conflicts. This is rarely practiced in hierarchic day-to-day business. However, for cooperation development it is a highly relevant condition of success. A procedure of this type cannot be conducted by members of a cooperation team alone, but requires realization by representatives of the management of the participating organizations. Representatives of the management have to learn to understand why such procedures are necessary. They have to ensure compliance with regulations in their own organizations and "support" them. This can be seen as a "pro-cooperation" outing within their own organization to improve the total cooperative process.

Methods of Operation

To execute solution-finding work with regard to content and structures efficiently, and in accordance with the cooperative requirements outlined above, suitable forms of intervention are necessary. These include inter alia the consultants' productive understanding – what they take responsibility for and what not – and appropriate behaviour, for example, the above-mentioned impartiality. But it also requires tools that have been proven to be beneficial to efficient cooperative action. The three following sections set out and explain concrete tools of application.

The Business Process Approach

The Business Process Approach (Grossmann and Prammer, 1998; Prammer, 2009) has proven value for developing and running cooperation according to experience gathered in the last few years. Thinking across divisional lines, professional categories and organizations towards the customer relativizes the functional thinking of project players and their loyalty to the respective delegating organization.

The goal of the business process approach is therefore the generation of a change of perspective. With the process, an attempt is made to generate a cooperative understanding and to focus on the interfaces between the actors. Specific everyday problems and procedures can be assessed and improved cooperatively.
During consulting, the utilization of the business process approach takes place in three steps:

An "organizationally neutral ideal process" is explicitly not meant to denote the processual mapping of real process practice and the fulfilment of tasks. An ideal process roadmap that is organizationally neutral tries to capture all value-added performance and outputs for the benefit of the customer, both those carried out today and possibly tomorrow; ideally it is a "Greenfield development". The purpose is to leave the narrow boundaries of the here and now by jointly working on a broader ideal case, and subsequently to come up with a diagnosis of the status quo and work on a proposition on the basis of a more comprehensive ideal view. "Hardened" socialized points of view and existing logic will be weakened and softened. Alongside loyalty to the "home system" and colleagues, a loyalty towards the process of the new coordination system and its participants – including customers and their needs – is developed.

As a second step, the participating actors confront the new reference system with the existing working processes of everyday business. They identify the focal problems and weaknesses as well as the strengths and advantages of existing working routines. Based on this analysis new functional solutions are developed.

In the third step, the solutions are substantiated, evaluated and the selected solutions are finished. The initial schemata is complemented with solutions, tools, regulations, rules of behaviour and so on, and mutates into a cooperative process blueprint for the future everyday business of all cooperative actors.

Alternative Unfinished Solutions

Contrary to expert procedures that are often practiced, it has been shown to be more beneficial for consultants not to provide complete solutions on a contextual or organizational level. Instead, the exchange between actors is stimulated by always offering at least three different potential solutions, intentionally left unfinished and sketched only elementarily. They provide suitable answers to the problems or challenges but are not feasible without contributions from members of the project team. By contemplating and finishing these sketched "solution offers", the external suggestions turn into the optional solutions for the participating actors themselves. By common design, operationalization and reaching conclusions, new alternatives are found, to which each actor can contribute their own particular view/expertise.
The results of such behaviour are:
- trust in the benevolence of cooperation partners;
- the generation of a common reality regarding the customers' and cooperation partners' needs;
- a high commitment to the agreed solutions.

The trade-off is a higher expenditure of time, the necessary appointment of consultants and the acceptance of this appointment by the internal actors. This requires extensive reciprocal understanding of the concept and its benefits, since additional and external knowledge is not explicitly provided.

Practical Testing and Evaluation

Cooperation is filled with "life" – particularly by the experiences of the participating actors acting within the new system. Practical testing of the contextual and structural solutions is a vital factor of success for sustainable cooperation.

Piloting offers the project members and the cooperation partners the possibility to try out and document the results. Piloting and the ensuing evaluation create a supportive data-base for learning that enables the project actors to give feedback on the agreed solutions. Cooperation partners can refer to positive and practical experiences during implementation – especially when encountering resistance and statements along the lines of, "it will never ever work like that". The actors can fall back on examples demonstrating that all innovations have been tested during piloting and have already proven their value. This is how the first steps in the direction of cooperative and sustainable anchoring of development activities are taken.

Conclusion

The development of trans-institutional cooperation is a releasing of potential, making innovations more likely, creating conditions for necessary co-production and satisfying customer's as yet unmet demands among many other benefits. This potential is threatened by the very real and ever present possibility of failure. Cooperation is both productive and challenging. A sustainable design is in no way a trivial matter, but involves challenges and contradictions that must be dealt with by appropriate methods and interventions for successful cooperation to be achieved. Few organizations have real experience in dealing with other professional and organizational entities. The people involved are especially challenged in dealing with the different traditions, working practices, cultural peculiarities and certain restrictive practices of potential partners. Cooperation does not function by itself or because of external necessity.

On the contrary, experience has shown that cooperation generally can only be achieved by a cooperative process between all partners. The organizations involved and the people responsible have to go through an arduous process to create this rather improbable form of organization. Especially where the goal of the consultant's supportive work is the securing of sustainability, the issue of the cooperation partners' different organizational and action logic has to be continually dealt with. Cooperation requires a high amount of self-discipline on behalf of all partners as well as the external consultants. Cooperation is created as an individual social system of and between the participating organizations. Cooperation requires its own identity, a matching form of organization, its own decision-making and work processes, and a jointly agreed set of policies (e.g. aims, objectives, etc.). Relevant key factors that can support these requirements are:

- the development of good personal relationships between the participating partners;
- well-structured performance processes within the partner organizations;
- interlocking teams working within clearly defined areas with precise assignments;
- teams with a structure supported by good work interaction and decision-making at both centralized and decentralized levels;
- support by consultants as external, objective third parties, especially early on in the process.

Personal relationships are a necessity for long-lasting cooperation and establishing trust. Trust presumes that the actors reveal their motivations and intentions and establish an understanding of the others' points of view. Good relationships are needed to ensure trust and, in turn, trust further strengthens the relationships. In essence, successful cooperation fortifies both the relationships and the cooperation itself. However, although personal relationships are necessary they are not sufficient to maintain cooperation over time. Structural anchoring is also necessary. From a structural perspective, for example, on-going inter-organizational cooperation is typically dependent on different teams set up by the partners of the cooperation, the dispatch and commission of professional colleagues with clearly defined areas of action and a common set of rules for the cooperation.

Cooperation development is a process, full of preconditions, which pose enormous conceptual and empathic challenges for external consultants as well as for all participating cooperation partners.

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Leadership Style and Employee Involvement during Organizational Change

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The aim of the research was to find out how the elements of organizational change depend on the cultural background of the organization's members. This paper focuses on employee involvement and leadership style during planned organizational change management projects in Indian, Chinese and Estonian organizations. The authors analysed 177 interviews about organizational change management containing both quantitative and qualitative data in Indian, Chinese and Estonian organizations. This study primarily uses quantitative methods, and shows that both leadership style and the level of employee involvement are different in these countries. Although the leadership style of the change leader is autocratic in China and India, and participative in Estonia, employee involvement in decision-making in regard to the content and implementation of the change is more frequent in China. Differences in leadership style did not significantly influence employee involvement. Even when the leadership style was participative, lower level employees were only involved in decision-making in very few cases. While the level of employee involvement is positively correlated with the success of change in India and Estonia, the study did not show the same correlation in China. The article provides guidelines for managers of multinational companies and management consultants working with organizations in India, China and Estonia. It also proposes further research. Studies of the effect of culture on change management are increasingly important due to rapid globalization.

Keywords: change management, employee involvement, leadership style

Introduction

The three countries – India, China and Estonia – have all experienced the considerable changes in the business environment at the beginning of 1990s. Although two of the countries are in Asia, albeit in very different areas, and one in northern Europe, the collapse of the Soviet Union had a substantial influence on all three countries. The influence was strongest in Estonia which was part of the Soviet Union, and perhaps weakest in China, which still has many elements in common with the Soviet era. All of them have welcomed a market economy for the first time in many years. These radical changes in the institutional environment have urged most organizations to adapt to new challenges. The institutional environment can be defined by its culture and structure (Meyer et al., 1994). As the structural institutions in India, China and Estonia differ less than the

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cultural institutions, the authors focus primarily on the influence of the cultural context for organizational change management projects in this article.

Researchers from Estonian Business School carried out a relatively large survey in India, China and Estonia between 2004 and 2011. The research task was to find out how elements of organizational change depend on the cultural background of organizational members. The data from Chinese and Estonian samples have been used in articles before (Alas and Sun, 2009; Andreeva et al., 2008), but this is the first time India has been added to the comparison, and the data has been analysed using qualitative methods.

This article concentrates on employee involvement and on leadership style during planned organizational change projects. The research question was stated as follows: Is the leadership style of the change leader and the level of employee involvement different in the cultures of India, China and Estonia? If yes, then how do these differences influence the success of the change projects?

We start with an overview of theoretical statements about change management relevant to the scope of the current article followed by an overview of recent changes in the business environment in India, China and Estonia. Then we present our research strategy, including characteristics of the sample. Following that we present our research findings and conclude the paper with discussions and suggestions for further research.

Theoretical Background

Institutional Context of Change

According to the institutionalist perspective, organizations are socially embedded in a particular society (Geppert, 2003). Institutional theory defines the institutional environment on the basis of its culture and structure (Meyer et al., 1994). Schneider has declared that the attributes of an institution depend on the attributes of its members, including their values (Schneider, 1987). As these values differ in different cultures, then the attributes of institutions must also differ across different cultures. At the same time, new institutional theorists, DiMaggio and Powell, argue that organizations tend to accept similar ways of doing business because they want to appear legitimate to investors, customers, and others who influence their success. They believe that organizations are open systems and become harmonized with their environments through several exchanges, and that over time these institutional influences create a significant degree of similarities in structures and cultures across organizations in different countries (DiMaggio and Powell, 1983).

This article focuses primarily on the influence of the cultural environment of organizational change projects. There are more than 150 definitions of culture (Howard and Howars, 1998). Jaques has defined culture as the customary and traditional way of thinking and of doing things, which is shared by most of its members (Jaques, 1989). Hofstede saw culture as the collective programming of the mind which distinguishes the members of one group of people from another (Hofstede, 1991). House et al. defined culture as the shared motives, values, beliefs, identities and interpretations of significant events (House et al., 2004). All these definitions imply that the management practices in different cultures must be different.

National cultures are most prominently studied by groups of researchers led by Geert Hofstede and by Robert House. The authors use the study by Hofstede to compare the cultural differences of India, China and Estonia because the indices of different cultural dimensions for all these countries are found in the second edition of the book “Culture’s Consequences. Comparing Values, Behaviours, Institutions and Organizations Across Nations,” (p. 502) (Hofstede, 2001). Lead-

Table 1: Scales and Index Scores on a Survey of Social Attitudes

Index	Meaning	India	China	Estonia
Power Distance (PDI)	The extent to which the less powerful members of institutions accept and expect that power is distributed unequally.	77	80	40
Masculinity (MAS)	The degree to which a culture programs its members to accept gender inequality.	56	66	30

ership style and employee involvement are mainly influenced by two indices: the power distance index (PDI) and masculinity index (MAS). The data is given in Table 1.

Hofstede looks at the power distance that is accepted by both managers and subordinates and is supported by their social environment and is determined by their national culture. In the cultures with high PDI, hierarchies reflect existential inequality and employees expect to be told what to do (Hofstede, 2001). Both China and India have high PDI. The major source of high PDI in India is believed to be the existence of the caste system (Chhokar et al., 2008) and in China, the Confucian traits (Noronha, 2002). In India, it is common that subordinates show reverence and respect toward superiors and in return, they expect protection and support (Sinha and Kanungo, 1997; Cappelli et al., 2010). Both in India and China, the manager is seen as a parent of a big family who should take care of everything (Sun, 2009; Cappelli et al., 2010). Estonian PDI is considerably lower than Indian and Chinese. That means we can expect less employee involvement and an autocratic leadership style during change projects in India and China, while in Estonian organizations employee involvement should be more frequent and the leadership style rather participative.

According to the masculinity index, India and China are both much more masculine societies than Estonia. That means that Indian and Chinese employees see managers as cultural heroes, expect them to be decisive and firm while Estonians stress equality and believe that managers are employees like others (Hofstede, 2001). These indices also imply that the leadership style must be autocratic in China and India, and participative in Estonia.

Many authors agree that it is impossible to explain what is happening in organizations without understanding the cultural background of the members of organizations (Alas and Vadi, 2004; Chatterjee et al., 2006; Erez and Early, 1993; Gopalan and Stahl, 2006; Kennedy, 2001; Lynton, 2001; Jaques, 1989; Sinha, 2004). But as studies show, the cultures always also influence each other (Avgerou, 2001; Van Maanen and Laurent, 1993), and that organizational cultures are also influenced by universally applicable management cultures besides the national culture (Sinha, 2004).

Different Models of Change Management

In this article an organization has been defined as a complex system that produces outputs in the context of an environment, an available set of resources, and a history (Nadler and Tushman, 1989), and the term change will refer to planned responses to pressures and forces from the environment or inside the organization (Alas and Sun, 2009).

Many researchers have developed different models of change management starting with Kurt Lewin's three-stage model (Lewin, 1951). Understanding the complexity of the change management process, researchers have tried to split Lewin's stages to guide change leaders through difficult change management projects. Recently, some authors have criticized the theories of change management. They argue that there are no universal prescriptions on how best to manage change and accuse the researchers for over-simplifying the complex process (Dawson, 2003; Desai and Sahu, 2008; Anderson and Ackerman-Anderson, 2001). The authors of this article want to contribute to the development of change management models by taking into account the cultural context of the country.

The Leadership Style and Employee Involvement

In this study, the change leader is defined as a person who is responsible for implementing changes in an organization. Respondents were asked about the dominant leadership style during the change management project. Kurt Lewin defined three major leadership styles – autocratic, participative and delegative (Lewin et al., 1939). In the autocratic style, the leader takes decisions without consulting with the employees. In the participative style, the leader involves employees in the decision-making. In the delegative style, the employees are allowed to make decisions, although the leader may still be responsible for the outcome. Burns and Bass used the terms transformational and transactional leadership style (Bass, 1985; Burns, 1978). The transformational leader inspires followers to work towards a common goal while the followers of the transactional leader are motivated by rewards and punishment. Likert identified four leadership styles – exploitative authoritative, benevolent authoritative, consultative and participative (Likert, 1967). Leaders using the exploitive authoritative style use mainly fear-based methods and have no concern for people. Leaders using the benevolent authoritative style also use rewards but all major decisions are still made by the leader. In the consultative style, decisions are still made by the leader but the leader listens to the ideas of followers. In the participative style, followers are involved in the decision-making process.

In this study the scale of leadership style was divided as follows: 1 – participative, 3 – autocratic, 2 – in the middle of autocratic and participative. The authors believe that the autocratic style covers the transactional style as well as Likert's authoritative styles, and the participative style covers the transformational style. The style between these two may be seen like Likert's consultative style. The authors of this article excluded the delegative style from the questionnaire because leaders cannot delegate the leadership of change (Nadler, 1997).

The leadership style adopted by the change leader plays a big role during change implementation projects. The culture and managerial beliefs and practices of the leader are directly related, and the cultural values of organizations influence many aspects in organizations, including the expectations of leadership style (Mahler, 1997; Head and Sorensen, 2005; George, 2003; Early and Erez, 1997).

According to the leader's leadership style, changes can be viewed as management driven or participatory. Management driven changes are planned and implemented by managers alone; in participatory changes, the power and responsibilities are shared between the employees and the management (Bruce and Wyman, 1998). During participatory changes, employee involvement can be in the form of information sharing or involvement in decision-making. Information sharing increases management control (Teicher, 1992), while involvement in decision-making presupposes that managers trust their employees (Brown and Cregan, 2008).

Researchers see employee involvement in decision-making as a critical factor in mitigating resistance and successful change, and as the best method for achieving employee commitment to change (Judson, 1991; Cameron et al., 1993; Coch and French, 1948; Dean et al., 1998; Kirkpatrick, 1985; Pasmore and Fagans, 1992; Pendlebury et al., 1998; Porras and Hoffer, 1986).

There are other authors who argue that the participatory approach can be a double-edge sword (Kumar and Amburgey, 2007). Some declare that the greater the magnitude of the change, the more leader-directed activities will be required (Hersey and Blanchard, 1997) or that employees should not be involved during the crises when quick changes are to be implemented (Kotter et al., 1986). One drawback of employee involvement seems to be the fact that this is enormously time consuming (Kotter and Schlesinger, 1979). Employee involvement in decision-making means that managers need to relinquish some control over the company while remaining responsible for the outcome (Brown and Cregan, 2008).

As there is no clear agreement among researchers about the benefits of the participative style during change projects, but the authors of this article assume that the possibility of involving employees and the benefits of such involvement differ in different countries. Several researchers have found that the effectiveness of employee involvement in decision-making is influenced by the employee's attitude toward involvement and that employees differ in the amount of participatory effort they are prepared to expend (Knocke, 1991; Brown and Cregan, 2008; Savery and Soutar, 1991). The effectiveness of employee involvement may be influenced by local culture and traditions. It is well known that Indians traditionally accept authority and value respect for superiors (Budhwar, 2009b). Subordinates rely on their superiors for advice and direction. The strong influence of social relations, caste and religion is still observable in Indian organizations (Sparrow and Budhwar, 1997). In China the change leader is also mainly a top-manager who informs the employees of the necessity of change and does not motivate employees to participate (Sun, 2009), or is involved as a form of manipulation and just receive orders from the top (Sun and Alas, 2007). This is accepted by the employees because Chinese employees are afraid of making mistakes that can reduce their status (Alas and Vadi, 2004). Also some studies in post–socialist countries have shown that employees do not want to participate in decision-making, and may even interpret such invitations as a sign of the management's loss of orientation (Piske, 2002).

As the triangular model of dealing with organizational change (Alas, 2007) shows, the success of change depends on the process of change, type of change and the readiness for change. We suggest that the part of the process of change, among other factors, that determines the level of employee involvement is leadership style.

National Culture and Recent Institutional Changes in India, China and Estonia

As institutional theory suggests that the success of change is influenced by the institutional environment of the organization, the cultural background and recent changes in the Indian, Chinese and Estonian institutional environment are briefly presented.

India has the longest history of the unbroken continuity of its culture, traditions and ethos. Seventy-five per cent (75%) of Indians follow Hinduism (Chhokar et al., 2008). The scale for beliefs in Hinduism can be summarized as belief in the law of karma, belief in the atma or soul, and belief in the mukti or liberation (Mulla and Krishnan, 2006). Management practices in India are mostly influenced by the belief in the law of karma, which includes the ideas of responsibility and obedience (Mulla and Krishnan, 2007). The nature of Hinduism has always emphasized respect for superiors, evidenced by the caste and social system (Sahay and Walsham, 1997). In 1990, Sinha identified five common values in India: belonging to some group, harmony and tolerance, duty in contrast to hedonism, a preference for personalized relationships and a preference for arranging persons, objects, ideas and relationships hierarchically (Sinha, 1990).

The legacy of the caste system, patronage, patriarchy and unconditional obedience strongly influences management practices (Virmani, 2007) despite Western influences and Western management theories that are taught in Indian business schools. After regaining its independence in 1947, India adopted a socialist socio-economic policy (Mellahi and Guermat, 2006). Inspired by Soviet-style economic theory and practices, the Indian government nationalized entire industry groups and all banks (Cappelli et al., 2010). In 1991, India announced the New Industrial Policy and the Indian government initiated a number of measures to deregulate the economy. This resulted in increased openness to international trade and capital inflows (Mellahi and Guermat, 2006). As a result, Indian firms came under tremendous pressure to change the existing technology and organizational culture, to remove surplus labour and to improve quality (Budhwar, 2009b). Today India is considered one of the strongest emerging markets (next to China). However, India still has a long way to go before it can compete fully on the world's market (Budhwar, 2009b).

Chinese culture and ethos come mainly from the writings of Confucius, Lao Tzu and Sun Tzu. Confucius defined rules for relationships that were all strictly hierarchical. Confucian philosophy prevails in Chinese culture (Graham and Lam, 2004). Chinese statecraft has always aimed for order, harmony and hierarchy (Khanna, 2007). In the first half of the 20th century, the Japanese invasion, the Second World War and the Chinese Civil War caused a chaotic situation in China that culminated in the collapse of the country's military, social and economic systems (Foy and Maddison, 1999). Two years after India regained its independence, in 1949, the Chinese Communist Party proclaimed the People's Republic of China. During the years between 1949 and 1978, China copied Soviet practices just like India did. The reforms started in China a decade before they started in India and in Estonia. In the 1980s, reforms began aimed at converting the economy from a command economy to a market economy (Sun and Alas, 2007). In 2001, China became a member of the WTO. This presented a new stage in the reforms and an opening up to the outside world (Chow, 2000). The reforms in state-owned enterprises and in the banking and financial sector, and the globalization of the Chinese economy are on-going (Sun, 2009).

Estonians have lived along the Baltic Sea for over 5000 years. Estonia has been a battleground for centuries where the Germans, Danish, Russians, Swedish and Polish ruled Estonia. All these rulers have left their inheritance in the Estonian psyche and ethos. From 1919 to 1940 Estonia was an independent state with democracy and a free market economy. The Soviet occupation in 1940 was followed by a restructuring of institutions according to the principles of the occupant country (Taagepera, 1993). Radical reforms commenced in Estonia in 1987/8, when a group of theoreticians and practitioners debated the idea of economic autonomy for Estonia (Taaler, 1995). In 1990, the strategic aim of economic autonomy was replaced by the status of an independent state and the restoration of a market economy (ibid.). Independence was achieved in 1991. After that the Estonian economy was developed according to Freedman's concept of liberal market economy (Laar, 2001). In 2004, Estonia became a full member of the European Union. Today, Estonia is the most successful country among former members of the Soviet Union. In January 2011, Estonia joined the euro zone, being the first former republic of the Soviet Union to join that institution.

