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The Rhetoric of PDP in Higher Education: A Gender-Neutral Discourse?

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Abstract

Personal development Planning (PDP) has become a central feature for students in higher education and is linked to employability. This has come about as the result of an awareness that in a globalized education and workplace market, students need to be more competitive in developing and marketing their academic and other skills. However, this inner-directed process has spawned a discourse of voluntarism that dissolves engagement with political issues such as the gender implications of programmes of study and associated careers. This paper argues that a gender-neutral focus on the 'person' can potentially lead to the maintenance of inequalities for career pathways for men and women. This conceptualization is compared with that of work-life balance which, in effect, is taken as applying more to women than men, but which is formulated within gender-neutral discourse.

Keywords: personal development planning, gender, higher education

1. INTRODUCTION

This paper considers the ideological effects of recent discourse concerning personal development planning (PDP) in higher education (HE). Whilst on the face of it this discourse may seem personally liberating, with the aim of engaging students and developing them as independent learners and career planners, there are a number of problematic issues that follow from this inward focus on personal reflection. The root of this is the inherent voluntarism in such a focus and the concomitant dissolving of wider political matters that impact upon the individual into an intrapsychic world. Whilst PDP may appear gender-neutral, it is argued that this is a discursive veneer that covers over the problematic nature of gendered notions such as the 'independent learner', 'graduate attributes' and a gender-divided labour market.

The discourse of PDP is now entrenched in policy initiatives at national and trans-national level in higher education. There is an increasing emphasis on encouraging students to engage in PDP, both in an academic and vocational sense. This is taken as developing independence in students so that they can become more autonomous learners and career planners Wilson-Medhurst, 2005a; Wilson-Medhurst, 2005b). Meanwhile in the world of work there has been a raft of 'family-friendly' policy initiatives that encourage people to attain a degree of work-life balance (WLB). The intention here is to afford employees the opportunity to achieve a degree of balance between their personal and professional lives, especially given the increasing emphasis on flexible working patterns (Kelloway, Gottlieb and Barham, 1999; Gershuny, 2000). This is now all the more relevant in a post COVID-19 environment in which flexible working is likely to become much more common.

It is also possible to trace an increasing trend towards decision-making as being located 'down' at the individualized sphere of personal choice. This perspective has most notably been advocated by Ulrich Beck in terms of a transition in the nature and experience of risk and representing a "categorical shift" with respect to the individual and society (Beck: 127). In this risk society 'old' collective forms of identity have replaced by 'new'

identifications that are rooted in individual actions. Beck traces this shift back to the 1970s and argues that the Fordist era of production and wealth distribution, in which economic and political interests were bound up with the desired ends of full employment and high standards of welfare and healthcare, ran into problems. Beck reasons that negative outcomes such as rise of mass unemployment, industrial pollution and nuclear hazards effectively created a schism in the institutional structures associated with Fordism and ushered in era preoccupied with the problem of insecurity and risk. In the risk society perspective, citizens are now individually accountable for themselves and their economic opportunities. Thus, Beck notes that the traditional place of family ties and class has given way to secondary agencies and institutions which 'stamp the biography of the individual and make that person dependent upon fashions, social policy, economic cycles and markets' (Beck, 1992: 131).

This paper therefore addresses these discourses in terms of the tensions that arise when educational and career matters are viewed as being related to individual reflection and choice. Whilst Beck's notion of the 'individualized individual' seems to fit this discourse, it nevertheless glosses over the way in which this focus loses sight of the gendered nature of much of this policy and practice in HE. The first section considers the developments in PDP in higher education and how this has led to a concern with a masculinist and instrumental approach to learning to the exclusion of other aspects which impact upon the student experience. The second section considers the parallel discourse of WLB and the way in which a gender-neutral terminology leaves matters up to individuals and obscures the issue of how this is addressed and targeted more towards women than men in the workplace. The argument advanced here is that this individualizing discourse dissolves away any sense of the gendered backdrop to these discourses.

2. PDP in higher education

The basic principles of PDP are action-orientated and cyclical (Clegg and Bradley, 2006) and include the following dimensions: (i) goal setting