Although all three countries face similar changes in the institutional environment, the speed of changes in each case has varied. Economic reforms in China and India have been implemented gradually (Cappelli et al., 2010; Chatterjee and Heuer, 2006; Lin et al., 1996; Sun and Alas, 2009), while in Estonia the reforms were implemented quickly (Hoag and Kasoff, 1999). But it is mainly the cultural element of the institutional environment that influences the relationship between managers and employees. According to Hofstede's cultural dimensions, Indian culture is clearly more similar to the Chinese than to the Estonian culture in the case of power distance and masculinity.

Propositions

The authors present the following propositions and the basis for formulating them, which are based on the literature review:

In light of the power distance index (PDI) the authors expect less employee involvement and an autocratic leadership style during change projects in India and China, while in Estonian organizations employee involvement should be more frequent and the leadership style more participative.

P1: In the process of change implementation in Indian and Chinese organizations the leadership style of the change leader is autocratic and the level of employee involvement is low. In Estonian organizations the leadership style is participative and the level of employee involvement is higher than in India and China.

Many studies have shown that a participative leadership style gives better results. There are other authors who argue that the greater the magnitude of change, the more leader-directed activities will be required and less follower directed activities are permitted (Hersey and Blanchard 1997). As there is no clear agreement among researchers about the benefits of employee involvement during change projects, the authors of this article assume that the opportunity to involve employees and the benefits of such involvement is influenced by the local culture and traditions.

P2: Change projects in Estonia are more successful when employees are involved in the decision-making, but employee involvement has a negative effect in China and India.
Leadership style plays a big role during the implementation of change projects. While the participative style is commonly recommended, some authors argue that the suitability of the participative style may depend on the cultural values of the organizations members. In light of this, the authors formulate proposition 3.
P3: The participative leadership styles gives different results in India, China and Estonia.

Methodology of the Research

The authors used the interview questionnaire worked out by Tatiana Andreeva (Andreeva, 2006; Andreeva et al., 2008). In order to conduct the research, 177 interviews were carried out in Estonia (n=63), China (n=55) and India (n=59). The respondents were chosen using the authors' professional networks. The respondents were top managers and management consultants who had been involved in the development and implementation of large change projects. In India the questionnaire and the interviews were conducted in English because all the respondents were fluent in English. In China the data was gathered using Mandarin and in Estonia, the Estonian language was used. All respondents were asked to reflect on one specific case of organizational change they had participated in in a specific company.

Cross-sectional research design can include gathering both qualitative and quantitative data. It also makes it possible to seek out possible causal associations between variables (Matthews and Ross, 2010). During the interviews both qualitative and quantitative data was collected. However, in this article, the results of the analysis of the quantitative data are presented. In the quantitative analysis an ANOVA and t-test were completed, linear regression analyses and correlation analyses were also used to discover the structure of the connections.

The results of the Study

In order to evaluate how elements of organizational change depend on the cultural background of organizational members, the leadership style and the level of employee involvement during change management projects in India, China and Estonia were studied. The correlation between leadership style and employee involvement was then analysed. The authors subsequently analysed how the success of the change management projects depended on the leadership style and the level of employee involvement.

Leadership Style

On a scale describing leadership style of 1 to 3, where 1 is participative and 3 is autocratic, change leaders in Chinese organizations mostly used the autocratic style (mean 2.710, standard deviation 0.460). Change leaders in Estonian organizations, by contrast, mostly used the participative style (mean 1.57, standard deviation 0.563). Change leaders in Indian organizations used a style that was closer to autocratic than participative (mean 2.440, standard deviation 0.601) based on the mean value. Nevertheless, the autocratic style was used more often in India (mode 3). The skewness of the results also indicated that the leadership style in India and China tend to be more autocratic and in Estonia more participative. While in China there were no cases and in India only one case where the participative style was used, in Estonia there was only one case where the autocratic style was used. Therefore, we cannot analyse the influence of the participative style on other elements of change management in China and India. In addition, we cannot analyse the influence of the autocratic style on other change management elements in Estonia. But the results correspond to the power distance and masculinity indices of Hofstede's study (Hofstede, 2001), and therefore, the authors believe that the selected samples satisfactorily represent the organizations in these three countries. According the t-test the leadership style in all three countries was different. The corresponding statistical coefficients are presented in Appendix 3. Figure 1 illustrates the differences in the leadership style of the change leader in India, China and Estonia.

Employee Involvement

The respondents were asked whether the change leader involved any employees in decision-making about the content of the change

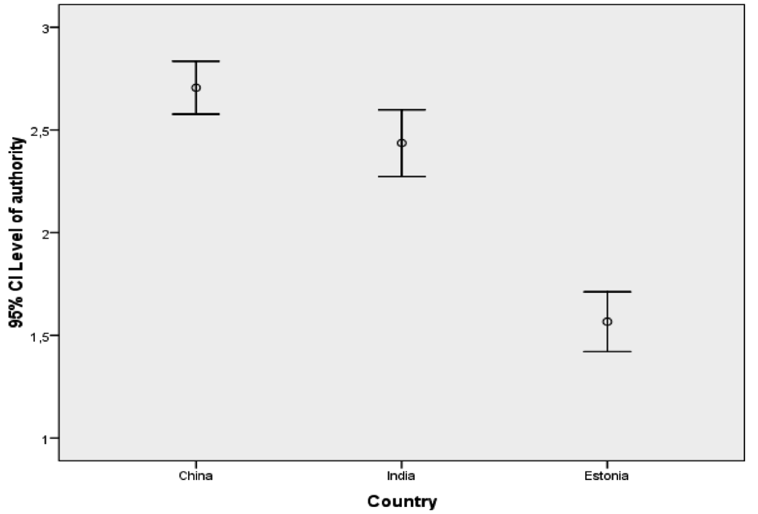

Figure 1: The difference of leadership style of change leader in India, China and Estonia. Drafted by author.

Table 2: Employee involvement in decision making about content of change and about change implementation (% of companies). Drafted by author.

	India		China		Estonia	
Involved in decision making about ...	content of change	implement-tation of change	content of change	implement-tation of change	content of change	implement-tation of change
Nobody or only top management team was involved	63%	64%	51%	52%	49%	64%
Key specialists	22%	13%	11%	11%	32%	20%
Middle managers	13%	18%	25%	24%	8%	11%
Ordinary employees	2%	5%	13%	13%	11%	5%

or the implementation of the change (Table 2). There was a clear correlation between involving employees in decision-making about the content and the implementation of the change in all three countries with a significance level of 95%. The correlation coefficients are presented in Appendix 4. This means that if, for example, key specialists were involved in decision-making about the content of the change, often the same group was involved in decision-making about the implementation of the change.

In all three countries, in more than half of the cases the change leader did not involve anybody or only involved top managers in decision-making about the content and implementation of the change. But the involvement pattern was different in Estonia compared to the two Asian countries. In Estonia, lower level employees were more often involved in making decisions about the content of the change than about the implementation of the change (Table 2). In all three countries it was remarkable that even when culture and values were among the elements that were planned as

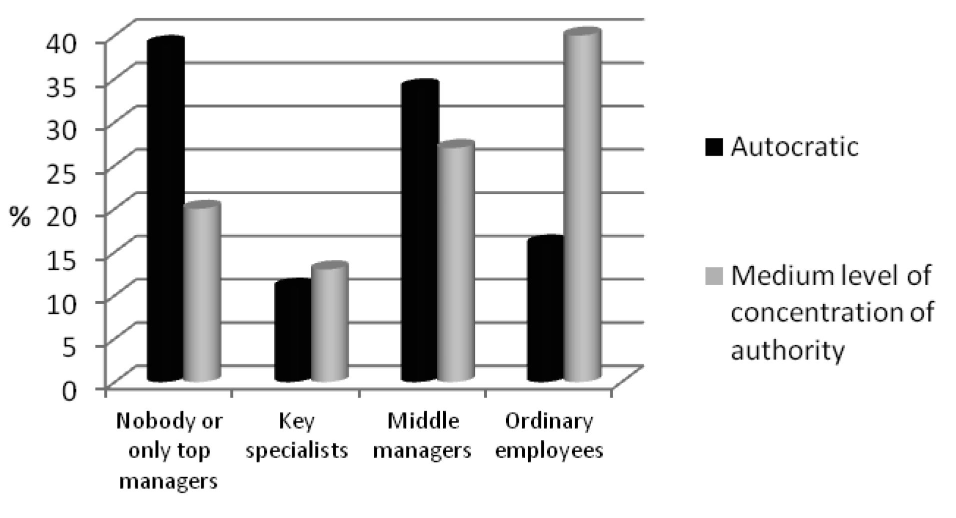

Figure 2: The influence of leadership style to employee involvement in any decision making in China. Drafted by author.

part of the change, ordinary employees were not involved in the decision-making process.

Influence of Leadership Style on Employee Involvement

To evaluate the influence of leadership style on employee involvement, an ANOVA test was used (Appendix 5). The hypothesis H0 was – "There are no differences among the means of the level of employee involvement in the groups where the leadership style is different". At a significance level of 95%, the null hypothesis was rejected only in the case of China.
In China, when the leadership style was autocratic, more often nobody or only top managers were involved in decision-making by the change leader. In the case of medium levels of authority, ordinary employees were more often involved. Middle managers and key specialists were involved almost equally in both cases. There were no cases in China where the leadership style was participative. The influence of leadership style and employee involvement on decision-making in China is shown in Figure 2.

In India and in Estonia, the differences in employee involvement in decision-making were not significant in the groups with different leadership styles. In the case of these countries, the most interesting finding was that even if the interviewee declared that the leadership style was participative, the change leader most often involved only top managers in the decision-making process. The authors therefore speculate that the participative style does not necessarily mean the involvement of employees in the decision-making process in these countries.

Leadership Style and the Success of Change Management Projects

The respondents were asked to evaluate on a scale of 0% to 100% the results of organizational change from the point of view of the achievement of the goals set for the change program by the change leader (from here on referred to as "success rate"). It turned out that the described changes were most successful in Estonia and least successful in India, where the mean was 75±21% and 63±17% respectively. In China the mean of the success rate was 67±18%.

In India, the ANOVA test showed the difference between the success rates under different leadership styles at a significance level of 90% (Appendix 6). The correlation coefficient was significant at the significance level of 95%

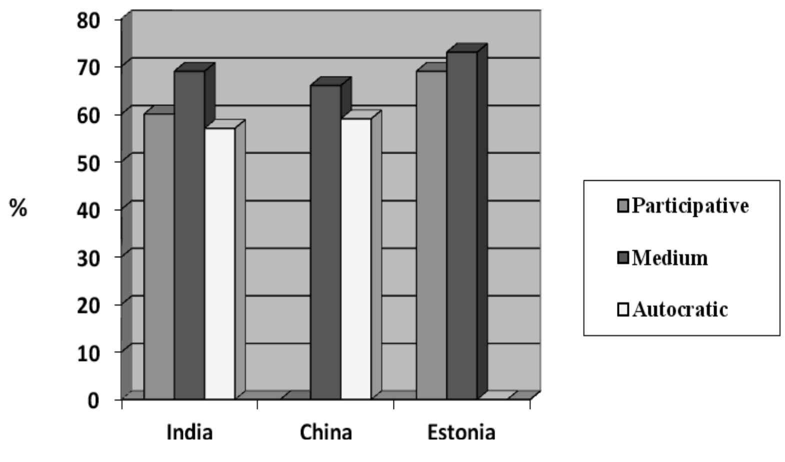

Figure 3: Success of the change (weighted average) according to the level of concentration of authority in India, China and Estonia. Drafted by author.

and negative; this means that where a moderate concentration of authority was used by the change leader, the success rate was higher.

The ANOVA test in China and Estonia did not show the significant differences between the success rates under different leadership styles, and the correlation coefficients were also very weak between leadership style and success rate. Still, the directions of the correlation coefficients make it possible to draw some conclusions. While the correlation coefficients were negative in India and China, the coefficient was positive in Estonia. Taking into consideration the dominant leadership styles in these countries, the correlation coefficients may indicate that in all three countries a moderate concentration of authority tends to give better results than both very autocratic and very participative. The same can be seen from Figure 3.

Employee Involvement and Success of Change Projects

To evaluate the influence of employee involvement on the success of change projects, the authors used the ANOVA test, correlation coefficients (Appendix 7) and regression analyses.

In India, the ANOVA test showed significant differences between success rates in groups where the level of employee involvement was different ($F=2.768$, $Sig.=0.039$); the correlation coefficients also indicated satisfactory correlation between employee involvement and success rate at a significance level of 95%. The regression analysis made it possible to provide a formula for change management projects in Indian organizations (for the formula $F=3.789$, $Sig.=0.016$):

Success rate = -0.143 LCA – 0.215 R + 0.281 EI,

where LCA is the level of the concentration of authority on a scale of 1 to 3, (1 is participative and 3 is autocratic), EI is the level of employee involvement on a scale of 0 to 4, (0 means nobody and 4 ordinary employees), R means the level of resistance, which was also measured and analysed, but the results of that study is beyond the scope of this article.

In Estonia, the ANOVA test did not show significant differences between success rates in groups where the level of employee involvement was different ($F=1.118$, $Sig.=0.358$); the correlation coefficients were also lower than in the case of India. Still, the regression analysis allowed us to provide a formula for change management projects in Estonian organizations (for the formula $F = 5.205$, $Sig.=0.026$):

Success rate = 0.292 EI,

where EI is the level of employee involvement on a scale of 0 to 4 (0 means nobody and 4 ordinary employees). Including the level of the concentration of authority and other factors did not give a statistically significant formula in the case of Estonia.

In China, the ANOVA test did not show significant differences between success rate in groups where the level of employee involvement was different ($F=1.500$, $Sig.=0.218$); the correlation coefficients were also close to zero. The regression analysis did not give any formula for success rates.

All three methods showed that the success of change projects depends on leadership style and employee involvement in India, and only on employee involvement in Estonia. But that such a dependency was almost non-existent in China.

Conclusion and Discussion

Discussion of the Research Propositions

This section will discuss the propositions presented at the beginning of the article.

P1: In the process of change implementation in Indian and Chinese organizations the leadership style of the change leader is

autocratic and the level of employee involvement is low. In Estonian organizations the leadership style is participative and the level of employee involvement is higher than in India and China.
The proposition was partly supported. The study showed that the leadership style of change leaders in India and China was more autocratic and in Estonia more participative. The results correspond accurately with the power distance and masculinity indices of Hofstede's study (Hofstede, 2001).

In all three countries, in more than half of the cases the change leader did not involve anybody or only involved top managers in decision-making about the content and implementation of the change. Employee involvement was almost equally low in Estonia and India, and slightly higher in China.

The autocratic leadership style and low level of employee involvement in decision-making is well understood in the case of India, where respect for leaders is part of Hinduism (Budhwar, 2009a). In Indian organizations, managers are traditionally expected to look after employees and their families, and in return employees are expected to look after the company (Cappelli et al. 2010). In such a paternalistic management system employees act as sons in a big family and they prefer to leave the decision-making to the bosses who act as the fathers of that big family (Virmani 2007). In many cases the respondents stressed that even if the change leader tried to involve employees, they actually did not participate. Respondent 55 said: "*It is very important (for a consultant) to get the pulse of the middle management and lower level employees. The top management is not in touch with shop-floor reality.*"

The participative style of Estonian change leaders was also expected because Estonian society has historically been less autocratic than Indian and Chinese societies. In addition, after losing the Soviet market, Estonian companies were forced very quickly to reorient to Western markets in order to survive. To be accepted there they had to introduce Western standards, including democratic and participative management styles. The low level of employee involvement in the decision-making process can be explained if we look at the findings of Ruth Alas (2004). While analysing change management projects in Estonia she found that Estonian change leaders focused on initiating the change projects, but paid less attention to assessing and modifying change implementation (Alas and Vadi, 2004). They empowered employees to participate in the change implementation process, not in decision-making processes.

In China, despite the very autocratic leadership style, lower level employees were involved in decision-making processes more often than in India and Estonia. But, as Wei Sun explains, employees were not motivated to participate and they could be involved as a form of manipulation and they just received orders from the top (Sun and Alas, 2007).

P2: Change projects are more successful when the employees are involved in decision-making in Estonia, but employee involvement has a negative effect in China and India.
This proposition was not supported. The success of the change projects depends significantly on employee involvement in India and weakly in Estonia. In both countries the success rate was higher when lower level employees were involved in the decision-making process about the content and implementation of the change. There was no evidence that the level of employee involvement has any effect on the success of change projects in China.

In India, the findings may imply that even in organizations that function as big families, the involvement of lower level members in decision-making gives better results. In Estonia, employees probably did participate but not so often in decision-making. After the change leader had made decisions with the top management team, they empowered employees to participate providing them training and support (Alas et al., 2008).

According to this study the authors cannot reject the assumption that involving employees gives better results despite the cultural background of organizational members. But the willingness to participate may still be different and need further research.

P3: Participative leadership styles give different results in India, China and Estonia.
This proposition was not supported. Only in India did the success rate depend on the leadership style. Although the statistical tests did not show a significant correlation between the leadership style and the success rate in China and Estonia, the direction of the correlation coefficient indicated that in all three countries a moderate concentration of authority may give better results. Therefore, the authors of this study did not find evidence that the participative leadership style gives better results.

Summary of Findings

The research task in this study was to find out how the leadership style of the change leader and employee involvement depends on the cultural background of the members of the organization. The research question was: "Is the leadership style of the change leader different in the cultures of India, China and Estonia? If yes, then how do these differences influence the success of change projects?"

Based on the interviews, the leadership style corresponded accurately with Hofstede's power distance and masculinity indices, but the differences in leadership style did not significantly influence employee involvement in the decision-making process in India and Estonia. Even when the leadership style was participative, lower level employees were only involved in decision-making in very few cases. Furthermore, although the leadership style in China was mostly autocratic, employees were actually involved more often, but since this did not influence the success of the change projects, the authors agree with Wei Sun (Sun and Alas, 2007) that this involvement was mostly manipulative.

According to this study it can be concluded that the success of the change process does depend on the level of employee involvement to decision-making in two very different cultures such as India and Estonia. Therefore, employee involvement should be included as a critical factor in the triangular model by Ruth Alas (Alas, 2007).

Implications for Managers and Management Consultants

First. A moderate concentration of authority seems to give better results during change management projects.
Second. Despite the national culture of organizational members, employee involvement in decision-making about the content and implementation of change is recommended in order to achieve the goals set for change projects.

Limitations and Further Research

The size difference between the two Asian countries and Estonia is huge, and the representativeness of 50–60 companies per country is low. The authors believe that the respondents were chosen carefully and represent the experience of change management. Nevertheless, it would be easier to generalize on the basis of the results if a larger number of companies were included.

It would be interesting to compare the results of these three transition countries with results from a similar study in countries that have enjoyed a more stable economic and social environment. In addition, attitudes towards change among employees in these countries should also be studied. After studying changes from the employee point of view, better suggestions for managers and consultants involved in change management in these countries can be given.

Appendices

Appendix 1: Interview Questions Relevant to this Study

B2 How would you describe this change programme according to its substance? It was meant to change: 0 – all parameters; 1 – mission, corporate ideology; 2 – business strategy; 3 – organizational structure; 4 – distribution of power, influence; 5 – corporate culture, key values; 6 – management system as a whole; 7 - key people in the organization; 8 - qualitative structure of the staff; 9 - production technology employed; 10 - rules and procedures of everyday work; 11 - functional systems; 12 - other
B5 Who, in your opinion, was the leader of the change in this particular situation? 1 – owner; 2 - company's leader; 3 - top management team; 4 - middle managers; 5 - consultants
B7 Did the company leader involve any of the company's employees in the decision-making about the content of the change? 1 – no; 2 - yes, these were top managers; 3 - yes, these were key specialists; 4 - yes, these were middle managers; 5 - yes, these were ordinary people.
B8 Did the company leader involve any of the company's employees in the decision-making about the change implementation process? 1 – no; 2 - yes, these were top managers; 3 - yes, these were key specialists; 4 - yes, these were middle managers; 5 - yes, these were ordinary people.
B10 How would you describe the level of concentration of authority in the change program development and its implementation? 1 - high (autocratic - all decisions are concentrated on top management level); 2 – medium (some decisions are delegated to middle managers, heads of departments, etc.); 3 - low (participative - wide range of employees is involved in preparation of decisions and decision-making)
E1 How could you evaluate the results of the implemented organizational change from the point of view of the achievement of the goals set for the change program by the company leader? 0% - goals are not achieved at all, 100% - goals are fully achieved.

Appendix 2

Table 3: Size of Indian organizations in the sample

Number of employees	India	China	Estonia
Less than 30	3%	19%	46%
30 – 100	9%	21%	30%
101 – 500	17%	21%	14%
501 - 1000	14%	13%	0%
1001 – 5000	36%	21%	10%
Over 5000	22%	6%	0%

Table 4: Categories of industry of the sample

Industry	India	China	Estonia
Production of goods for end users	25%	10%	12%
Production of goods for business	31%	8%	8%
Providing services for end consumers	20%	31%	36%
Providing services for end consumers	46%	17%	22%
Trade for end consumers	3%	14%	16%
Trade for businesses	7%	20%	6%

Table 5: The age of organizations in sample

Age	India	China	Estonia
0 - 2 years	7%	11%	5%
3 – 5 years	7%	24%	14%
6 – 10 years	12%	36%	25%
11 – 15 years	14%	11%	32%
16 – 20 years	18%	7%	16%
Over 20 years	42%	11%	8%

Appendix 3

Table 6: The statistical coefficients for leadership style in the scale of 1 to 3, where 1 is participative and 3 is autocratic style.

Country	Mean	Median	Mode	Std. Deviation	Skewness	Kurtosis	Minimum	Maximum
India	2.44	2.00	3	0,601	-0.542± 0.422	-0.578± 0.634	1	3
China	2.71	3.00	3	0.460	-0.931± 0.333	-1.181± 0.656	2	3
Estonia	1.57	2.00	2	0.563	0.317± 0.309	-0.853± 0.608	1	3

Table 7: The difference in leadership style in India, China and Estonia. t-test of Hypothesis 0: "The leadership style of change leader is similar in India and China, India and Estonia, and/or in China and Estonia."

	t	df	Sig. (2-tailed)	Mean differences	Std.Error differences
India and China	2.002	100.467	0.011	0.270	0.104
India and Estonia	7.984	110.431	0.000	0.870	0.109
China and Estonia	11.723	108.841	0.000	1.139	0.097

Appendix 4

Table 8: Correlation coefficients between employee involvement to decision making about change content and about change implementation.

	Pearson's r	Sig. (2-tailed)	Kendall's tau	Sig. (2-tailed)	Spearman's rho	Sig. (2-tailed)
India	0.305	0.023	0.595	0.000	0.652	0.006
China	0.342	0.010	0.340	0.002	0.380	0.004
Estonia	0.256	0.043	0.289	0.006	0.312	0.013

Appendix 5

Table 9: ANOVA test for hypothesis H0: "There are no differences among the means of employee involvement in the groups where the leadership style is different". (Homogeneity of Variances: India Sig. = 0.258; China Sig.=0.413; Estonia Sig.=0.045)

Country		Sum of squares	df	Mean Square	F	Sig
India	Between groups	2.048	2	1.024	1.229	0.301
	Within groups	43.333	52	0.833		
	Total	45.382	54			
China	Between groups	7.255	1	7.255	4.132	0.048
	Within groups	86.039	49	1.756		
	Total	93.294	50			
Estonia	Between groups	1.419	2	0.710	0.533	0.590
	Within groups	75.914	57	1.332		
	Total	77.333	59			

Appendix 6

Table 10: ANOVA test for hypothesis H0: "There are no differences among the means of success rate in the groups where the leadership style is different". (Homogeneity of Variances: India Sig. = 0.009; China Sig.=0.832; Estonia Sig.=0.223)

Country		Sum of squares	df	Mean Square	F	Sig
India	Between groups	3.204	4	0.801	2.436	0.061
	Within groups	14.796	45	0.329		
	Total	18.000	49			
China	Between groups	0.533	4	0.133	0.586	0.675
	Within groups	9.779	43	0.227		
	Total	10.313	47			
Estonia	Between groups	0.506	4	0.126	0.382	0.821
	Within groups	17.563	53	0.331		
	Total	18.069	57			

Table 11: Correlation coefficients between leadership style and success rate.

	Pearson's r	Sig. (2-tailed)	Kendall's tau	Sig. (2-tailed)	Spearman's rho	Sig. (2-tailed)
India	-0.241	0.093	-0.268	0.040	-0.293	0.039
China	-0.171	0.245	-0.146	0.281	-0.157	0.286
Estonia	0.029	0.827	0.033	0.782	0.036	0.787

Appendix 7

Table 12: ANOVA test for hypothesis H0: "There are no differences among the means of success rate in the groups where the Level of employee involvement to decision making during change management projects". (Homogeneity of Variances: India Sig. = 0.103; China Sig.=0.082; Estonia Sig.=0.129)

Country		Sum of squares	df	Mean Square	F	Sig
India	Between groups	7.566	4	1.892	2.768	0.039
	Within groups	30.754	45	0.683		
	Total	38.320	49			
China	Between groups	10.741	4	2.685	1.500	0.218
	Within groups	80.539	45	1.790		
	Total	91.280	49			
Estonia	Between groups	5.868	4	1.467	1.118	0.358
	Within groups	70.844	54	1.312		
	Total	76.712	58			

Table 13: Correlation between employee involvement and success rate.

	Pearson's r	Sig. (2-tailed)	Kendall's tau	Sig. (2-tailed)	Spearman's rho	Sig. (2-tailed)
India	0.359	0.010	0.299	0.017	0.339	0.016
China	0.135	0.533	0.075	0.533	0.097	0.502
Estonia	0.256	0.051	0.201	0.070	0.225	0.086

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Corporate Governance in Listed Italian Family Firms: Impact on Performance and Comparison with Non-Family Firms

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Abstract

The main goal of this study is to analyse the impact of board composition on performance within listed Italian firms, comparing this impact between family and non-family firms. This variable has a significant impact on business performance. Indeed, many studies underline the importance of board composition through the composition-performance relationship, and whether this relationship considers financial indicators alone in order to measure performance.

The research method is the analysis of a sample composed of listed Italian family and non-family firms (FTSE MIB and STAR) and the data used were taken from the AIDA database and the 'Borsa Italiana' website, which is the Italian website containing the official data of listed companies.

Family firms considered for the purposes of this study were chosen following two criteria: first, the family controls a relevant percentage of the ownership and, second, at least one family member has a management role and participates in the board.

This study contributes to the literature on family corporate governance and shows that family involvement has a positive effect on company performance.

Further research will aim to eliminate the limitations of our study. In particular, we would like to increase the number of companies in the sample, considering all the listed companies on the Italian stock market and the non-listed ones; it could also be interesting to compare Italian listed companies with non-Italian ones.

Keywords: family firms, corporate governance, performance, independent members

Introduction

The literature on family firms shows that corporate governance is a relevant topic debated

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over the last 20 years, especially concerning the relationship between family and business (Neubauer and Lank, 1998). A well-functioning board of directors is a critical resource for family and business; this relationship emerges in particular inside the board of directors.

Researchers have adopted theories such as Agency Theory, Contingent Approach, Life-cycle Approach, Stewardship Theory and Social Capital. Particular attention is given to the composition of the board of directors and its influence on business performance, although results are sometimes contradictory, and it remains unclear how board composition affects firm performance.

Our study analyses the composition-performance relationship in family and non-family businesses, considering the family as a relevant variable, regardless of the fact that it is sometimes forgotten in the literature. Dyer (2006) refers to the family as 'the missing variable in organisational research' and he warns that 'failing to use the family as a variable in organisational research can lead to incomplete or misleading findings' (Speckbacher and Wentges, 2007). In particular, after considering the impact of board composition on performance in family firms, we compare the achieved results with the same ones obtained by non-family firms in order to understand whether there is a relevant difference.

Consequently, the main goal of this study is to analyse the relationship between board composition and performance in listed Italian family and non-family firms, underlining how the family variable affects performance. This topic is particularly significant in Italy, as the family firm phenomenon is widespread.
For the purposes of this research it is also important to underline the fat that family firms differ from other firms in terms of the importance that the existence of family ties has among the participants in the firm (Miller-Lester et al., 2007), specifically among the members of the board of directors.

This article is structured as follows. Firstly, it analyses the theoretical background and definition of family firms and the composition of boards of directors in general. Secondly, the research method is outlined, as well as a brief presentation of the sample. Finally, the results and conclusions are discussed and the limits and implications of the study are defined.

Theoretical Background

A Definition of the Family Firm

Between the 1960s and 1970s, corporate and economic literature was characterised by a series of analyses on family businesses, which systematically assumed that the development of a family business can be hindered by the fact of its ownership coinciding with its governance (Levinson, 1971).

Around the 1980s and then in the 1990s, a series of events contributed to increasing interest in research in the subject. Among these, the restructuring process of large companies in the United States and the crisis in Europe that struck state controlled corporations; by contrast, the family business model has been successful in Japan. To these events, the problems related to Agency Theory must be added (Ross, 2004; Kaplan and Atkinson, 2002; Prendergast, 2000; Levinthal, 1988; Nalbantian, 1987; Rasmusen, 1987; Fama, 1980; Shavell, 1979), with particular reference to what has been called 'moral hazard', stemming from the fact that the management's actions are characterised by opportunistic behaviour that is not aligned with maximising the creation of corporate value (Mirrlees, 1999; Darrough and Stoughton, 1986; Williamson, 1985; Holmström, 1979; Arrow, 1968). These problems are easier to solve in a family business. In addition, scholars are interested in the potential of family businesses to deal with competitiveness on the national and international level (Lamoreaux, 1994; Barry, 1989).

In recent years, family businesses have been given increasing attention and several recent studies have reported and stressed that in continental Europe, Asia and Latin America, the vast majority of publicly traded businesses are family controlled (Faccio and Lang, 2002; Claessens-Djankov et al., 2000; La Porta-Shleifer et al., 1999). These scholars also suggest that family businesses play an important role in economic activities worldwide and contribute to creating wealth and jobs, with reference to both narrow and broad definitions of family business (Astrachan and Shanker, 2003). The quantification of family businesses in the United States and Europe is the subject of several studies (Colli-Perez et al., 2003; Neubauer and Lank, 1998; Shanker and Astrachan, 1996; Corbetta, 1995; Sluyterman and Winkelman, 1993; Larner, 1970).

Attention focuses more and more on family businesses; however, it is not that easy to find a definition for the expression 'family business', and ambiguities persist in the literature. The editorial note in the first issue of Family Business Review asks: 'What is a family business?' (Lansberg-Perrow et al., 1988). Although there seems to be a general understanding of the term, due to the complexity of the phenomenon (Hoy and Verser, 1994), a precise, commonly shared definition is yet to be found. The question continues to be asked because in the literature several different definitions are given for family business.

Some studies define family businesses on the basis of the criteria of ownership and control. In particular, a family business is a 'firm in which significant voting rights or ownership is controlled by a member or members of a single family' (Barnes and Herson, 1976); other studies use the share of capital owned by a single family as a distinguishing criterion (Lansberg-Perrow et al., 1988).

In a family business, one or more families having kinship or similar ties are the owners of the full-risk contributed capital (Ferrero, 1980). In a family business, one or more families linked by kinship or similar ties or by strong alliances contribute with full or limited risk capital, personal or collateral guarantees or managerial skills; these families own a full-risk capital share that entitles them to control the business even without an absolute majority of capital (Corbetta and Dematté, 1993). It follows that a family business can be composed of a single family, as is the case of the generation establishing the business, which is headed by the founder assisted by the other members of his or her family; as an alternative, the business includes different families, in particular after a generational handover has occurred and the company is in its second generation.

The family business is run with the aim of establishing, enhancing and reinforcing a long-term vision approved by a prevailing coalition, controlled by family members or a limited number of families (Sharma-Chrisman et al., 1997). In this context, the family members or the limited group of families are the economic group of the business; that is, the person or group of people that has and exercises power over it (Airoldi-Brunetti et al., 2005; Ceriani, 1996; Ferrero, 1980). At the operational level, the economic person is represented by the administrative body, which centralises the decision-making power or is the leader of the decision-making process (Cavalieri and Ranalli, 1995; Onida, 1965 and 1960); that is, the subject that determines the actions of the company (Farneti, 2007) and affects the top management model, which is the expression of its work (Bruni, 1990).

Another criterion used to qualify a business as a family business is the number of family members involved in its management. In particular, a business must be owned and managed by members belonging to one or more families (Stern, 1986); or there must be at least two family generations involved in its management (Ward, 1988), also with the aim of conveying managerial skills to the next generation (Churchill and Hatten, 1987). The crite-

[1]According to Kay (1993), the other two are "corporate architecture" and "innovation".

rion of the involvement of family members in the management has recently been emphasised (Di Mascio, 2008).

More recently, other scholars have established the minimum threshold of family members owning 20% of the capital as the criterion for classifying an enterprise as a family business (Villalonga and Amit, 2006); this makes it possible for the family to have the power to appoint members to governing bodies. According to other authors, an enterprise is classified as a family business if (Chua-Chrisman et al., 1999):

- at least 50% of the shares are owned by the family, and the family is responsible for the management of the company;
- or at least 50% of the shares are owned by the family, the enterprise is non-family-run, but the CEO perceives it as a family business;
- or family ownership is less than 50%, the company is family-run, the CEO perceives it as a family business and a venture capital or investment company owns at least 50% of the shares.

In recent years, the definitions for family business have been based on a series of criteria related to ownership and control (Smyrnios-Romano et al., 1998). In our work we use mixed criteria in order to identify the family business sample, that is:

- a control participation of capital by the family or families;
- the presence on the board of at least one family member.

Our criteria reflect the Italian context, where there is a long tradition of family businesses, in which there is a control participation by the family and a presence in the board of the family itself; for example, 'FIAT spa' was founded in 1899 and is now controlled by the Agnelli family through the Giovanni Agnelli & C.S.a.p.A, and John Elkann (the nephew of Giovanni Agnelli) is the executive president of the board.

Despite their multiplicity, all definitions include a strong interaction between the family, considered as an entity, its members and the activities performed by the business (Miglietta, 2009). The relations between family and enterprise are a subject of significant scientific consideration: their objectives and visions differ (Pieper and Klein, 2007). On the one hand, the family has as its main objective the maintenance and support of its members, and this is the reason the family invests its own resources in the business activities, based on entrepreneurial values (Bertini, 1995; Coda, 1988), which are also inspired by tradition, unity and affection (Ward, 1997). On the other hand, the enterprise aims at satisfying human needs expressed by the market (Ferrero, 1980): the counter-value from the sale of goods and services is used for the remuneration of the production factors used, including the employees' and the employer's labour force.

Both the family and the business are motivated by a series of shared values, among which is the continuity of the economic activity (Coda, 1988; Giannessi, 1960; Zappa, 1957; Onida, 1954) and the creation of value (Catuogno, 2006; Cuccurullo, 2006). This results in a considerable synergy between the family and the enterprise (Corbetta, 1995) as well as in the necessity for the management to share the family's values, in order to create a corporate culture (Schein, 1985) instrumental to entrepreneurial success (Montemerlo, 2009). In addition to these values, the trust in the relations between the family members on the one side and between the family and the management on the other is considered by scholars as an intangible resource, which is crucial for guaranteeing the survival of the business (Welter and Smallbone, 2006; Steiner, 2001).

Corporate Governance Theoretical Framework

As underlined in the previous section, the different criteria used by the literature in order to identify family businesses, in some way, concern corporate governance topics. For this reason, it is necessary to analyse which are the main contributions concerning governance in the literature on family businesses. In particular, literature on corporate governance focuses on the application of theories and models in family businesses (Del Bene, 2005; Montemerlo, 2000; Neubauer and Lank, 1998; Magretta, 1998; Aronoff and Ward, 1996; Corbetta and Dematté, 1993; Fama and Jensen, 1983).

Among the several theories that have been developed to deal with corporate governance issues, the most relevant and renowned are Agency Theory, Resource Dependency Theory and Stewardship Theory. It is important to understand their focus, their use of governance and how these theories can be applied in the governance of family businesses, as shown in the following table (Table 1).

Agency Theory states that the primary function of the board of directors is to monitor the actions of agents in order to protect the principal's interests (Prendergast, 2000; Rasmusen, 1987; Fama and Jensen, 1983; Fama, 1980; Shavell, 1979). In particular, the board of directors should monitor the manager's actions to protect the owners' interests from managerial opportunism (Kaplan and Atkinson, 2002; Nalbantian, 1987). As a consequence, the presence of a high number of independent members (Prencipe and Bar-Yosef, 2011) is positively related to family performance, even if in family businesses the agency problem is less intense because property rights are largely restricted to the agents' decisions. In addition, family businesses have less agency costs because most of the owners, managers and board members belong to the same family. In family businesses, agency problems arise due to the controlling shareholders, who do not always act in the interests of the non-controlling shareholders, and this leads to a potential expropriation of minority shareholders (La Porta-Shleifer et al., 1999).

According to Resource Dependency Theory (Pfeffer, 1982), continuity depends on the business ability to access and control environmental resources such as labour and relational resources, which can help the business to reduce environmental uncertainty. The board can facilitate the acquisition of resources which are crucial to the success of the business, and its role thus becomes determinant. Resource Dependency Theory asserts the possibility of managing and controlling resource scarcity within organisations through interdependencies with other organisations in their environment, focusing on the strategic actions of organisations (Mustakallio, 2002). In particular, different forms of governance structures such as inter-firm or intra-firm networks

Table 1: Corporate Governance theoretical framework

Theoretical framework	Focus	Application in governance	Application in the governance of family businesses
Agency Theory	Minimisation of problems caused by the separation of ownership and control	Relationships between principal and agents, usually among owners and management	Effects of the separation between ownership and managerial control
Resource Dependency Theory	Political approach to manage interdependencies between organisations	Networks, inter-company, intra-company governance	Power and resource aspects of relationships in family businesses
Stewardship Theory	Altruism, good steward, managers are trustworthy	No alignment problems, stewards, relational governance	Effects of no alignment problems between owners and managers

Source: Mustakallio, 2002.

are used to manage the dependency of critical resources. Resource Dependency Theory underlines two main elements (Pfeffer, 1982):
the necessity for the organisation to respond to the demands of the organisation that controls the critical resources (the issue of external constraints);

the necessity for managers to manage their external dependencies to ensure the survival of the organisation and also to acquire greater independence and freedom from external constraints.

Stewardship Theory (Alas and Tafel, 2006; Tricker, 1999; Davis-Schoorman et al., 1997; Barney, 1990; Donaldson, 1990a and 1990b) states that fewer outside members are needed in the board of directors, and that the main role of the board is to support the management (Del Bene, 2005). Managers are motivated by collectivistic behaviour and internal directors or affiliated directors lead the business to higher performance. Stewardship Theory identifies situations in which managers behave as stewards and gain higher advantage from pro-organisational and collectivistic behaviour rather than from individualistic and self-serving behaviour as presumed by Agency Theory.

This theory stresses the fact that the board structure should mainly include internal employees or affiliated outsiders who are mutually linked to the organisation by family and social ties (Sundaramurthy and Lewis, 2003). Stewardship Theory stresses the benefits of the duality between CEO and the chair, a structure that would be deemed to be dysfunctional in Agency Theory. From these different theories, the direct relationship between the composition of the board and performance of the business does not emerge clearly; this research therefore needs to investigate such a relationship in consideration of the two types of boards, these being family members and independent members, and needs to identify a theory that can explain the results in the context of a family business.

Family Firms Performance Evaluation

Most studies have focused their attention on the relationship between corporate governance and corporate performance. Actually, in the literature there are two perspectives, the macroeconomic and the microeconomic perspective (Kraus and Britzelmaier, 2011). The macroeconomic perspective usually correlates different corporate governance systems with several parameters related to the competitiveness of the companies in their context, but in our study we follow the microeconomic perspective, which assumes that companies with an excellent corporate governance structure outperform and are more successful than those that lack good corporate governance (Quick-Wiemann et al., 2009). Usually, the success of a company is measured by its shareholder value, as corporate governance mainly characterises listed corporations; in particular, the shareholder value is considered to be influenced by the behaviour of the cash flow and the cost of capital (Kraus and Britzelmaier, 2011).
Most past studies have measured corporate governance using specific indicators, such as board composition. More recently, institutions have begun to suggest introducing new and more comprehensive measures of corporate governance (Klein-Shapiro et al., 2005). Some authors have identified general indices of governance (Durnev and Kim, 2005; Gompers-Ishii et al., 2003; Manry and Strangeland, 2003; Drobetz-Schilhofer et al., 2003) and others have correlated these indices with performance (Klein-Shapiro et al., 2005).

Some authors have analysed the correlation between family control and the performance of family businesses. The majority of the research has focused on financial performance (Anderson and Reeb, 2003; Monsen, 1969; Monsen-Chiu et al., 1968), but other studies underline the correlation with non-financial indicators (Zellweger and Nason, 2008).
A comprehensive background review (Jaskiewicz, 2006) underlines that the most commonly used performance indicator for listed

companies is stock market performance or Tobin's Q, while, for non-listed companies the indicators mainly used are ROE (return on equity), ROA (return on assets) or gross profit margin (Zellweger and Nason, 2008).

Many studies have underlined the differences between family firms and non-family firms in their results (Allouche-Amann et al., 2008; Astrachan and Shanker, 2003; Allouche and Amann, 2000). Some authors assert the neutrality of family ownership for economic performance, in absolute terms or in terms related to the share of capital held by the family (Sciascia and Mazzola, 2008). Other analyses have found that the economic performance of large listed family businesses is higher than the economic performance of public non-family companies; in addition, the performance achieved by medium-large sized family businesses, both listed and non-listed, is higher compared with non-family companies of the same size (Anderson and Reeb, 2003). Some studies have highlighted that the best economic performances were achieved by family companies, listed or non-listed, led by their founders (Cucculelli and Micucci, 2008; Barontini and Caprio, 2006; Villalonga and Amit, 2006; Adams-Almeida et al., 2003), while other research focused on the analysis of the performance achieved by family businesses being in their second or third generation, and observed a destruction of value (Villalonga and Amit, 2006; Pérez-Gonzàlez, 2001). Further studies showed that the presence of a family in the ownership negatively affects business performance (Volpin, 2002; Faccio-Lang et al., 2001). One Italian study underlines the presence of conflicting results in the literature on family firms, clarifying that there is a non-linear relationship between the presence of the family in the ownership of the firm and the family involvement in the management on the one side, and performance on the other (Sciascia and Mazzola, 2008).

A previous Japanese study (Allouche-Amann et al., 2008) uses a comparative research model in order to weigh family firm and non-family firm performance in Japan. In this article one family and one non-family business, which match in both size and industry category, are compared. This method eliminates the influence of the industry and size variables on the performance of the firms, clarifying the family control effect. For each pair, different financial performance indicators are used, such as ROA, ROE and ROI, in addition to non-profit indicators, such as total debts/total capital, long-term debt/total capital, current ratios and quick ratio.

Methodology

The Sample

This study is based on a sample of listed Italian firms included in the FTSE MIB and STAR indexes. FTSE MIB is the main benchmark index of the Italian equity markets and it captures about 80% of the domestic market capitalisation. The FTSE MIB measures the performance of forty primary Italian companies with high liquidity and seeks to replicate the broad sector weights of the Italian stock market. The STAR index by contrast, is dedicated to seventy-three medium-sized companies from the Italian equity markets, with market capitalisation of between 40 million and 100 million euros and respecting the followings features: high transparency and communicativeness; high liquidity (no less than 35% float) and corporate governance aligned to international standards.

Our aim, in considering this sample, was to test the research questions on companies that represent Italian excellence in both large (FTSE MIB) and medium-sized companies (STAR). When the size of the companies is a significant variable with important effects on some managerial processes, we analyse the first (FTSE MIB) and the second sample (STAR) separately.

Considering the sample of listed Italian firms in the FTSE MIB and STAR indexes, we excluded banks, insurance and other financial companies, as we wanted to focus on the industrial sector in order to achieve satisfactory homogeneity. The study is intentionally limited to Italian companies.

In the final research, eighty companies were selected and broken down into family (53) and non-family (27) according to the previously illustrated criteria (a control participation in the capital by the family or families and the presence on the board of at least one family member) as shown in the following table (Table 2).

It is interesting to observe that on the Italian Stock Exchange about 66% of the companies on the FTSE MIB and STAR indexes are family firms. This is due to the fact that the STAR index comprises medium-sized companies (80%), and the percentage of family firms is also significant in the FTSE MIB index (36%).

Research Questions and Method

The main goal of this study is to analyse the relationship between board composition and performance, both in listed Italian family and non-family firms, underlining how the importance of the family variable affects performance in consolidated financial statements. The analysis considers 5 years (from 2006 to 2010).

In our analysis of the composition of the board, we distinguish between family members and independent members. We consider family firms those companies with at least one family member on the board. An independent member is a non-executive board member who has not recently established or maintained any direct or indirect relationship with the company or people related to it which would in any way influence the independence of their opinions.

To identify family and non-family firms we use data included in the Corporate Governance Report published on the Borsa Italiana website supported by the business profile. The Corporate Governance Report was also used to identify the number of independent members.

To reach the declared goals, three main research questions were formulated:

- RQ1: Does the family have a positive impact on performance?
- RQ2: Is the presence of independent members more widespread in family firms or in non-family firms?
- RQ3: Does the presence of independent members on the board positively influence performance?

To answer RQ1, the most relevant financial and economic ratios between family and non-family firms were compared.

To answer RQ2, it was sufficient to calculate a percentage of the independent members on the board, while the Pearson Correlation Ratio was used to identify a positive or a negative relation between firm performance and board composition to answer RQ3.

About the Pearson ratio (*p*) it is also important to underline that:

- if $p > 0$ there is a direct correlation;
- if $p = 0$ there is no correlation;
- if $p < 0$ there is an indirect correlation;

Table 2: The Sample

	FTSE MIB	%	STAR	%	Total	%
Family firms	9	36%	44	80%	53	66%
Non-family firms	16	64%	11	20%	27	34%
Total	25	100%	55	100%	80	100%

Source: author's calculations

- if $0 < p < 0.3$ the correlation is weak;
- if $0.3 < p < 0.7$ the correlation is moderate;
- if $p > 0.7$ the correlation is strong.

Findings and Results

About *RQ1 – Does the family have a positive impact on performance?* – the most relevant financial and economic indicators were compared between family and non-family firms.
In terms of economic performance, we consider the following indicators supported by the literature (Higgins, 2007; Ferrero-Dezzani et al., 2003; Ingram-Albright et al., 2002; Value, 2001; Helfert, 1997; Foster, 1986): ROE, ROA, ROI (return on investment) and ROS (return on sales). In terms of financial performance, the following indicators, supported by the literature, were also analysed: liquidity ratio, current ratio, debt ratio and fixed asset coverage ratio (Higgins, 2007; Baginski and Hassel, 2004; Ferrero-Dezzani et al., 2003; Giroux, 2003; Meigs-Williams et al., 2001; Value, 2001; Helfert, 1997; Foster, 1986).

In the following table, we compare the economic performance between family and non-family firms (Table 3).

After analysing economic performance, in particular focusing attention on the mean of each indicator (whose trend is confirmed by the median), it is evident that:
- non-family firms outperform in terms of ROE (+4.69%), ROA (+0.15%) and ROS (+1.61%) compared with family firms; in particular, they evidently excel in terms of the ROE indicator also due to the leverage effect of the high level of debt ratio;
- family firms outperform in the core business, shown by ROI (+0.70%) compared with non-family firms.

In the following table, we compare economic performance between family and non-family firms, with the differences between FTSE MIB and STAR indexes (Table 4).

After analysing the economic performance in family and non-family firms comparing FTSE MIB and STAR it emerges that:
- non-family firms on the FTSE MIB outperform in terms of ROE (+6.26%), ROA (+0.19%) and ROS (+1.26%) compared to family firms;
- family firms on the FTSE MIB outperform in terms of ROI (+0.28%) compared with non-family firms;
- family firms on the STAR outperform in terms of ROE (+2.24%), ROA (+2.80%), ROI (+5.51%) and ROS (+3.41%) compared with non-family firms.

Concluding our analysis of economic performance, it is possible to state that:
- in general family firms outperform in the core business;
- the size, beyond the family, is a relevant variable influencing performance; indeed, the STAR family firms (which are medium companies) outperform in terms of ROE, ROA, ROI (return on investment) and ROS (return on sales) compared with STAR non-family firms.

In the following table we compare financial performance between family and non-family firms (Table 5).

After analysing financial performance, in particular focusing on the mean of each indicator (whose trend is confirmed by the median), it is evident that family firms outperform in terms of liquidity ratio (+0.10), current ratio (+0.31), debt ratio (-0.82) and fixed asset coverage ratio (+0.63) compared with non-family firms; in particular, it should be noted that negative debt exposure emerges due to a major percentage of equity on the total financial sources.

In the following table, we compare financial performance between family and non-family firms, with the differences between FTSE MIB and STAR indexes (Table 6).

After analysing the economic performance in family and non-family firms on the FTSE

Table 3: Comparison of economic performance between family and non-family firms

	Family firms	Non-family firms
Companies (No.)	53	27
Companies (%)	66.25%	33.75%
Roe 2010	6.48	8.26
Roe 2009	0.94	10.35
Roe 2008	6.91	13.76
Roe 2007	12.09	13.71
Roe 2006	10.68	14.48
Roe - mean (2006-2010)	7.42	12.11
Roe - median (2006-2010)	6.91	13.71
Roe - standard deviation (2006-2010)	4.35	2.69
Roa 2010	5.76	6.05
Roa 2009	3.41	6.15
Roa 2008	6.79	7.37
Roa 2007	9.17	8.04
Roa 2006	9.33	7.59
Roa - mean (2006-2010)	6.89	7.04
Roa - median (2006-2010)	6.79	7.37
Roa - standard deviation (2006-2010)	2.48	0.89
Roi 2010	8.50	7.88
Roi 2009	5.32	7.43
Roi 2008	10.62	11.03
Roi 2007	12.75	11.11
Roi 2006	12.11	8.36
Roi - mean (2006-2010)	9.86	9.16
Roi - median (2006-2010)	10.62	8.36
Roi - standard deviation (2006-2010)	3.02	1.77
Ros 2010	7.00	9.55
Ros 2009	4.03	7.26
Ros 2008	7.04	9.26
Ros 2007	9.94	10.69
Ros 2006	9.86	9.13
Ros - mean (2006-2010)	7.57	9.18
Ros - median (2006-2010)	7.04	9.26
Ros - standard deviation (2006-2010)	2.45	1.24

Source: own calculations based on AIDA database

Table 4: FTSE MIB and STAR: comparison of economic performance between family and non-family firms

	FTSE MIB Family firms	FTSE MIB Non-family firms	STAR Family firms	STAR non-family firms
Companies (No.)	9	16	44	11
Companies (%)	36%	64%	80%	20%
Roe 2010	8.63	14.33	6.03	-0.58
Roe 2009	5.41	16.85	0.02	1.48
Roe 2008	13.32	20.73	5.69	4.25
Roe 2007	19.07	18.19	10.90	7.23
Roe 2006	10.32	17.97	10.74	9.84
Roe - mean (2006-2010)	11.35	17.61	6.68	4.44
Roe - median (2006-2010)	10.32	17.97	6.03	4.25
Roe - standard deviation (2006-2010)	5.18	2.32	4.47	4.21
Roa 2010	6.95	8.40	5.50	2.64
Roa 2009	6.46	9.41	2.78	1.69
Roa 2008	9.79	10.12	6.22	3.61
Roa 2007	11.93	9.93	8.70	5.32
Roa 2006	11.36	9.59	9.00	4.94
Roa - mean (2006-2010)	9.30	9.49	6.44	3.64
Roa - median (2006-2010)	9.79	9.59	6.22	3.61
Roa - standard deviation (2006-2010)	2.50	0.67	2.55	1.52
Roi 2010	9.63	11.57	8.26	3.07
Roi 2009	8.82	12.18	4.58	1.26
Roi 2008	13.94	15.51	10.04	5.20
Roi 2007	18.61	15.14	11.67	4.79
Roi 2006	16.53	11.76	11.31	3.99
Roi - mean (2006-2010)	13.51	13.23	9.17	3.66
Roi - median (2006-2010)	13.94	12.18	10.04	3.99
Roi - standard deviation (2006-2010)	4.25	1.92	2.89	1.57
Ros 2010	9.60	14.29	6.42	3.38
Ros 2009	9.82	12.55	2.84	1.45
Ros 2008	13.48	13.95	5.81	3.64
Ros 2007	15.22	15.12	9.01	5.15
Ros 2006	16.14	14.64	8.79	2.25
Ros - mean (2006-2010)	12.85	14.11	6.58	3.17
Ros - median (2006-2010)	13.48	14.29	6.42	3.38
Ros - standard deviation (2006-2010)	3.03	0.97	2.52	1.42

Source: own calculations based on AIDA database

Table 5: Comparison of financial performance between family and non-family firms

	Family firms	Non-family firms
Companies (No.)	53	27
Companies (%)	66.25%	33.75%
Liquidity ratio 2010	1.16	1.07
Liquidity ratio 2009	1.20	1.07
Liquidity ratio 2008	1.15	1.03
Liquidity ratio 2007	1.28	1.26
Liquidity ratio 2006	1.38	1.25
Liquidity ratio - mean (2006-2010)	1.24	1.14
Liquidity ratio median (2006-2010)	1.20	1.07
Liquidity ratio - standard deviation (2006-2010)	0.10	0.11
Current ratio 2010	1.62	1.30
Current ratio 2009	1.64	1.30
Current ratio 2008	1.61	1.25
Current ratio 2007	1.71	1.48
Current ratio 2006	1.81	1.50
Current ratio - mean (2006-2010)	1.68	1.37
Current ratio - median (2006-2010)	1.64	1.30
Current ratio - standard deviation (2006-2010)	0.08	0.11
Debt ratio 2010	2.93	3.44
Debt ratio 2009	2.95	3.50
Debt ratio 2008	2.93	3.80
Debt ratio 2007	2.72	3.61
Debt ratio 2006	2.62	3.89
Debt ratio - mean (2006-2010)	2.83	3.65
Debt ratio - median (2006-2010)	2.93	3.61
Debt ratio - standard deviation (2006-2010)	0.15	0.19
Fixed Asset Coverage ratio 2010	1.77	1.12
Fixed Asset Coverage ratio 2009	1.68	1.05
Fixed Asset Coverage ratio 2008	1.72	1.01
Fixed Asset Coverage ratio 2007	1.89	1.13
Fixed Asset Coverage ratio 2006	1.76	1.36
Fixed Asset Coverage ratio - mean (2006-2010)	1.76	1.13
Fixed Asset Coverage ratio - median (2006-2010)	1.76	1.12
Fixed Asset Coverage ratio - standard deviation (2006-2010)	0.08	0.14

Source: own calculation based on AIDA database

Table 6: FTSE MIB and STAR: comparison of financial performance between family and non-family firms

	FTSE MIB family firms	FTSE MIB non-family firms	STAR family firms	STAR non-family firms
Companies (No.)	9	16	44	11
Companies (%)	36%	64%	80%	20%
Liquidity ratio 2010	1.22	1.19	1.15	0.89
Liquidity ratio 2009	1.38	1.25	1.17	0.81
Liquidity ratio 2008	1.04	1.10	1.17	0.94
Liquidity ratio 2007	0.93	1.02	1.34	1.60
Liquidity ratio 2006	1.11	0.97	1.42	1.63
Liquidity ratio - mean (2006-2010)	1.14	1.11	1.25	1.18
Liquidity ratio - median (2006-2010)	1.11	1.10	1.17	0.94
Liquidity ratio - standard deviation (2006-2010)	0.17	0.12	0.12	0.40
Current ratio 2010	1.64	1.44	1.61	1.10
Current ratio 2009	1.82	1.51	1.60	1.01
Current ratio 2008	1.50	1.33	1.63	1.15
Current ratio 2007	1.31	1.24	1.77	1.83
Current ratio 2006	1.51	1.22	1.85	1.88
Current ratio - mean (2006-2010)	1.56	1.35	1.69	1.39
Current ratio - median (2006-2010)	1.51	1.33	1.63	1.15
Current ratio - standard deviation (2006-2010)	0.19	0.13	0.11	0.42
Debt ratio 2010	3.29	3.34	2.86	3.60
Debt ratio 2009	3.17	3.47	2.90	3.55
Debt ratio 2008	3.44	3.90	2.83	3.65
Debt ratio 2007	3.07	3.86	2.66	3.25
Debt ratio 2006	2.67	3.85	2.61	3.95
Debt ratio - mean (2006-2010)	3.13	3.68	2.77	3.60
Debt ratio - median (2006-2010)	3.17	3.85	2.83	3.60
Debt ratio - standard deviation (2006-2010)	0.29	0.26	0.13	0.25
Fixed Asset Coverage ratio 2010	1.19	1.20	1.89	1.00
Fixed Asset Coverage ratio 2009	1.15	1.15	1.79	0.91
Fixed Asset Coverage ratio 2008	1.03	1.09	1.85	0.89
Fixed Asset Coverage ratio 2007	1.23	1.05	2.00	1.24
Fixed Asset Coverage ratio 2006	1.13	1.05	1.85	1.78
Fixed Asset Coverage ratio - mean (2006-2010)	1.14	1.11	1.88	1.17
Fixed Asset Coverage ratio - median (2006-2010)	1.15	1.09	1.85	1.00
Fixed Asset Coverage ratio - standard deviation (2006-2010)	0.08	0.07	0.08	0.37

Source: own calculations based on AIDA database

MIB and STAR indexes, the following features emerge:

- family firms in the FTSE MIB index outperform non-family firms in terms of liquidity ratio (+0.03), current ratio (+0.21), debt ratio (-0.55) and fixed asset coverage ratio (+0.03);
- family firms in the STAR index outperform non-family firms in terms of liquidity ratio (+0.07), current ratio (+0.30), debt ratio (-0.83) and fixed asset coverage ratio (+0.71).

Based on financial performance, it is possible to state that:

- in general, family firms financially outperform non-family firms;
- after analysing the financial aspects, the size of the company is not a relevant variable.

In regard to *RQ2 – Is the presence of independent members more widespread in family firms or in non-family firms?* – we compared independent members in family and non-family firms (Table 7).

It is possible to state, focusing on the mean of the data (whose trend is confirmed by the median), that the number of independent members in the board is always higher in non-family firms than in family firms, both on the FTSE MIB and STAR indexes. In our opinion, this is due to the family behaviour, which strives to decrease the number of independent members on the board to a minimum. The purpose here is probably to reduce the external interferences in the decision-making process, especially in medium-sized companies (STAR index).

In regard to *RQ3 – Does the presence of independent members on the board positively influence performance?* – we analysed the presence of independent members on the board and economic-financial performance (Table 8).

As shown by the table above, the main evidence suggests the following:

- in family firms, there is no correlation between independent members and economic performance, while there is an indirect weak correlation between independent members and financial performance;
- in non-family firms, there is a weak correlation between independent members, ROA and ROS, while the correlation is moderate if we take into account ROI and ROE. There is no correlation between independent members and liquidity and current ratios; the correlation is weak between independent members and debt ratio, while there is an indirect weak correlation between independent members and fixed asset coverage ratio.

Conclusion

The main goal of this study was to analyse the impact of board composition on performance in listed Italian firms comparing the impact between family and non-family firms.

As mentioned above, the formal definition of family firms we used in this work is:

- a control participation in the capital held by the family or families;
- the presence on the board of at least one family member.

Therefore, the possible board compositions we considered are:

- a board with a family member;
- a board without a family member.

In the case of a board composed by at least one family member, we always found a control participation in the capital held by the family or families in our sample. Due to this consideration, we can say that a company in which the board has a family member can be defined as being a family firm; conversely, in our sample, a company without a family member never has a control participation and, for this reason, is classifiable as a non-family firm.

Table 7: Independent members: comparison between family and non-family firms

	Family firms	Non-family firms	FTSE MIB family firms	FTSE MIB non-family firms	STAR family firms	STAR non-family firms
Companies (No.)	53	27	9	16	44	11
Companies (%)	66.25%	33.75%	36%	64%	80%	20%
Independent Members (2010)	35.09%	47.23%	38.46%	50.71%	34.55%	40.69%
Independent Members 2009)	34.67%	46.65%	39.64%	50.08%	33.86%	40.93%
Independent Members (2008)	34.70%	44.31%	37.33%	49.60%	34.21%	37.10%
Independent Members (2007)	36.33%	43.02%	46.16%	48.04%	34.46%	36.17%
Independent Members (2006)	35.58%	43.43%	45.30%	47.92%	33.84%	36.44%
Independent Members - mean (2006-2010)	35.28%	44.93%	41.38%	49.27%	34.18%	38.27%
Independent Members - median (2006-2010)	35.09%	44.31%	39.64%	49.60%	34.21%	37.10%
Independent Members - standard deviation (2006-2010)	0.69%	1.91%	4.07%	1.24%	0.33%	2.35%

Source: own calculations based on 'Corporate Governance' report

Table 8: Correlation between independent members and economic-financial performance

Indicators	Independent Members (mean 2006-2010) (family firms)	Independent Members (mean 2006-2010) (non-family firms)
ROA (mean 2006-2010)	-0.03	0.24
ROI (mean 2006-2010)	0.04	0.42
ROS (mean 2006-2010)	-0.03	0.15
ROE (mean 2006-2010)	0.03	0.32
Liquidity Ratio (mean 2006-2010)	-0.23	0.02
Current Ratio (mean 2006-2010)	-0.30	0.04
Debt Ratio (mean 2006-2010)	0.31	-0.10
Fixed Asset Coverage Ratio (mean 2006-2010)	-0.10	-0.14

Source: own calculations based on AIDA Database and 'Corporate Governance' report

Referring to *RQ1*, our analysis reveals that family firms (a board with at least one family member) outperform non-family firms (without a family member) in economic and financial performance, showing the ability of the family to access and control environmental resources, as stated in Resource Dependency Theory.

Indeed, family firms outperform in the core business, as underlined by the ROI analysis. To be more precise, the first factor of ROI – the ROS index – is better in family firms than in the others especially on the STAR index, as the smaller the firm the greater the direct control by the family on all the business variables (internal efficiency, external efficiency, competitiveness, selling mix, production capacity effectiveness, operating leverage, etc.). The behaviour of the second factor of ROI – capital turnover – not explicitly calculated in our research, but easily understandable through a mathematical deduction, outperforms in family firms than in others, both on the FTSE MIB and STAR indexes, showing the greater negotiating power of family firms, which then has an important effect on liquidity. Non-family firms outperform family firms in terms of ROA, due to the incidence of non-operative areas in the company (financial and extraordinary).

In terms of financial performance, indeed, family firms outperform on all the indexes considered by the analysis, especially with regard to liquidity and current ratios.
In regard to financing composition, family firms have a lower debt ratio, that is, they are more financially independent of external parties. This consideration can explain why in non-family firms ROE is greater than in family firms, due to the leverage effect.

Next we analysed another aspect of board composition – the presence of independent members. Particularly, referring to *RQ2*, our analysis reveals that the presence of independent members that should guarantee effective corporate governance with an important effect on performance is more widespread in non-family firms, both on the FTSE MIB and STAR indexes, whereas greater economic and financial performance is not demonstrated.

To better understand this finding from an analytical perspective, we analysed the presence of independent members on the board (both in family and non-family firms) to identify how this correlated with economic and financial performance. Referring to *RQ3*, it emerges that there is no correlation between independent members and economic performance in family firms, while there is an indirect, weak correlation between independent members and financial performance. Instead, in non-family firms, there is a weak correlation between independent members and ROA and ROS, while the correlation is moderate regarding ROI and ROE. Furthermore, there is no correlation between independent members and liquidity and current ratios; the correlation is weak between independent members and debt ratio, while there is an indirect weak correlation between independent members and fixed asset coverage ratio. Independent members are not a leverage variable to improve performances either in family or in non-family firms.

In conclusion, this study contributes to the literature on family corporate governance and shows that the family role has a positive effect on firm performance, underlining the importance of the family members. The family board members have an important relation with firm performance, probably helping the firms to open communication between the family and the firm. In addition, we discovered that the structure of the board of directors influences performance in Italian listed companies, even if the number of independent members is not significant.

Limitations and Implications

Our research has some limitations that can be summarised as follows:
- the sample considered;
- the further classification of companies within the sample.

To be more precise, referring to the first limitation, we have to say that:
- few listed firms have been considered, as only companies listed on the FTSE MIB and STAR indexes have been included;
- non-listed companies have not been included in the sample;
- non-Italian companies have not been compared with Italian.

Instead, referring to the second limitation, we have to underline that:
- the selected firms belong to different sectors, consequently it is possible that the economic and financial ratios are influenced by that particular sector;
- the companies of the sample differ in size and this can lead to a misunderstanding of the actual determinants of performance.

Finally, to improve our method we could adopt an econometric model.
Further research will have the aim of eliminating these limitations. In particular, we would like to increase the number of companies in the sample, considering all listed companies on the Italian stock market as well as non-listed companies. It would also be interesting to compare Italian with non-Italian listed companies.

Furthermore, in future we are going to adopt a matched-pair design (Bowen-Noreen et al., 1981), which will systematically compare family businesses and non-family businesses that have the same profile, of the same size and from the same industry. This approach neutralises the most important potential factors of performance variance outside of family control (Allouche-Amann et al., 2008).

In addition, we would like to consider Corporate Social Responsibility as an important key to success, according to a company's ethical values and verifying how this critical factor is considered in family firms (Kooskora, 2011).

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Tax Compliance and Tax Attitudes: The Case of Estonia

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The objective of this paper is to explore the compliance of individuals in Estonia with the legal obligation to pay taxes. What are people's attitudes and compliance toward paying taxes and how are compliance and individual characteristics connected? These questions are explored through a quantitative study and questionnaire to ascertain attitudes towards taxpayers paying their taxes. The outcomes of the research indicated that general attitudes towards the state and taxpayer trust in the state influence compliance with the obligation to pay taxes. The research also revealed that education plays an essential role in developing the tax behaviour of individuals.

Keywords: tax morale; tax compliance, tax evasion, tax avoidance, tax authority, taxpayer, trust, education

Introduction

A central question in the tax compliance literature is why do so many people pay their taxes. In view of the potential economic benefit of not paying taxes, what factors influence an individual to pay the obligated amount of taxes in a timely manner? Tax compliance depends on a number of factors including economic, political, social and psychological factors.
These questions along with numerous related factors, including tax evasion, which is problematic in many countries, have prompted research on tax compliance as part of the developing field of economic psychology.
Non-compliance with tax obligations is primarily associated with tax evasion or tax cheating. According to the OECD (Organization for Economic Cooperation and Development) approach, the concept of the non-compliant individual is broader and specified as follows: when a taxpayer fails to meet any of the primary taxpayer obligations, they may be considered to be non-compliant. Taxpayer obligations include registration in the system, timely submission of the required taxation information, reporting complete and accurate information and the payment of taxation obligations (OECD, 2009). Therefore, the term "non-compliant" shall cover, in addition to tax evasion, also intentional or unintentional failure to pay taxes correctly (Webley et al., 2010: 2).

The measurement of tax morale is not free of bias. The measurement of tax evasion and tax compliance both have certain problems. Gathering information relevant to tax compliant behaviour is complicated. Using different methods of measurement, it is possible to find different answers to the same question. We cannot prioritize or restrict factors that influence tax behaviour on the basis of certain characteristics because it is practically impossible to do so. One factor may be closely connected with another factor and these can be economic, political or social factors. Because of the multiplicity of factors and the many possible ways of interpreting them, it is difficult to obtain a clear answer to the question of what influences the taxpayer to pay taxes.

During recessions, countries usually implement tax increases, tax exemptions, decrease

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concessions or reinforce coercive measures as compensation for the low receipt of tax revenues. However, if insufficient attention is applied to the social factors and governments in recession only deal with tax increases and reinforcing coercive measures, there will be increased deviance towards the payment of taxes and the common tax compliance of people will ultimately be affected negatively.

During and after recession, the collection of revenue to cover the costs necessary for the state is a real challenge for many countries (Estonia included). Tax arrears increased by 91% in Estonia during the economic downturn of 2008–2010. Tax arrears reveal only compliance with the obligation to pay taxes. General compliance with the obligation to pay taxes is influenced by tax arrears, tax evasion and tax avoidance.

In the literature published since 1960, attention has been drawn to the fact that compliance with the obligation to pay taxes is weaker in countries that have been under foreign annexation for many years (Schmölders, 2006: 170). More recent research, conducted by Frey and Torgler (2007), has stated that compliance with the obligation to pay taxes is lower in Estonia and in other former Soviet countries than in Central Eastern Europe (i.e., Hungary, the Czech Republic, Slovenia, Bulgaria, Croatia and Poland). The focus of this paper was primarily based upon evaluations of how democracy influences payments of taxes and how low compliance in the member states of the former Soviet Union could be explained by the institutional crises after the collapse of the communist regime. Studies show that the quality of political institutions (political stability, government effectiveness, rule of law and control of corruption) has a strong observable effect on tax morale (Frey and Torgler, 2007: 156).

Referring to the study by Frey and Torgler (2007), compliance with the obligation to pay taxes is low in Estonia compared with Central and other Eastern European countries (i.e., Hungary, the Czech Republic, Slovenia, Bulgaria, Croatia and Poland), and it can be said that tax arrears are a rapidly growing feature; therefore, we can raise the following questions: what kinds of attitudes do individuals in Estonian society have towards payment compliance, how high or low is the compliance with the obligation to pay taxes, and how are compliance with the obligation to pay taxes and individual characteristics linked?

Motivated by these issues, the objective of this paper is to explore the compliance of individuals with the obligation to pay taxes. The author's goal is to assess the compliance of individuals on the basis of a single person's attitude, to examine if voluntary compliance could be a challenge and to engage in the debate about what options may be available for enhancing voluntary compliance. Since people (as individuals or as representatives of legal persons) actually shape the general tax behaviour of a society, this paper focuses on the pattern of tax related behaviour among individuals and their attitudes.

What are people's attitudes and compliance toward paying taxes and how are compliance and individual characteristics connected? These questions are studied in this quantitative research work and the answers subsequently presented. To achieve the objective of this research project, a questionnaire on attitudes towards the compliance with the obligation to pay taxes was presented to taxpayers.

In prior research projects, the focus was on assessment and the comparison of tax compliance in independent countries with stable histories, but the author wishes to improve upon previous results by using the case of a post-socialist country to determine the peculiarities of tax compliance characteristic of a country that has been annexed for a long time[1].

The paper is organized as follows. Section 2 provides a brief overview of the findings of the theoretical and empirical literature on

1 Soviet annexation 1940–1991

tax morale. Section 3 deals with the research method, particularly with the participants, design and procedure. Section 4 describes the data and explains the findings of the study. The paper concludes by discussing options for future research. Data from the surveys used in this research project are available from the author.

Tax Morale: Theoretical Background

It is commonly considered that people who receive public services from the state are aware of the duty of fairness to adhere to the legal acts of the state and to contribute in the form of taxes (Hart, 1996). Generally, nobody likes to pay taxes. What are the factors that influence a person's decision to pay or not to pay taxes?

The classic model is simple. It assumes that behaviour is influenced by factors such as the tax rate and penalty rates as well as the probability of detection (Allingham and Sandmo, 1972: 338). Surveys that evaluate tax compliance often focus on the model of rational behaviour and possible interpretations. Taxpayer behaviour is not only influenced by economic benefit, but is also greatly based on the taxpayer's morals, ethical convictions and social norms (Wenzel, 2005: 504).

Today, economic science and psychology are substantially closer than they used to be in the 1960s, when German scholar Günter Schmölders concluded that the economy should not be analysed solely from classical theoretical viewpoints (Schmölders, 2006). At the same time, the term tax morale was brought into professional literature and scholars began to attempt to interpret a person's behaviour and intrinsic motivation for paying taxes.

Tax morale, which can be defined as the intrinsic motivation to pay taxes, is the moral obligation to pay taxes or the belief that paying taxes contributes to society. Tax morale is one of the influencing factors of tax compliance, which has a significant impact on the payment and evasion of taxes.

Individuals pay their taxes based on two motivations (Frey, 2003: 392) – their reaction to the deterrence policy (utility model) and obligation to their state (embodies their tax morale). The citizen-government relationship in shaping tax compliance has occupied a central place in tax compliance research (e.g., Frey, 2003; Frey and Feld, 2002; Lewis, 1982; Webley, Robben, Elffers and Hessing, 2010).

Various authors have mentioned the different factors that may influence the taxpayer's tax behaviour. These factors include fiscal policy, tax enforcement policy (Lewis, 1982), social context (Smith and Kinsey, 1987), personality, situational characteristics (Groenland and van Veldhoven, 1983), social dilemma (Weigel et al., 1987) and so on.

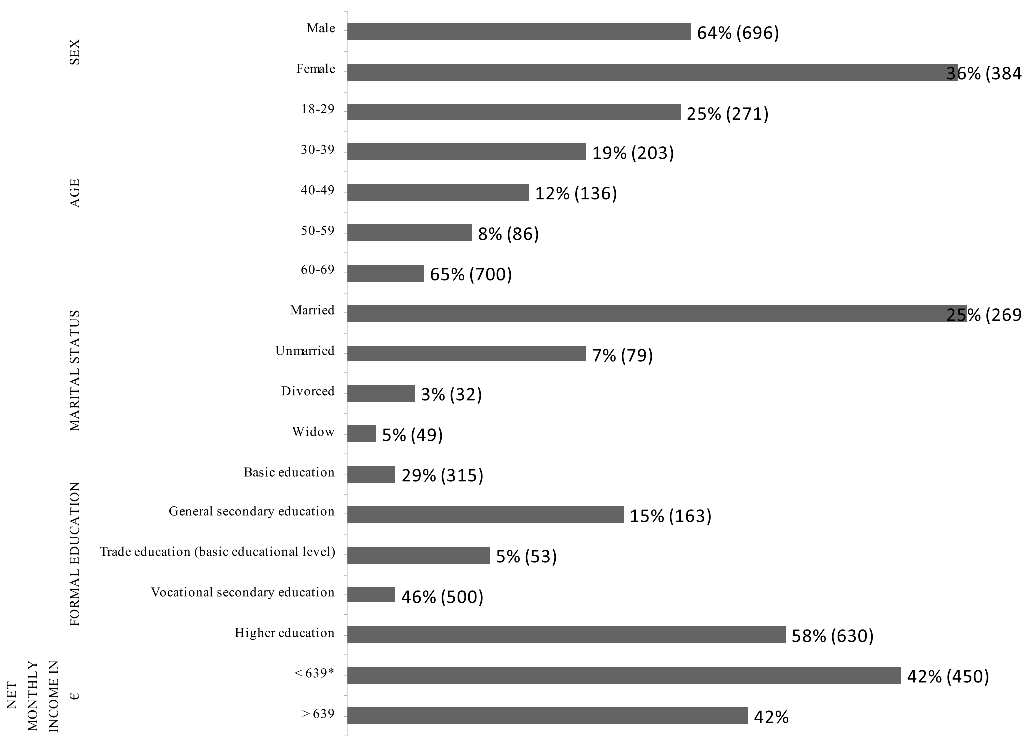
Tax morale is generally regarded as one issue in the process of rational decision-making and its connection with socio-psychological indicators is ignored. However, the issue of tax morale is larger than the question of why people do not cheat on their taxes even if they could (Torgler, 2007). The individual willingness of a person to pay taxes is affected by economic, political and social factors and the joint effect thereof. Research results have shown that the tax related behaviour of an individual is a complex issue and is not based only on the economic behaviour of that individual (Frey and Torgler, 2007).

Tax morale is a socio-psychological factor influencing tax compliance, which is connected to the internal motivation of a person to pay taxes. Tax compliance is the individual willingness of a person to pay taxes and is influenced by the person's own conception of moral principles, the fairness of the tax, his or her trust in the country, awareness of how tax revenues are used, the tax system of the country, the tax policy, the administrative policy, and the individual and the cultural characteristics of the person. In addition to all the influencing factors indicated above, one should not ignore the biologically inherited and socially acquired norms that shape moral values. Socially acquired norms are first of all characterized by the wish to conform to the norms that currently exist in the society. In addition to the individual willingness to pay taxes, tax morale also includes a belief in social contributions as a result of the payment of taxes. Therefore, society has an important role to play in shaping the tax related behaviour of an individual. Individuals agree to pay taxes as long as they believe that tax compliance is a social norm (Alm et al., 1999). If tax evasion and untimely payment of taxes is accepted in society, it affects the tax related behaviour of the taxpayers in a negative way.

Taxes and tax evasion are found in every society (Lewis, 1982). There are major differences in the tax behaviours of citizens around the world. Each person has his or her personal behaviour that is also influenced by his or her cultural and legal situation.

Method and Sample

In order to identify the approaches and willingness of individuals to paying taxes, the author conducted a survey in 2009. To conduct the interviews, the author used empirical sampling, in which the likelihood that the objects would qualify for inclusion in the sample population is not known. The author's selection of empirical sampling is justified because that way the typical study objects needed for the study would be selected. Upon formation of an expert sample, the general population dynamics of the adult population of Estonia on the basis of sex and age groups (according to the



*Average monthly net income in Estonia (2009)

Figure 1: Socio-demographic characteristics of the sample (compiled by the author)

Estonian Statistical Office figures for 2009) were taken into account.

A total of 1,080 people were interviewed aged 18–69 years, including 384 men (36% of the sample) and 696 women (64% of the sample). Five age groups were formed from the respondents: 18–29 (384 people or 36% of the sample), 30–39 (271 people or 25% of the sample), 40–49 (203 or 19% of the sample), 50–59 (136 or 12% of the sample) and 60–69 (86, or 8% of the sample). The socio-demographic profile of all respondents is shown in Figure 1.

The respondents provided answers on paper and during the process; they were in close contact with the interviewer, which made it possible to ask additional questions. As a result, comprehensive answers were provided to all the questions.

The participants were initially informed about the goal of the survey and then assured that their responses would be evaluated in a general sense and used strictly within this research framework. In addition to confidentiality, the questionnaire was anonymous so that people would be able to respond as honestly as possible without feeling pressured to provide answers they thought the interviewer was expecting.

The questionnaire consisted of 14 questions (see Appendix A). Ten of these questions were combined structured and open-ended questions, three questions had multiple-choice options and one was an open question. The questions could be divided into three main groups: introductory questions, attitude questions and opinion questions. In addition to the question types outlined above, there were filter questions, which made it possible to link a new subject with provocative questions to increase the number of spontaneous answers. Considering the objective of the questionnaire, at the beginning of the interview process there were two introductory questions used to establish contact and facilitate comprehension of the context in which the following questions would be presented:

Do you pay state taxes? (The list is provided)
Where do you get information about paying taxes? (Which source)?

The first set of questions were followed by attitude questions, which were used to assess the respondent's attitude toward paying taxes. The questionnaire ended with opinion questions on how to influence the taxpayer's tax behaviour:

- *What do you think could help increase voluntary compliance?*
- *How could you influence a person to pay taxes on time or to keep to the due dates?*
- *What is your opinion about the main reasons why tax obligations are not fulfilled (arrears occur)?*

The objective of this research project was to analyse the responses derived from the three attitude questions. The results will be revealed in more detail in the following chapters.

Data Analyses and Results

Frequency distribution and Chi-Square tests have been used to analyse the results of the questionnaire. The collected data were processed and analysed using *SPSS for Windows* (*Statistical Package for Social Sciences*) and *MS Excel*.

The respondents provided the answers to the open questions in a free format. Together with comments, these answers were later encoded and grouped according to similar content. Those groups, with the other results of the research, were presented in a simplified manner as descriptive text, illustrative tables and diagrams.

The Result of the Questionnaire

The questions asked to analyse attitudes towards paying taxes and compliance was as follows:

- Why do you pay taxes?
- What do you (or someone else) gain from paying taxes?
- What are the circumstances under which you do not pay taxes?

The question *"Why do you pay taxes?"* was answered by 67% of the respondents saying that they do so because they follow the rules; 17% of the respondents answered that they pay taxes because they receive public benefits and 10% of the respondents stated that they believe in social contributions. Only 5% pay taxes because of intrinsic motivation and 1% pay due to their religion (Figure 2).

The question "*What do you (or someone else) gain from paying taxes?"* was the only completely open question among all the questions presented, with the aim of determining the actual knowledge of the respondents regarding the necessity to pay taxes or, in other words, why we pay taxes at all. Fifty-two per cent of the respondents were aware of the relationship between compliance and the performance of the state, public benefits and the provision of social guarantees. Eleven per cent of the respondents pay taxes because it is an obligation; a similar number of respondents answered that they do not receive anything from the state, even though they are tax compliant. Twenty-six of the respondents could not answer the question "*What does taxpaying give you?*" (Figure 3).

The question *"What are the conditions under which you do not pay taxes?"* was included to establish what the opinions of the taxpayers were with regard to the conditions under which they should not have to pay taxes, or possible scenarios that would explain when the taxpayer is non-compliant (see Appendix B).

Fifty-three per cent of the respondents answered that they would not pay taxes if there were no punishments, if nobody knew about it, or if the profit were greater than the punishment. In addition, 15% of the respondents stated that they would not pay taxes under

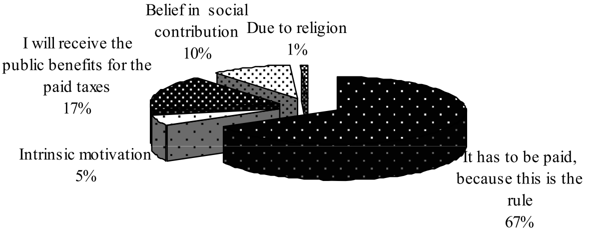


Figure 2: Reasons for paying taxes (compiled by the author)

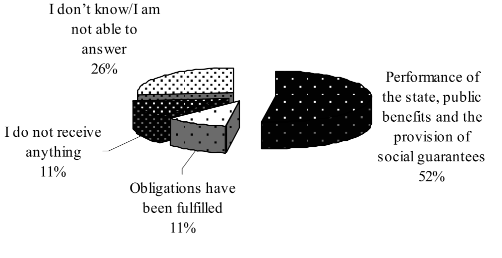


Figure 3: Respondents' knowledge of the necessity of paying taxes (compiled by the author)

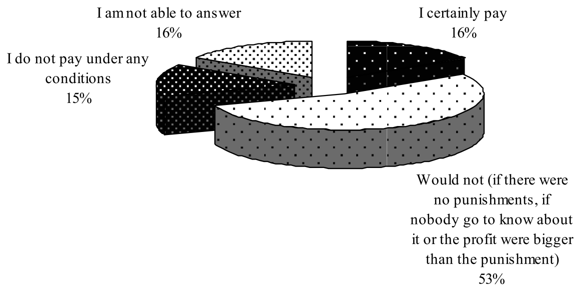


Figure 4: Conditions under which respondents would not pay taxes (compiled by the author)

some other conditions, 16% were unable to answer and only 16% of the respondents said that they would pay taxes under any condition (Figure 4).

Of the respondents that answered that they would not pay taxes if there were no punishment, if nobody knew about it or if the profit were greater than the punishment 87.8% had a basic education, 59.5% had general secondary education, 62.2% had vocational secondary education, 60.4% had a trade education and 42% had a higher education (Figure 5).

Respondents in the 18–29 year age group with a secondary education and who answered the last two questions stated that they did not realize they benefited from the state and would prefer not to pay taxes for various reasons.
As the results indicate, the first circumstance that could increase voluntary compliance is trust in the state. This was followed by an increase in awareness on how tax revenues are used and a good relationship between the state and citizens.

Relationship between the Examined Characteristics

Because the characteristics examined, measured on the sequence scale (e.g. education, gender) and the nominal scale (e.g. family, gender), are not numerical and do not correspond to a normal classification, the Pearson Chi-squared (χ^2) nonparametric test was performed to determine the relationship between different characteristics.

We suggest that factors like gender, age, education, marital status and income influence compliance with the obligation to pay taxes. To test each statement, we shall state the null hypotheses (H_0), in which the distinction

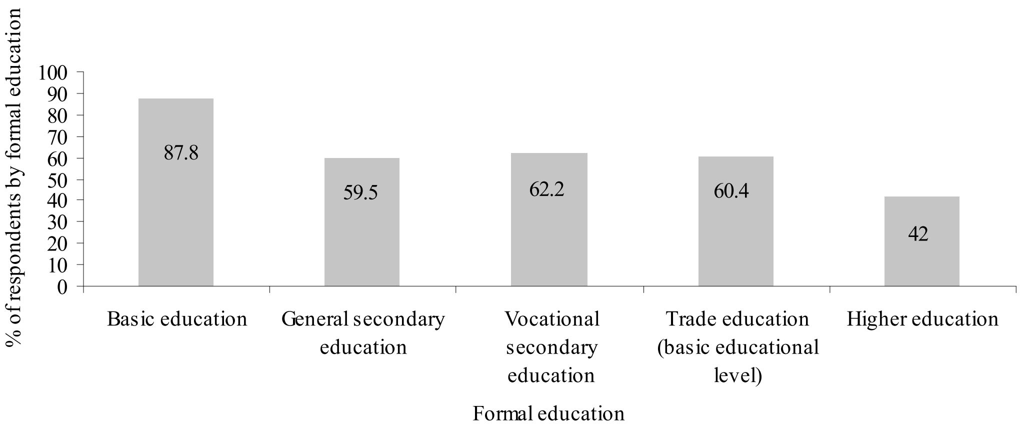


Figure 5: Respondents grouped on the basis of formal education, who would not pay taxes if there were no punishment (Compiled by the author)

between the real and expected situations is not statistically significant; in other words, we have a common expected situation. The significance probability value limit or the lowest level of significance α at which we can accept competitive or alternative hypotheses is $p < 0.05$.

To establish the relationship, the χ^2empiric value (χ^2_{emp}) is calculated as follows: we take an observed count (T), subtract the expected count (O) and then square the difference. This difference is divided by the expected count; in other words, these standardized differences are summed:
$\chi^2_{emp} = \sum [(T-O)^2 : O]$.

The χ^2critical value, χ^2_{kr}, is linked to the theoretical χ^2distribution and depends on α (significance level) and df (*degrees of freedom*).

The hypothesis pair was stated to examine significance α between the variables and the tax behaviour: if the χ^2_{emp} value is smaller than the critical value, the null hypothesis can be accepted; if the χ^2_{emp} value is larger, an alternative hypothesis shall be accepted:

H_0: $\chi^2_{emp} < \chi^2_{kr}$
H_1: $\chi^2_{emp} > \chi^2_{kr.}$

There was no basis for rejecting the null hypothesis in the case of the stated hypothesis pair. In the case of compliance with the obligation to pay taxes and gender, the null hypothesis was rejected (Table 1). The findings show no statistical proof that there was a relationship between gender and compliance with the obligation to pay taxes. Therefore, we do not have any grounds for stating that gender influences compliance. In the case of the variables of marital status, age, education, income, the null hypothesis was rejected and the alternative hypothesis was accepted. In other words, these variables (marital status, age, education, income) influence a person's tax behaviour.

The stronger the relationship between the characteristic pair, the greater the χ^2_{emp}. The strongest relationship was found between education and tax behaviour, and a moderate relationship was found between age, income and tax behaviour. A weak relationship was found between marital status and tax behaviour.

The strong relationship between compliance and education level compared to other individual characteristics can be deduced from the answers provided by the youngest respondents at the secondary education level.

The next chapter will discuss what options exist for stimulating voluntary tax compliance in view of the results in the current paper and earlier research.

Discussion

Historically, a deterrence policy has been the most popular instrument for forcing people to pay their taxes. Taxpayers are, first and foremost, individuals with human qualities, attitudes and tax morale.

Referring to the results of the research work, the dominant deterrence model forces people

Table 1: Strength of relationships and trust statistics in the sample

Factor	x^2_{emp}	df	x^2_{kr}	p	Hypothesis validity
Gender	5,670	3	7,815	0,129	H_0: $x^2_{emp} < x^2_{kr}$
Marital status	21,285	9	16,919	0,011	H_1: $x^2_{emp} > x^2_{kr}$
Education	72,048	12	21,026	0,000	H_1: $x^2_{emp} > x^2_{kr}$
Age	40,691	12	21,026	0,000	H_1: $x^2_{emp} > x^2_{kr}$
Income	36,156	3	7,815	0,000	H_1: $x^2_{emp} > x^2_{kr}$

Source: compiled by the author

to rationalize paying taxes and in this context, predicts tax evasion (Frey, 2003: 387).
Voluntary compliance cannot be regarded as an alternative to stimulating compliance. It is known that voluntary taxation and tax compliance causes horizontal inequalities in a society because tax compliance is different from personal characteristics and attitudes; therefore, a disproportionate tax load influences a person's understanding of his or her civic duty and responsibilities (Slemrod, 1998: 486). In the Estonian example, 2/3 of the people who were questioned do not pay taxes for various reasons. Voluntary taxation would not only cause horizontal inequality, but may also pose a risk in the collection of tax revenues for the state budget.

The high level of compliance does not only prevail in one dimension but is the result of a combination of various dimensions. Two major dimensions – the power of tax authorities and trust in tax authorities – and their interactions jointly influence the level of tax compliance (Kirchler, 2007: 204-206). The deterrence policy has to be used with low tax morale, but honest taxpayers must not be exploited with coercive measures. The higher the tax morale, the less emphasis is put on deterrence and the more respectfully taxpayers are treated (Frey, 2003: 393).

According to the respondents, payment of taxes is impacted in particular by the general attitudes in society and the trust in the state. In so doing, the results of the study of the relationship between tax compliance and effect factors showed that the strongest link in this study is between education and tax compliance. Thus, society plays an important role in shaping and educating the taxpayer. The following sub section will explore the notion of "trust in the state" as it is understood in this research field, and whether it is possible to influence tax behaviour arising from social influences and what options there are for influencing tax compliance through education?

Trust in the State

The respondents pointed out that trust in the state will most effectively stimulate voluntary compliance. Trust in the state is described as how the state (tax authority) treats the taxpayer. Low levels of trust in the state and low tax morale are connected.

Tax morale is decreased when citizens have little trust in their state and are poorly treated by the tax authority. Treating taxpayers respectfully raises their tax morale and lowers the cost of tax collection. Respectful treatment can be divided into two components. First, the procedures used by auditors in their contact with taxpayers must be transparent and clear. In the process of interim reviews, taxpayers are in a weaker position. If taxpayers feel helpless and get the impression that they are not taken seriously, their intrinsic motivation to pay taxes will decrease. Secondly, an important component of respectful treatment is whether or not the tax authority respects the individual. If the tax authority treats taxpayers as partners, taxpayers have stronger incentives to pay taxes honestly (Frey, 2003: 392). Respectful treatment supports and potentially raises tax morale and authoritarian treatment undermines tax morale (Frey and Feld, 2007: 107).

In an antagonistic climate, taxpayers and the tax authority work against each other and voluntary compliance is likely to be negligible. The great social distance (between the tax authority and taxpayers) that arises from low levels of respect causes individuals to "rationally" weigh the costs and benefits of paying taxes. In a synergistic climate, social distance is low, voluntary compliance prevails and individuals are less likely to consider tax evasion (Kirchler et al., 2008: 211).

Accordingly, it is essential that taxpayer trust in the state be increased through the implementation of a variety of measures. Besides political solutions (taxpayers are involved in decision-making processes), it is more important to evaluate how taxpayers are treated. The core issues to consider are partnership, service assistant-customer relations and in communication with taxpayers, avoiding punisher-violator practices. The most favourable precondition for the establishment of good partnerships is the attitude of the tax authority: the taxpayer is honest by his or her nature. Frey and Feld (2002) have qualified the interactive partnership between a tax authority and the taxpayer, which should be expressed by mutual respect and honesty, and have defined it as a psychological tax contract.

Trust in the state is only one component that influences taxpayer compliance in society. Moreover, the overall social attitude towards compliance plays an important role. Even if we presume that taxpayers are generally honest people, their patterns of behaviour are influenced by the behaviour of other taxpayers and their attitudes towards compliance.

General Social Attitude in Society

Knowledge that other members of society evade taxes exerts a strong influence on individual decisions to evade taxes as well (Porcano, 1988). The professional literature emphasizes that in addition to the rational decision-making mode, socialization theory must also be considered. Socialization theory refers to the pattern where the behaviour of other taxpayers influences the taxpaying role (Braithwaite and Wenzel, 2008: 305).

Differences in the phenomena of tax avoidance and attitudes of compliance are evident not only when comparisons are made between various societies, but also when analysing a particular community. Experts have drawn attention to tax evasion as a problematic issue where significant differences can be identified on the basis of social group status (Poiesz, 1998).

Frey and Meier introduced the idea that an individual's contribution to financing public goods or services depends on the behaviour of other taxpayers (as conditional cooperation) (Frey and Meier, 2004: 74). An individual taxpayer is influenced strongly by his perception of the behaviour of other taxpayers – if a taxpayer believes tax evasion is common, tax morale decreases, if he or she believes others are honest, tax morale increases (Frey and Torgler, 2007: 153).

Taxation is a social act that requires social cooperation. Frey states that conditional cooperation is linked to the individual's prior behaviour. It is not possible to change the behaviour of people who have not contributed to producing public benefits through the payment of taxes. It is easier and more effective to change unshaped tax behaviour or the behaviour of the people who have routinely paid their taxes according to their sense of obligation.

One possible way to change the tax behaviour that is socially influenced is to change social attitudes and values. The main aim of changing this kind of tax behaviour is to increase individual trust in the state and to organize training for taxpayers. Taking into consideration the aforementioned statement, it is possible to implement "soft measures" only in the case of taxpayers whose pattern of behaviour is compliant.

Education and Tax Behaviour

Braithwaite, Reinhart, Smart (2010) have remarked on the example of Australia, where people under 30 years, are less compliant than middle aged and senior citizens. However, from the current research conducted among Estonian individuals we can conclude that compliance is lowest in the age group between 18–29 years. First of all, this age group has lower levels of compliance when compared to the older generation because of insufficient knowledge of taxation and of the necessity to pay taxes. The older generation is more tax compliant because they understand compliance with taxes as a social activity.

For the younger generation to follow their parents' footsteps and view tax collection as a social activity, it is necessary to develop the tax behaviour of young taxpayers. Young taxpayers are influenced by their education and knowledge, as well as by the behaviour of other people, such as family, friends and by valid general ethical norms.

The role of society is extremely important in educating and developing the taxpayer. Despite the fact that the younger respondents in the research study had low levels of compliance, they were ready to make several proposals to improve compliance: increase trust in the state and raise awareness of the importance of education. Senior respondents in the study did not have any such proposals. To sum up, the most important conclusion_from the research is that the education of taxpayers is a major contributing factor that determines whether an individual will follow the principle of compliance.

Education is connected with knowledge regarding taxation. Better-educated taxpayers know more about tax laws and fiscal theories and can therefore act as tax compliant citizens more freely (Lewis, 1982). In this situation, better-educated taxpayers have the advantage of being less compliant citizens because they know how to evade taxes.

According to Torgler (2007), there are three types of education: fiscal knowledge, the degree of knowledge involving evasion or avoidance opportunities and knowledge of the necessity of tax collection. Finally, Torgler (2007) concludes that the effect of education is not at all clear.

But it is precisely for this reason that we can say that while one concept might be connected to a number of problems, this does not mean that we should not think about it. It is natural for other questions to arise. Due to the heterogeneity of various research approaches, the multiplicity of factors, and the numerous ways of interpreting them, a single answer to the question of why taxpayers pay taxes is still not available. It is impossible to order the factors. One factor can be very closely connected with another and can be economic, political or social. Education cannot be seen as a single independent factor, but rather as one component of a combination of other factors. Ethical convictions, insufficient knowledge, dependence on family and the likelihood of evading taxes are all components that influence the development of tax behaviour and create the general tax culture in a society (Braithwaite et al., 2010).

We can conclude that education and society (socializing included) plays a major role in training the taxpayer and developing his or her tax behaviour. The high standards of a society will facilitate a fair compliance climate.

Taking previous research, theoretical sources and the current research project into consideration, this paper asserts that changing and influencing tax behaviour can be achieved through education, which is a prospective research area and is wide open for a future research agenda.

Conclusion

In the traditional "enforcement" paradigm often used to analyse tax compliance, taxpayers are viewed as potential criminals, which is an out-dated view. The strategies for improving tax compliance must be based on more than improved enforcement (Alm et al., 2010).

The results of this study have demonstrated that the general attitude towards and trust in the state influence compliance with the obligation to pay taxes and that education plays an essential role in developing the tax behaviour of individuals. Furthermore, as Günter Schmölders author of *Tax Morale,* has pointed out, tax collection is a great challenge in countries that have endured foreign occupation for many years. In particular, raising tax compliance is only possible through a process of education extending over several generations (Schmölders, 2006: 170). The tax behaviour of individuals is a culture that changes very slowly, and making more efficient rules will only bring about short-term success. In the formation of a culture, different influencing factors, including the age of a country and its historical background, must be taken into account.

Accordingly, the biggest challenge in influencing tax compliance is the choice of measures today. The main task is to increase people's individual trust in the state and to organize training and educational sessions for taxpayers. We can develop and change the social attitudes and values of people whose tax behaviour is non-compliant through applying what are known as "soft measures".

Otherwise stated, the taxpayer must be treated pursuant to his or her tax behaviour: non-compliant taxpayers should be treated with deterrence and compliant taxpayers with trust and persuasion. The policy of deterrence must not exploit honest taxpayers. Psychological payment agreements, presuming there is a partnership, mutual respect and honesty between the taxpayer and the tax authority, will improve taxpayer trust in the country and promote greater voluntary compliance.

Taxation is a means of economic control on which the financial power and well being of the entire state depends. Tax evasion, including failure to fulfil one's tax obligation through legal and illegal means will never go away. The question is how well taxpayers and the political ideology as well as administrative methods limit the impact of tax evasion on the administrative capacity and the financial power of the state.

Obtaining revenues for the state, that is, collecting tax revenues is an art, the success of which depends on what and how we contribute to the state.

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Appendix A: List of Questions (generalized)

Where do you work?

Do you pay state taxes?

Where do you get information about paying taxes? (Which source?)

Why do you pay taxes?

What do you (or someone else) gain from paying taxes?

What are the circumstances under which you do not pay taxes?

Do you have enough information about when, where and why to pay?

Do you need more information about this, how the government spends tax revenue?

Would you like to participate in shaping tax policy?

What do you think could help to increase voluntary compliance?

How could you influence a person to pay taxes on time or to keep to the due dates?

What is your opinion about the main reasons why tax obligations are not fulfilled (arrears will occur)?

When do you pay taxes usually?

What is the size of your income (below or above average wage)?

Appendix B: Survey results by different samples

Table 2: What are the conditions under which you do not pay taxes?

Factors		They would not pay taxes if there were no punishments	They would not pay taxes under some other conditions	They were unable to answer	They would pay taxes under any condition	Total
Gender	Male	217	60	58	49	384
	Female	361	100	109	126	696
Total		578	160	167	175	1080
Marital status	Unmarried	165	33	27	44	269
	Married	359	108	113	120	700
	Divorced	38	12	20	9	79
	Widow	16	7	7	2	32
Total		578	160	167	175	1080
Education	Basic ed.	43	3	2	1	49
	General secondary ed.	97	28	23	15	163
	Vocational secondary ed.	196	41	33	45	315
	Trade ed.	32	4	7	10	53
	Higher ed.	210	84	102	104	500
Total		578	160	167	175	1080
Age	18-29	245	47	34	58	384
	30-39	126	49	45	51	271
	40-49	101	31	39	32	203
	50-59	69	15	30	22	136
	60-69	37	18	19	12	86
Total		578	160	167	175	1080
Income	< 639€	383	89	77	81	630
	> 639€	195	71	90	94	450
Total		578	160	167	175	1080

A Comparison of Two Quantitative Forecasting Methods for Macroeconomic Indicators in Romania, Poland and Czech Republic

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Abstract

Econometric modelling and exponential smoothing techniques are two quantitative forecasting methods with good results in practice, but the objective of this research was to identify which of the two are better for short-run predictions. Therefore, accuracy indicators were calculated for making predictions about inflation, unemployment and interest rates in Romania, Poland and the Czech Republic using these methods. Short-run forecasts on a horizon of 3 months were made for December 2011 – February 2012; the econometric models being updated. Exponential smoothing techniques provided more accurate forecasts than econometric models in the case of Poland and the Czech Republic (VAR(2) models, ARMA procedure and models with lagged variables). One explication for the better performance of smoothing techniques is that short-run predictions are more influenced by the recent evolution of the indicators in the chosen countries. In Romania, econometric models generated better predictions than the exponential smoothing method.

Keywords: accuracy, econometric models, forecasts, forecasting methods, smoothing exponential techniques

JEL Classification: E21, E27,C51, C53

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Introduction

In establishing monetary policy, decision-makers must take into account the possible future evolution of important macroeconomic variables such as inflation, unemployment and interest rates. This fact implies knowledge of predictions of these indicators. In econometrics we can build forecasts based on valid models. The real problem appears when we use two or more different forecasting methods and we must choose the one that generates forecasts with the highest degree of accuracy.

In this article, we modelled a selection of three variables and made predictions for them. Using indicators of accuracy we demonstrated that smoothing exponential techniques generated better forecasts than simple econometric models in Poland and the Czech Republic, while for Romania econometric models are more suitable.

Literature

To assess and rank forecast accuracy statisticians have developed several measures of accuracy. For comparisons between the MSE (Mean Square Error) indicators of forecasts, Granger and Jeon (2003) proposed a statistic. Another statistic is presented by Diebold and Mariano (1995) to compare other quantitative measures of errors. Diebold and Mariano proposed a test in 1995 to compare the accuracy of two forecasts under the null hypothesis that assumes no differences in accuracy. The test proposed was later improved by Ashley

(2003), who developed a new statistic based on a bootstrap inference. Subsequently, Diebold and Christoffersen (1998) developed a new way of measuring accuracy while preserving the co-integrating relation between variables.

Armstrong and Fildes (1995) showed that the purpose of measuring an error of prediction is to provide information about the distribution of errors, and they proposed assessing the prediction error using a loss function. They showed that it is not sufficient to use a single measure of accuracy.

Since normal distribution is a poor approximation of the distribution of a low-volume data series, Harvey, Leybourne, and Newbold (2003) improved the properties of small length data series by applying some corrections: a change in the DM (Diebold-Mariano) statistic to eliminate the bias and a comparison of this statistic not with normal distribution, but with T-Student distribution. Clark (2006) evaluated the power of equality forecast accuracy tests, such as modified versions of the DM test or those based on a Bartlett core and a determined data series length.

In the literature there are several traditional methods of measurement which can be ranked according to the dependence or independence of the measurement scale. A complete classification has been made by Hyndman and Koehler (2005) in their reference study (Another Look at Measures of Forecast Accuracy) in the field:

- Scale-dependent measures

The most used measures of scale-dependent accuracy are:

-> Mean Square Error (MSE) = average (e_t^2)

-> Root Mean Square Error (RMSE) = $\sqrt{MSE}$

-> Mean Absolute Error (MAE) = average ($|e_t|$)

-> Median Absolute Error (MdAE) = median ($|e_t|$)

RMSE and MSE are commonly used in statistical modelling, although they are affected by outliers more than other measures.

- Scale-independent measures:
  -> *Measures based on percentage errors*

The percentage error is given by:

$$p_t = \frac{e_t}{X_t} \cdot 100$$

The most common measures based on percentage errors are:

* Mean Absolute Percentage Error (MAPE) = average ($|p_t|$)

* Median Absolute Percentage Error (MdAPE) = median ($|p_t|$)

* Root Mean Square Percentage Error (RMSPE) = geometric mean (p_t^2)

* Root Median Square Percentage Error (RMdSPE) = median (p_t^2)

When X_t takes the value 0, the percentage error becomes infinite or is not defined and the measure distribution is highly skewed, which is a major disadvantage. Makridakis (1984) introduced symmetrical measures in order to avoid another disadvantage of MAPE and MdAPE, for example, overly large penalties for positive errors in comparison with negative errors.

* Mean Absolute Percentage Error (sMAPE) = average ($\frac{|X_t - F_t|}{X_t + F} \cdot 200$)

* Symmetric Median Absolute Percentage Error (sMdAPE) = median ($\frac{|X_t - F_t|}{X_t + F} \cdot 200$) where F_t is the forecast of X_t

-> Measures based on relative errors

It is considered that $r_t = \frac{e_t}{e_t^*}$, where e_t^* is the forecast error for the reference model.

* Mean Relative Absolute Error (MRAE) = average ($|r_t|$)

* Median Relative Absolute Error (MdRAE) = median ($|r_t|$)

* Geometric Mean Relative Absolute Error (GMRAE) = geometric mean ($|r_t|$)

A major disadvantage is that the value for the error of the benchmark forecast is too low.

->Relative measures

For example, the relative RMSE is calculated:

$$rel\_RMSE = \frac{RMSE}{RMSE_b},\ where\ RMSE_b$$

is the RMSE of the "benchmark model"

Relative measures can be defined for MA, MdAE, MAPE. When the benchmark model is a random walk, rel_RMSE is used, which is actually Theil's U statistic. A random walk or naïve model is used the most, but these may be replaced with the naive2 method in which forecasts are based on the latest seasonally adjusted values according to Makridakis, Wheelwright and Hyndman (1998).

Free-scale error metrics (resulted from dividing each error at average error)

Hyndman and Koehler (2005) introduce the "Mean Absolute Scaled Error" (MASE) in this class of errors in order to compare the accuracy of forecasts for more time series.
In practice, the measures of forecast error most used are:

Root Mean Squared Error (RMSE)

$$RMSE = \sqrt{\frac{1}{n}\sum_{j=1}^{n} e_X^2(T_0 + j, k)}$$

Mean error (ME)

$$ME = \frac{1}{n}\sum_{j=1}^{n} e_X(T_0 + j, k)$$

The sign of the indicator value provides important information: if it has a positive value, then the current value of the variable was underestimated, which means the expected average values are too small. A negative value of the indicator shows the expected values are on average too high.

Mean absolute error (MAE)

$$MAE = \frac{1}{n}\sum_{j=1}^{n} |\ e_X(T_0 + j, k)\ |$$

These measures of accuracy have some disadvantages. For example, RMSE is affected by outliers. Armstrong and Collopy (2000) stress that these measures are not independent of the unit of measurement unless they are expressed as a percentage. These measures include average errors with different degrees of variability. The purpose of using these indicators is related to the characterization of distribution errors. Clements and Hendry (1995) have proposed a generalized version of the RMSE based on error inter-correlation, when at least two series of macroeconomic data are used. If we have two forecasts with the same mean absolute error, RMSE penalizes the forecast with the largest errors.

U Theil's statistic is calculated in two variants by the Australian Treasury in order to evaluate forecast accuracy.

The following notations are used:
a – registered results
p – predicted results
t – reference time
e – error (e=a-p)
n – number of time periods

$$U_1 = \frac{\sqrt{\sum_{t=1}^{n}(a_t - p_t)^2}}{\sqrt{\sum_{t=1}^{n} a_t^2} + \sqrt{\sum_{t=1}^{n} p_t^2}}$$

If U_1 is closer to one, the forecast accuracy is higher.

$$U_2 = \sqrt{\frac{\sum_{t=1}^{n-1}\left(\frac{p_{t+1} - a_{t+1}}{a_t}\right)^2}{\sum_{t=1}^{n-1}\left(\frac{a_{t+1} - a_t}{a_t}\right)^2}}$$

If U_2 =1=> there are no differences in terms of accuracy between the two forecasts compared

If U_2 <1=> the forecast compared has a higher degree of accuracy than the naïve forecast

If U_2 >1=> the forecast compared has a lower degree of accuracy than the naïve forecast

Other authors, such as Fildes and Steckler (2000), use another criterion to classify the accuracy measures. If we consider, $\hat{X}_t(k)$ the predicted value after k periods from the origin time t, then the error at future time (t+k) is $e_t(t+k)$. The indicators used to evaluate forecast accuracy can be classified according to their usage. Thus, forecast accuracy measurement can be done independently or by comparison with another forecast.

Clements and Hendry (2010) presented the most used accuracy measures in the literature, and these are described below.

1. Specific loss function

Diebold, Gunther and Tay (1998) started from a loss function $L(a_t, x_{t+1})$, where:

a_t is the specific action

$x_{t+1} \rightarrow f(x_{t+1})$ is the future value of a random variable whose distribution is known
f (.) is the density forecast

The optimal condition involves minimizing the loss function when the density forecast is $p_{t,1}(x_{t+1})$:

$$a_{t,1}^{*} = \underset{a_{t,1} \in A}{\arg\min} \int L(a_{t,1}, x_{t+1}) p_{t,1}(x_{t+1}) dx_{t+1}$$

The expected value of the loss function is:

$$E[L(a_{t,1}^{*}, x_{t+1})] = \int L(a_{t,1}^{*}, x_{t+1}) f(x_{t+1}) dx_{t+1}$$

The density forecast will be preferred above any other density for a given loss function if the following condition is accomplished:

$E[L(a_{t,1}^{*}(p_{t,1}(x_{t+1})), x_{t+1})] < E[L(a_{t,2}^{*}(p_{t,2}(x_{t+1})), x_{t+1})]$, where $a_{t,i}^{*}$ is the optimal action for the following forecast: $p_{t,i}(x)$.

Making decisions based on forecast accuracy evaluation is important in macroeconomics, but few studies have focused on this. Notable achievements in forecast performance evaluation have been made in practical applications in finance and in metrology. Recent improvements refer to the inclusion of disutility presented in actions in future states taking into account the entire distribution of the forecast. Since an objective assessment of the cost of prediction errors cannot be made, only general absolute loss functions, loss or loss of error squares can be used.

2. Mean square forecast error (MSFE) and the second error of the generalized forecast (GFESM)

The most commonly used measure for assessing forecast accuracy is the mean square forecast error (MSFE). In the case of a vector of variables, an MSFE matrix will be built:

$$V_h \equiv E[e_{T+h} e_{T+h}^{'}] = V[e_{T+h}] + E[e_{T+h}] E[e_{T+h}^{'}]$$

, where e_{T+h} is a vector of errors with h steps-ahead forecast.

The trace and the determinant of the mean square errors matrix are classical measures of forecast accuracy.

A generalized forecast error second moment (GFESM) is calculated according to Clements and Hendry (1993) as a determinant of the expected value of the vector of the forecast errors for future moments up to the horizon of interest. If forecasts up to a horizon of *h* quarters present interest, this indicator is calculated as: $GFESM = \left| E\left(\begin{pmatrix} e_{t+1} \\ e_{t+2} \\ \ldots \\ e_{t+h} \end{pmatrix} \cdot \begin{pmatrix} e_{t+1} \\ e_{t+2} \\ \ldots \\ e_{t+h} \end{pmatrix}^{T} \right) \right|$.

e_{t+h} is the n-dimensional forecast error of n variables model on horizon h

It is considered that GFESM is a better measure of accuracy because unlike the MSFE trace it is invariant to elementary operations with variables, and in contrast with MSFE matrix trace and determinants, it is also a measure that is invariant to basic operations of the same variables on different horizons of prediction.

Clements and Hendry (1993) showed that the disadvantages of MSFE related to invariance models are determined by the lack of invariance indicator non-singular linear transformations that preserve the scale. MSFE comparisons determined inconsistent ranks of forecast performances of different models with several steps along the variables transformations.

3. Measures of relative accuracy

Relative measures for assessing forecast accuracy suppose the comparison of forecasts with one reference, referred to in the literature as the “benchmark forecast” or “naïve forecast”. However, the choice of forecast used for comparison remains subjective. Problems that may arise in this case are related to the existence of outliers or an inappropriate choice of models on which forecasts are developed, and the emergence of shocks. A first measure of relative accuracy is Theil’s U statistic, for which the reference forecast is the last observed value recorded in the data series. Collopy and Armstrong proposed a new indicator instead of the U statistic (RAE). Thompson improved the MSE indicator, proposing a statistically determined MSE (mean squared error log ratio).

Relative accuracy can also be measured by comparing predicted values and those based on a model built using data from the past. The tests of forecast accuracy compare an estimate of forecast error variance derived from the past residue and the current MSFE.

To check whether the differences between mean square errors corresponding to the two alternative forecasts are statistically significant, we use tests proposed by Diebold and Mariano, West, Clark and McCracken, Corradi and Swanson, Giacomini and White.

Starting from a general loss function based on predictive ability tests, the accuracy of two alternative forecasts for the same variable is compared. The first results obtained by Diebold and Mariano were formalized, as shown by Giacomini and White (2006). Other researchers started from the particular loss function.

Recent studies target accuracy analysis using different prediction models or the analysis of forecasted values as a comparison criterion for the same macroeconomic indicators registered in several countries.

Ericsson (1992) shows that parameter stability and mean square error of prediction are two key measures in the evaluation of forecast accuracy, but they are inadequate and a new statistical test needs to be introduced.

Granger and Jeon (2003) consider four models for US inflation: a univariate model, a model based on an indicator used to measure inflation, a univariate model based on the two previous models and a bivariate model. Applying the mean square error criterion, the best prediction made is the one based on an autoregressive model of order 1 (AR (1)). Applying the distance-time method, the best model is the one based on an indicator used to measure inflation.

Ledolter (2006) compares the mean square error of ex-post and ex ante forecasts of regression models with a transfer function with the mean square error of univariate models that ignore covariance, and shows the superiority of predictions based on transfer functions.

Teräsvirta et al. (2005) examine the accuracy of forecasts based on linear autoregressive models, autoregressive with smooth transition (STAR) and neural networks (neural network-NN) with a time series of 47 months for macroeconomic variables in G7 economies. For each model a dynamic specification is used and it is shown that STAR models generate better forecasts than linear autoregressive models. Neural networks over a long horizon forecast generated better predictions than models using an approach from private to general.

Heilemann and Stekler (2007) explain why macroeconomic forecast accuracy in the last 50 years in the G7 has not improved. The first explanation refers to criticisms of macroeconomic models and forecasting models, and the second relates to the unrealistic expectations of forecast accuracy. Problems related to forecast bias, data quality, the forecast process, predicted indicators and the relationship between forecast accuracy and forecast horizon are analysed.

Ruth (2008), using empirical studies, obtained forecasts with a higher degree of accuracy for European macroeconomic variables by combining specific sub-group predictions in comparison with forecasts based on a single model for the whole Union.

Gorr (2009) showed that the univariate method of prediction is suitable for normal forecasting conditions while using conventional measures of accuracy, but multivariate models are recommended for predicting exceptional conditions when the ROC curve is used to measure accuracy.

Dovern and Weisser (2011) used a broad set of individual forecasts to analyse four macroeconomic variables in G7 countries. Analysing accuracy, bias and forecast efficiency resulted in large discrepancies between countries and also within the same country for different variables. In general, the forecasts are biased and only a fraction of GDP forecasts are closer to the results registered in reality.

In the Netherlands, experts make predictions starting from the macroeconomic model used by the Netherlands Bureau for Economic Policy Analysis (CPB). For the period 1997–2008, the experts model was rebuilt and compared to the one used by the CPB in terms of the accuracy of the forecasts based on them. The conclusions of Franses, and Kranendonk and Lanser (2011) were that the CPB model forecasts are in general biased and with a higher degree of accuracy.

Models used to make Macroeconomic Forecasts

The variables used in models are: inflation rate calculated starting from the harmonized index of consumer prices, unemployment rate and interest rate in the short term. The last indicator is calculated as the average of daily values for interest rates on the market. The data series are monthly and are taken from the Eurostat website for the period February 1999 to October 2011 for Romania, Poland and the Czech Republic. The indicators are expressed in comparable prices, the reference base being the values from January 1999. We eliminated the influence of seasonal factors for the inflation rate using the Census X11 (historical) method.

After applying the Augmented Dickey-Fuller test (ADF test) and Phillips Perron for 1, 2 and 4 lags, we found that the interest rate series for Romania is stationary, while the inflation rate (denoted rin) and the unemployment rate (denoted rsn) series have one single unit root each. In order to achieve stationarity in the data we differenced the series.

The data series for all variables in Poland were not stationary and so were differenced. In the Czech Republic only the data series for inflation and unemployment rates were transformed to achieve stationarity.

Taking into account that our objective is to achieve one-month-ahead forecasts for December 2011, and January and February 2012, we considered it necessary to update the models. We used three types of models: a VAR(2) model, an ARMA model and a model in which inflation and interest rates are explained using variables with a lag. The econometric models used for each country are specified in **Appendix 1**.

We developed one-month-ahead forecasts starting from these models, then we evaluated their accuracy. The one-step-ahead forecasts for 3 months are presented in **Appendix 2**.

The Assessment of Accuracy for Predictions based on Econometric Models

A generalization of the Diebold-Mariano test (DM) is used to determine whether the MSFE matrix trace of the model with aggregation variables is significantly lower than that of the model in which the aggregation of forecasts is done. If the MSFE determinant is used, according to Athanasopoulos and Vahid (2005), the DM test cannot be used in this version because the difference between the two models MSFE determinants cannot be written as an average. In this case, a test that uses a bootstrap method is recommended.

The DM statistic is calculated as:

$$DM_t = \frac{\sqrt{T}\cdot[tr(MSFE_{VAR(2)\ \mathrm{model}})_h - tr(MSFE_{ARMA\,\mathrm{model}})_h]}{s} = \frac{1}{s}\cdot\sqrt{T}\cdot[\frac{1}{T}\sum_{t=1}^{T}(em_{1,1,t}^2 + em_{2,1,t}^2 + em_{3,1,t}^2 - er_{1,1,t}^2 - er_{2,1,t}^2 - er_{3,1,t}^2)] \quad (1)$$

where T is the number of months for which forecasts are developed

$em_{i,h,t}$ is the h-steps-ahead forecast error of variable i at time t for the VAR(2) model

$er_{i,h,t}$ is the h-steps-ahead forecast error of variable i at time t for the ARMA
s is the square root of a consistent estimator of the limiting variance of the numerator

The null hypothesis of the test refers to the same accuracy of forecasts. Under this assumption and taking into account the usual conditions of the central limit theorem for weakly correlated processes, the DM statistic follows a standard normal asymptotic distribution. The Newey-West estimator with the corresponding lag-truncation parameter set to $h-1$ is used to establish the variance.

On 3 months we compared the accuracy of predictions for all the three variables, predictions made starting from VAR(2) models and those from ARMA models. After calculating the DM statistic, the accuracy of forecasts based on VAR models is higher than those based on ARMA models for all chosen countries.

In **Table 1** the accuracy indicators for the inflation rate predictions are displayed. VAR(2) and ARMA models and models with lags for Romania have the tendency to underestimate the forecasted values of the inflation rate. The predictions of inflation based on models with a lag have higher accuracy – the value close to zero for U1 confirming this observation, as the other accuracy indicators that registered the lowest values. As the U2 Theil statistic has values lower than one for all one-step-ahead forecasts, these predictions are better than those based on a naïve model.

The accuracy indicators for unemployment rate predictions are presented in **Table 2**. For the unemployment rate, the VAR(2) and ARMA models overestimate forecasted values in Romania. The values registered by the indicators are contradictory because some of the indicators of accuracy indicate a higher level of precision for predictions based on VAR(2) models (RMSE, MPE, U1), and the others consider that ARMA models should be used for forecasting the unemployment rate (MAE,ME). The unemployment rate forecasts for Romania based on VAR models are better than those obtained using the naïve model.

VAR models generated the most accurate predictions for inflation and unemployment rates in Poland. For the interest rate some indicators recommend the use of VAR models in forecasts (RMSE, MPE, U1) and others the ARMA procedure (ME, MAE). All the predictions based on the mentioned econometric models are better than those obtained using the naïve model in Poland. The inflation and

Table 1: Indicators of forecast accuracy for the inflation rate (Romania, Poland, Czech Republic)

Inflation rate- Romania Indicators of accuracy	Models used to build the forecasts		
	VAR(2)	ARMA	Models with lag
RMSE	0,0746185	0,07450409	0,06625522
ME	0,0638	0,0635	0,0525
MAE	0,0638	0,0635	0,0525
MPE	0,0022	0,0015	0,0012
U1	0,001291	0,001289	0,001147
U2	0,93003	0,928368	0,825577

Inflation rate- Poland Indicators of accuracy	Models used to build the forecasts		
	VAR(2)	ARMA	Models with lag
RMSE	2,12170516	2,1178268	5,7271888
ME	0,7464	-2,4657	-6,2090
MAE	0,4797	2,7323	6,4757
MPE	0,0133	-0,1219	-0,2905
U1	0,010707	0,067959	0,170545
U2	0,619845	2,769787	7,730533
Inflation rate- Czech Republic Indicators of accuracy	**Models used to build the forecasts**		
	VAR(2)	**ARMA**	**Models with lag**
RMSE	0,17051339	0,8532325	3,6277209
ME	-0,6694	0,0955	-3,9449
MAE	1,3694	0,6045	4,6449
MPE	-0,0650	-0,0336	-0,2550
U1	0,051257	0,017019	0,151515
U2	1,388935	0,981571	2,980709

Source: author's calculations using Excel

unemployment rate are underestimated on the specified horizon when VAR models are used and overestimated for the other models. When the ARMA procedure was applied the interest rate was underestimated in Poland unlike the VAR models or those with lagged variables.

In the Czech Republic, the ARMA procedure was the most suitable for the inflation rate when an econometric model was used to make forecasts, while the best results for the unemployment and interest rates were given by VAR(2) models. However, only the predictions based on the ARMA models for inflation rate and on VAR for the interest rate are better than those using the naïve model.

Source: author's calculations using Excel

Table 3 presents the values for accuracy indicators of interest rate predictions. Only VAR and ARMA models could be built to explain the evolution of interest rates for the Czech Republic.

The best forecasts of interest rates in Romania are those based on VAR(2) models – all the indicators of accuracy having registered the lowest values. For all the presented models for Romania, we observed a tendency to underestimate predicted values. The forecasts based on the proposed models have a lower accuracy than those based on naïve models. The best results for interest rates in the Czech Republic are also obtained using the VAR models.

Table 2: Indicators of forecast accuracy for the unemployment rate (Romania, Poland, Czech Republic)

Unemployment rate- Romania Indicators of accuracy	Models used to build the forecasts	
	VAR(2)	ARMA
RMSE	0,00214523	0,00220985
ME	-0,00031	-6,7E-05
MAE	0,002095	0,002056
MPE	-0,00387	-0,00047
U1	0,014997	0,015422
U2	0,995366	1,024536
Unemployment rate-Poland Indicators of accuracy	Models used to build the forecasts	
	VAR(2)	ARMA
RMSE	0,07807327	1,9393914
ME	0,051257	-1,93937
MAE	0,051257	1,939367
MPE	0,005102	-0,19329
U1	0,002926	0,106986
U2	0,720818	23,71233
Unemployment rate- Czech Republic Indicators of accuracy	Models used to build the forecasts	
	VAR(2)	ARMA
RMSE	0,57231311	2,0922862
ME	-0,51277	-2,09223
MAE	0,512767	2,092233
MPE	-0,07696	-0,31383
U1	0,040086	0,186124
U2	3,914625	15,89517

Source: author's calculations using Excel

The Assessment of Accuracy for Predictions based on Exponential Smoothing Techniques

Exponential smoothing is a technique used to make forecasts in econometric modelling. It is a simple method that takes into account the more recent data. In other words, recent observations in the data series are given more weight in predicting than older values. Exponential smoothing considers exponentially decreasing weights over time.

4. Simple exponential smoothing method (M1)

The technique can be applied for stationary data to make short-run forecasts. Starting from the formula for each rate $R_n = a + u_n$,

where a is a constant and u_t is a residual and s is seasonal frequency, the prediction for the next period is:

$$\hat{R}'_{n+1} = \alpha \times R'_n + (1-\alpha) \times \hat{R}'_n \quad , \quad n = 1,2,...,t+k \qquad (2)$$

α is a smoothing factor, with values between 0 and 1, being determined by minimizing the sum of squared prediction errors.

Table 3: Indicators of forecast accuracy for interest rates (Romania, Poland, Czech Republic)

Interest rate- Romania Indicators of accuracy	Models used to build the forecasts		
	VAR(2)	ARMA	Models with lag
RMSE	0,03403586	0,09931423	0,08942674
ME	0,034067	0,127728	0,115326
MAE	0,034067	0,127728	0,115326
MPE	1,099826	3,646275	3,24019
U1	0,387935	0,628847	0,602318
U2	3,258689	11,30977	10,36556
Interest rate- Poland Indicators of accuracy	**Models used to build the forecasts**		
	VAR(2)	**ARMA**	**Models with lag**
RMSE	0,17051339	0,8532325	3,6277209
ME	-0,6694	0,0955	-3,9449
MAE	1,3694	0,6045	4,6449
MPE	-0,0196	0,0830	0,0631
U1	0,016741	0,041817	0,043286
U2	0,650065	0,659235	0,98038
Interest rate Indicators of accuracy- Czech Republic	**Models used to build the forecasts**		
	VAR(2)	**ARMA**	
RMSE	0,03663478	0,3635292	
ME	0,0052	-0,3693	
MAE	0,0164	0,3693	
MPE	0,0100	-0,5302	
U1	0,014359	0,36058	
U2	0,761926	14,99092	

Source: author's calculations using Excel

$$\min \frac{1}{n}\sum_{i=0}^{n-1}(R'_{n+1}-\hat{R}'_{n+1})^2 = \min \frac{1}{n}\sum_{i=0}^{n-1} e_{n+1}^2 \quad (3)$$

Each future smoothed value is calculated as a weighted average of the n past observations, resulting: $\hat{R}'_{n+1} = \alpha \times \sum_{i=1}^{n}(1-\alpha)^i \times \hat{R}'_{n+1-s}$. (4)

5. Holt-Winters Simple exponential smoothing method (M2)

This method is recommended for data series with a linear trend and without seasonal variations, the forecast being determined as:

$$R_{n+k} = a + b \times k \, . \quad (5)$$

$$a_n = \alpha \times R_n + (1-\alpha)\times(a_{n-1}+b_{n-1}) \quad (6)$$

$$b_n = \beta \cdot (a_n - a_{n-1}) + (1-\beta)\cdot b_{n-1}$$

Finally, the prediction value on horizon k is:

$$\hat{R}_{n+k} = \hat{a}_n + \hat{b}_n \times k \quad (7)$$

Table 4: Measures of accuracy for forecasts based on exponential smoothing techniques for inflation, unemployment and interest rates (Romania, Poland, Czech Republic)

Inflation rate- Romania	RMSE	ME	MAE	MPE	U1	U2
M1	0,139623	-0,13108	0,131084	-0,00454	0,002424	1,742829
M2	0,020535	0,002416	0,018917	8,49E-05	0,000356	1,204907
M3	0,145544	-0,04992	0,138771	-0,00172	0,002523	1,088624
M4	0,044529	0,003783	0,038084	0,000134	0,000771	1,142016
M5	0,128728	-0,12435	0,124351	-0,00431	0,0022	0,731673
Inflation rate- Poland	RMSE	ME	MAE	MPE	U1	U2
M1	0,346064	-0,93413	1,100801	-0,03875	0,025877	1,768594
M2	0,322865	-0,42613	0,592799	-0,02562	0,014452	0,448331
M3	-	-	-	-	-	-
M4	0,264928	-0,31025	0,476918	-0,02068	0,011023	0,709408
M5	0,394704	-0,22028	0,38695	-0,01668	0,0099	0,707161
Inflation rate- Czech Republic	RMSE	ME	MAE	MPE	U1	U2
M1	0,288386455	-1,73383	1,800501	-0,08296	0,056005	1,545809
M2	1,119007113	-1,50076	1,567428	-0,08027	0,049381	0,189913
M3	-	-	-	-	-	-
M4	0,859249004	-0,53664	0,603307	-0,03108	0,01775	0,947732
M5	1,039570357	-1,45292	1,519589	-0,0779	0,0475	0,228745
Unemployment rate- Romania	RMSE	ME	MAE	MPE	U1	U2
M1	0,001933	0,0017	0,0017	0,023938	0,013327	0,887748
M2	0,002547	0,000467	0,0024	0,007075	0,017708	1,174125
M3	0,002594	0,0012	0,002533	0,01723	0,017942	1,201461
M4	0,002493	0,0011	0,002433	0,015828	0,01726	1,15401
M5	0,002655	3,33E-05	0,002367	0,001069	0,018517	1,223844
Unemployment rate- Poland						
M1	0,081695	-0,06671	0,066707	-0,0066	0,004071	1,40801
M2	0,090748	0,04049	0,090065	0,004041	0,004498	1,568334
M3	0,132553	-0,05207	0,114295	-0,00512	0,006601	2,277788
M4	0,168833	-0,09223	0,151836	-0,0091	0,008424	2,902186
M5	0,062895	0,041067	0,058316	0,004093	0,003118	1,088761
Unemployment rate- Czech Republic						
M1	0,081731	-0,03343	0,033433	-0,00499	0,004345	0,43671
M2	0,058351	0,049443	0,049443	0,007421	0,00436	0,44044
M3	0,111016	-0,07804	0,09456	-0,01163	0,008375	0,836498
M4	0,116203	-0,0839	0,100421	-0,0125	0,00877	0,87466
M5	0,048776	0,01744	0,044912	0,002621	0,003653	0,365749
Interest rate- Romania	RMSE	ME	MAE	MPE	U1	U2
M1	0,013872	0,015633	0,015633	0,496562	0,195873	1,594589
M2	0,013563	0,006923	0,01062	0,347335	0,157418	1,15881
M3	0,014619	0,007633	0,011233	0,368146	0,16851	1,208536
M4	0,015703	0,0077	0,013367	0,428523	0,176185	1,534473
M5	0,020443	0,012768	0,018467	0,576079	0,216784	1,798754

Interest rate-Poland						
M1	0,292605	0,004546	0,066109	-0,01004	0,007934	0,311901
M2	0,112106	0,184695	0,191343	0,037422	0,031188	1,300671
M3	0,111992	0,046954	0,156886	0,005487	0,022233	0,721493
M4	0,280972	0,198919	0,172252	0,039716	0,020209	1,270384
M5	0,155525	0,038446	0,072963	0,003092	0,0103	0,488818
Interest rate-Czech Republic						
M1	0,033121	-0,01294	0,022964	-0,01635	0,021484	1,125963
M2	0,045165	-0,01788	0,030232	-0,02586	0,02999	2,013734
M3	0,098583	-0,09484	0,094845	-0,13656	0,075181	4,417344
M4	0,076148	0,014587	0,094149	0,022764	0,068091	3,35745
M5	0,03487	-0,01772	0,023895	-0,02554	0,0225	1,657338

Source: own computations using Excel

6. Holt-Winters multiplicative exponential smoothing method (M3)

This technique is used when the trend is linear and the seasonal variation follows a multiplicative model. The smoothed data series is:

$$\hat{R}'_{n+k} = (a_n + b_n \times k) \times c_{n+k} \quad (8)$$

where a is the intercept, b is the trend and c is a multiplicative seasonal factor

$$a_n = \alpha \times \frac{R'_n}{c_{n-s}} + (1-\alpha)\times(a_{n-1} + b_{n-1})$$
$$b_n = \beta \times (a_n - a_{n-1}) + (1-\beta)\times b_{n-1}$$
$$c_n = \gamma \times \frac{R'}{a_n} + (1-\gamma)\times c_{n-s} \quad (9)$$

The prediction is:

$$\hat{R}'_{n+k} = (\hat{a}_n + \hat{b}_n \times k) \times \hat{c}_{n+k} \quad (10)$$

7. Holt-Winters additive exponential smoothing method (M4)

This technique is used when the trend is linear and the seasonal variation follows a multiplicative model. The smoothed data series is (14):

$$\hat{R}'_{n+k} = a_n + b_n \times k + c_{n+k}$$

A is the intercept, b is the trend and c the additive seasonal factor,

$$a_n = \alpha \times (R'_n - c_{n-s}) + (1-\alpha)\times(a_{n-1} + b_{n-1})$$
$$b_n = \beta \times (a_n - a_{n-1}) + (1-\beta)\times b_{n-1}$$
$$c_n = \gamma \times (R'_n - a_n) + (1-\gamma)\times c_{n-s}$$

(11)

The prediction is: $\hat{R}'_{n+k} = \hat{a}_n + \hat{b}_n \times k + \hat{c}_{n+k}$. (12)

8. Double exponential smoothing method (M5)

This technique is recommended when the trend is linear; two recursive equations are used: $S_n = \alpha \times R_n + (1-\alpha)\times S_{n-1}$ (13)

$$D_n = \alpha \times S_n + (1-\alpha)\times D_{n-1}$$

where S and D are a simple, respectively double smoothed series.

Table 4 presents the accuracy indicators for predictions based on exponential smoothing techniques for all three countries. On analysing the values of these indicators, the smoothing method is better than the econometric models for the mentioned countries.

All the techniques tend to underestimate the values of the variables in Romania, except in the case of simple and the double exponential smoothing for the inflation rate. The Holt-Winters Simple exponential smoothing method (M2) generated the best forecasts for the inflation and interest rates, and the simple exponential smoothing method (M1) for the unemployment rate. Only the predictions of the inflation rate based on M5 and of the unemployment rate based on M1 are better than those based on the naïve model in Romania. The forecasts based on econometric models are better in terms of accuracy than those obtained using exponential smoothing techniques because of the values of U1 that are closer to 1.

Forecasts for Poland based on exponential smoothing techniques have a better degree of accuracy than those obtained using econometric models. For inflation and unemployment rates the double exponential smoothing method was the most suitable in making short-run predictions, while the simple exponential smoothing was the best method for interest rates. Due to the negative values for the ME indicator, predictions for inflation are overestimated, while all the forecasts for interest rates are underestimated. The unemployment rate predictions based on the naïve model are better than those obtained using all types of exponential smoothing methods.

Indeed, the exponential smoothing techniques provided the most accurate predictions for all indicators in the Czech Republic. For the inflation rate, the best method applied was the additive exponential smoothing technique, while for the unemployment and interest rates, the simple exponential smoothing technique generated the best results due to the value of U1 that was very close to zero. All the predictions for the unemployment rate based on exponential smoothing techniques are more accurate than those based on the naïve model. All forecasts are overestimated on the chosen horizon, except those of the unemployment rate when using the Holt-Winters and double smoothing methods and those of interest rates when the additive technique is used. The low values for RMSE imply a low variability in the data series.

Conclusions

In our research we proposed to ascertain whether exponential smoothing techniques generate better short-run predictions than simple econometric models. Therefore, three countries were chosen (Romania, Poland and Czech Republic) and three macroeconomic indicators (inflation, unemployment and interest rate).

According to recent research, simple econometric models are recommended for forecasts due to the high degree of accuracy in the predictions. For the prognosis made for Romania (December 2011 – February 2012), the simple econometric models (VAR models and models with lagged variables) generated more accurate predictions than the exponential smoothing techniques.

Analysing the results of this research for Romania, we found it was best to use VAR models to make predictions about the macroeconomic variables unemployment rate or interest rate, and a model with lags for the inflation rate. We obtained a greater accuracy with forecasts based on econometric models than those based on smoothing techniques for Romania. This result implies that it is important to take into account all the previous values of the variables when making predictions, not only recent ones as in the case of exponential smoothing methods.

In Poland and the Czech Republic, recent values in the data series used for predictions have the greatest importance. Therefore, exponential smoothing methods determined the best results in terms of forecast accuracy. Simple and double exponential smoothing methods were the most suitable in making short-run predictions in Poland. Simple and additive exponential smoothing techniques are recommended for the Czech Republic.

To improve policy, we can use monthly forecasts based on the better method for each country. Policy is improved by choosing the most accurate forecast to help governments or banks take the best decisions. In our study we analysed the results of only two quantitative methods, but the research could be extended by adding other quantitative forecasting methods or by using qualitative methods or predictions based on combinations of the two types of methods.

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APPENDICES

Appendix 1: Models used for one-month-ahead forecasts (Romania)

Reference period of data series	VAR(2)
February 1999-November 2011	RI_RO = - 0.3043822972*RI_RO(-1) - 0.06548906181*RI_RO(-2) + 0.7771089465*INTEREST_RO(-1) - 0.4053252508*INTEREST_RO(-2) - 1.03325251*UR_RO(-1) - 7.209639485*UR_RO(-2) + 0.1457399131 INTEREST = 0.03233284909*RI_RO(-1) + 0.01251360226*RI_RO(-2) + 0.7343577367*INTEREST_RO(-1) + 0.1121099358*INTEREST_RO(-2) + 1.275399865*UR_RO(-1) - 0.1450771904*UR_RO(-2) + 0.01397483645 UR_RO = - 1.783579012e-05*RI_RO(-1) + 0.0008266571782*RI_RO(-2) - 0.001364145251*INTEREST_RO(-1) + 0.001991114806*INTEREST_RO(-2) + 0.0008974988819*UR_RO(-1) + 0.1618077594*UR_RO(-2) - 0.0001927456217
February 1999-December 2011	RI_RO = - 0.3043822972*RI_RO(-1) - 0.06548906181*RI_RO(-2) - 1.03325251*UR_RO(-1) - 7.209639485*UR_RO(-2) + 0.7771089465*INTEREST_RO(-1) - 0.4053252508*INTEREST_RO(-2) + 0.1457399131 UR_RO = - 1.783579012e-05*RI_RO(-1) + 0.0008266571782*RI_RO(-2) + 0.0008974988819*UR_RO(-1) + 0.1618077594*UR_RO(-2) - 0.001364145251*INTEREST_RO(-1) + 0.001991114806*INTEREST_RO(-2) - 0.0001927456217 INTEREST_RO = 0.03233284909*RI_RO(-1) + 0.01251360226*RI_RO(-2) + 1.275399865*UR_RO(-1) - 0.1450771904*UR_RO(-2) + 0.7343577367*INTEREST_RO(-1) + 0.1121099358*INTEREST_RO(-2) + 0.01397483645
February 1999-January 2011	RI_RO = - 0.3043822972*RI_RO(-1) - 0.06548906181*RI_RO(-2) - 1.03325251*UR_RO (-1) - 7.209639485*UR_RO (-2) + 0.7771089465*INTEREST_RO (-1) - 0.4053252508*INTEREST_RO (-2) + 0.1457399131 UR_RO = - 1.783579012e-05*RI_RO (-1) + 0.0008266571782*RI_RO (-2) + 0.0008974988819*UR_RO (-1) + 0.1618077594*UR_RO (-2) - 0.001364145251*INTEREST_RO (-1) + 0.001991114806*INTEREST_RO (-2) - 0.0001927456217 INTEREST_RO = 0.03233284909*RI_RO (-1) + 0.01251360226*RI_RO (-2) + 1.275399865*UR_RO (-1) - 0.1450771904*UR_RO (-2) + 0.7343577367*INTEREST_RO (-1) + 0.1121099358*INTEREST_RO (-2) + 0.01397483645

Reference period of data series	ARMA
February 1999-November 2011	$ri_t = 0{,}153 - 0{,}218 \cdot ri_{t-1} + \varepsilon_t$ $rs_t = 0{,}753 \cdot rs_{t-1} - 0{,}701 \cdot \varepsilon_{t-1} + \varepsilon_t$ $rd_t = 0{,}126 + 0{,}913 \cdot rd_{t-1} + \varepsilon_t$
February 1999-December 2011	$ri_t = 0{,}1534 - 0{,}218 \cdot ri_{t-1} + \varepsilon_{1t}$ $rs_t = 0{,}749 \cdot rs_{t-1} - 0{,}695 \cdot \varepsilon_{2t-1} + \varepsilon_{2t}$ $rd_t = 0{,}125 + 0{,}913 \cdot rd_{t-1} + \varepsilon_{3t}$
February 1999-January 2011	$ri_t = 0{,}154 - 0{,}217 \cdot ri_{t-1} + \varepsilon_t$ $rs_t = 0{,}761 \cdot rs_{t-1} - 0{,}715 \cdot \varepsilon_{t-1} + \varepsilon_t$ $rd_t = 0{,}123 + 0{,}914 \cdot rd_{t-1} + \varepsilon_t$

Reference period of data series	Models having variables with lags
February 1999-November 2011	$ri_t = 0{,}111 + 0{,}224 \cdot rd_{t-1} + \varepsilon_t$ $rd_t = 0{,}097 + 0{,}248 \cdot ri_{t-2} + 0{,}254 \cdot ri_{t-1} + \varepsilon_t$
February 1999-December 2011	$rd_t = 0{,}096 + 0{,}248 \cdot ri_{t-2} + 0{,}255 \cdot ri_{t-1} + \varepsilon_t$ $ri_t = 0{,}11 + 0{,}226 \cdot rd_{t-1} + \varepsilon_t$
February 1999-January 2011	$rd_t = 0{,}095 + 0{,}249 \cdot ri_{t-2} + 0{,}257 \cdot ri_{t-1} + \varepsilon_t$ $ri_t = 0{,}11 + 0{,}226 \cdot rd_{t-1} + \varepsilon_t$

Source: author's calculations using EViews

Models used for one-month-ahead forecasts (Poland)

Reference period of data series	VAR(2)
February 1999-November 2011	INTEREST_POL = 0.7926340046*INTEREST_POL(-1) + 0.1894527393*INTEREST_POL(-2) - 0.4883153818*UR_POL(-1) + 0.4475489876*UR_POL(-2) + 0.1607552002*RI_POL(-1) - 0.1795897897*RI_POL(-2) + 0.5908711632 UR_POL = - 0.0123900645*INTEREST_POL(-1) + 0.02142196376*INTEREST_POL(-2) + 1.728263482*UR_POL(-1) - 0.7334370004*UR_POL(-2) - 0.014740236*RI_POL(-1) + 0.01559288723*RI_POL(-2) + 0.001348542061 RI_POL = - 0.01381918012*INTEREST_POL(-1) + 0.01391619956*INTEREST_POL(-2) + 0.09226325601*UR_POL(-1) - 0.1148767837*UR_POL(-2) + 1.354656406*RI_POL(-1) - 0.3627512795*RI_POL(-2) + 0.5086067995
February 1999-December 2011	INTEREST_POL1 = 0.7914478899*INTEREST_POL1(-1) + 0.1909869209*INTEREST_POL1(-2) - 0.4852097318*UR_POL1(-1) + 0.4449066096*UR_POL1(-2) + 0.1682203409*RI_POL1(-1) - 0.1865132836*RI_POL1(-2) + 0.5807508455 UR_POL1 = - 0.01199825559*INTEREST_POL1(-1) + 0.020915178*INTEREST_POL1(-2) + 1.727237593*UR_POL1(-1) - 0.7325641444*UR_POL1(-2) - 0.01720619365*RI_POL1(-1) + 0.01787992288*RI_POL1(-2) + 0.004691583523 RI_POL1 = - 0.01461298871*INTEREST_POL1(-1) + 0.01494295234*INTEREST_POL1(-2) + 0.09434171566*UR_POL1(-1) - 0.1166451981*UR_POL1(-2) + 1.359652459*RI_POL1(-1) - 0.3673848354*RI_POL1(-2) + 0.5018337657
February 1999-January 2011	INTEREST_POL1 = 0.7920313511*INTEREST_POL1(-1) + 0.1910532605*INTEREST_POL1(-2) - 0.4848357525*UR_POL1(-1) + 0.4450449011*UR_POL1(-2) + 0.17332748*RI_POL1(-1) - 0.1909130516*RI_POL1(-2) + 0.5687475512 UR_POL1 = - 0.01178382319*INTEREST_POL1(-1) + 0.02093955898*INTEREST_POL1(-2) + 1.727375037*UR_POL1(-1) - 0.7325133198*UR_POL1(-2) - 0.01532922893*RI_POL1(-1) + 0.01626292965*RI_POL1(-2) + 0.0002801587044 RI_POL1 = - 0.01367410114*INTEREST_POL1(-1) + 0.01504970392*INTEREST_POL1(-2) + 0.09494351149*UR_POL1(-1) - 0.1164226637*UR_POL1(-2) + 1.367870708*RI_POL1(-1) - 0.3744648049*RI_POL1(-2) + 0.4825184387

Reference period of data series	ARMA
February 1999-November 2011	$ri_t = 0{,}293 + 0{,}43 \cdot ri\_pol_{t-1} + \varepsilon_t$ $ur\_pol_t = -0{,}024 + 0{,}809 \cdot ur\_pol_{t-1} + \varepsilon_t$ $\operatorname{int} erest\_pol_t = -0{,}06 - 0{,}157 \cdot \operatorname{int} erest\_pol_{t-1} + \varepsilon_t$
February 1999-December 2011	$ri_t = 0{,}294 + 0{,}42 \cdot ri\_pol_{t-1} + \varepsilon_t$ $ur\_pol_t = -0{,}0243 + 0{,}81 \cdot ur\_pol_{t-1} + \varepsilon_t$ $\operatorname{int} erest\_pol_t = -0{,}062 - 0{,}157 \cdot \operatorname{int} erest\_pol_{t-1} + \varepsilon_t$
February 1999-January 2011	$ri_t = 0{,}2943 + 0{,}427 \cdot ri\_pol_{t-1} + \varepsilon_t$ $ur\_pol_t = -0{,}025 + 0{,}82 \cdot ur\_pol_{t-1} + \varepsilon_t$ $\operatorname{int} erest\_pol_t = -0{,}063 - 0{,}1572 \cdot \operatorname{int} erest\_pol_{t-1} + \varepsilon_t$

Reference period of data series	Models having variables with lags
February 1999-November 2011	$ri\_pol_t = 12{,}815 - 1{,}6 \cdot \operatorname{int} erest\_pol_{t-1} + \varepsilon_t$ $\operatorname{int} erest\_pol_t = 7{,}116 - 0{,}347 \cdot ri\_pol_{t-2} + 2{,}111 \cdot ri\_pol_{t-1} + \varepsilon_t$
February 1999-December 2011	$ri\_pol_t = 12{,}815 - 1{,}6 \cdot \operatorname{int} erest\_pol_{t-1} + \varepsilon_t$ $\operatorname{int} erest\_pol_t = 7{,}116 - 0{,}347 \cdot ri\_pol_{t-2} + 2{,}111 \cdot ri\_pol_{t-1} + \varepsilon_t$
February 1999-January 2011	$ri\_pol_t = 12{,}815 - 1{,}6 \cdot \operatorname{int} erest\_pol_{t-1} + \varepsilon_t$ $\operatorname{int} erest \quad pol_t = 7{,}116 - 0{,}347 \cdot ri \quad pol_{t-2} + 2{,}111 \cdot ri \quad pol_{t-1} + \varepsilon_t$

Source: author's calculations using EViews

Models used for one-month-ahead forecasts (Czech Republic)

Reference period of data series	VAR(2)
February 1999-November 2011	INTEREST_CR = 1.032955367*INTEREST_CR(-1) - 0.07435234854*INTEREST_CR(-2) + 0.01622901437*RI_CR(-1) - 0.02073687184*RI_CR(-2) - 0.2030556239*UR_CR(-1) + 0.1918379768*UR_CR(-2) + 0.1620812519 RI_CR = 0.07613664735*INTEREST_CR(-1) - 0.08479586276*INTEREST_CR(-2) + 1.091002306*RI_CR(-1) - 0.1006512028*RI_CR(-2) - 0.1904207202*UR_CR(-1) + 0.1284548155*UR_CR(-2) + 0.6752498405 UR_CR = - 0.1503567547*INTEREST_CR(-1) + 0.1438367589*INTEREST_CR(-2) - 0.01694177212*RI_CR(-1) + 0.0156354488*RI_CR(-2) + 1.616200903*UR_CR(-1) - 0.633750514*UR_CR(-2) + 0.1397074831
February 1999-December 2011	INTEREST_CR = 1.03212544*INTEREST_CR(-1) - 0.07367847639*INTEREST_CR(-2) + 0.01566704719*RI_CR1(-1) - 0.02030389812*RI_CR1(-2) - 0.2054864774*UR_CR1(-1) + 0.1938526614*UR_CR1(-2) + 0.1654661173 RI_CR1 = 0.08149977622*INTEREST_CR(-1) - 0.08915054128*INTEREST_CR(-2) + 1.094633835*RI_CR1(-1) - 0.103449154*RI_CR1(-2) - 0.1747121244*UR_CR1(-1) + 0.1154355747*UR_CR1(-2) + 0.6533762543 UR_CR1 = - 0.1495715212*INTEREST_CR(-1) + 0.143199176*INTEREST_CR(-2) - 0.01641006788*RI_CR1(-1) + 0.01522579148*RI_CR1(-2) + 1.61850085*UR_CR1(-1) - 0.6356567043*UR_CR1(-2) + 0.1365048988
February 1999-January 2011	INTEREST_CR = 1.031008851*INTEREST_CR(-1) - 0.07233575969*INTEREST_CR(-2) + 0.01671004085*RI_CR1(-1) - 0.02111360193*RI_CR1(-2) - 0.2024762562*UR_CR1(-1) + 0.1916516303*UR_CR1(-2) + 0.1588725354 RI_CR1 = 0.05833066638*INTEREST_CR(-1) - 0.06128930788*INTEREST_CR(-2) + 1.116275846*RI_CR1(-1) - 0.1202504248*RI_CR1(-2) - 0.112250345*UR_CR1(-1) + 0.06976440581*UR_CR1(-2) + 0.5165601085 UR_CR1 = - 0.1488160438*INTEREST_CR(-1) + 0.1422907021*INTEREST_CR(-2) - 0.01711575102*RI_CR1(-1) + 0.01577363214*RI_CR1(-2) + 1.616464153*UR_CR1(-1) - 0.6341675*UR_CR1(-2) + 0.140966076

Reference period of data series	ARMA
February 1999-November 2011	$ri\_cr_t = 0{,}152 + 0{,}985 \cdot ri\_cr_{t-1} - 0{,}972 \cdot \varepsilon_{t-3} + \varepsilon_t$ $ur\_cr_t = -0{,}012 + 0{,}688 \cdot ur\_cr_{t-1} + \varepsilon_t$ $\mathrm{int}\,erest\_cr_t = 1{,}662 + 0{,}958 \cdot \mathrm{int}\,erest_{t-1} + \varepsilon_t$
February 1999-December 2011	$ri\_cr_t = 0{,}152 + 0{,}987 \cdot ri\_cr_{t-1} - 0{,}972 \cdot \varepsilon_{t-3} + \varepsilon_t$ $ur\_cr_t = -0{,}0127 + 0{,}689 \cdot ur\_cr_{t-1} + \varepsilon_t$ $\mathrm{int}\,erest\_cr_t = 1{,}667 + 0{,}959 \cdot \mathrm{int}\,erest_{t-1} + \varepsilon_t$
February 1999-January 2011	$ri\_cr_t = 0{,}153 + 0{,}988 \cdot ri\_cr_{t-1} - 0{,}973 \cdot \varepsilon_{t-3} + \varepsilon_t$ $ur\_cr_t = -0{,}013 + 0{,}689 \cdot ur\_cr_{t-1} + \varepsilon_t$ $\mathrm{int}\,erest\_cr_t = 1{,}667 + 0{,}96 \cdot \mathrm{int}\,erest_{t-1} + \varepsilon_t$

Reference period of data series	Models having variables with lags
February 1999-November 2011	$ri\_cr_t = 0{,}197 - 0{,}546 \cdot ur_{t-2} + \varepsilon_t$
February 1999-December 2011	$ri\_cr_t = 0{,}198 - 0{,}546 \cdot ur_{t-2} + \varepsilon_t$
February 1999-January 2011	$ri\quad cr_t = 0{,}198 - 0{,}5463 \cdot ur_{t-2} + \varepsilon_t$

Source: author's calculations using EViews

APPENDIX 2

One-month-ahead forecasts based on econometric models (Romania)

Inflation rate	VAR(2) models	ARMA models	Models with lags
December 2011	28,8438	28,83771	28,83325
January 2012	28,91652	28,91941	28,90285
February 2012	29,02535	29,02783	29,01578

Unemployment rate	VAR(2) models	ARMA models
December 2011	0,072676	0,072984
January 2012	0,069938	0,069827
February 2012	0,071453	0,071988

Interest rate	VAR(2) models	ARMA models	Models with lags
December 2011	0,064843	0,175941	0,171848
January 2012	0,101606	0,170376	0,143031
February 2012	0,047752	0,148866	0,143098

Source: author's calculations using Excel

One-month-ahead forecasts based on econometric models (Poland)

Inflation rate	VAR(2) models	ARMA models	Models with lags
December 2011	22,13384	19,581	15,455
January 2012	22,61761	19,839	16,047
February 2012	23,48779	19,183	15,871

Unemployment rate	VAR(2) models	ARMA models
December 2011	10,07158	8,066
January 2012	10,01034	8,069
February 2012	10,17185	8,1469

Interest rate	VAR(2) models	ARMA models	Models with lags
December 2011	4,4434	4,7822	4,5307
January 2012	4,1597	4,72411	4,485
February 2012	4,1572	4,74138	4,9656

Source: author's calculations using Excel

One-month-ahead forecasts based on econometric models (Czech Republic)

Inflation rate	VAR(2) models	ARMA models	Models with lags
December 2011	16,6238	16,411	13,2974
January 2012	16,7299	16,9035	13,4066
February 2012	16,638	18,972	13,4612

Unemployment rate	VAR(2) models	ARMA models
December 2011	6,0388	4,5288
January 2012	6,2199	4,5969
February 2012	6,203	4,5976

Interest rate	VAR(2) models	ARMA models
December 2011	0,70482	0,34218
January 2012	0,67838	0,32302
February 2012	0,72238	0,31685

Source: author's calculations using Excel

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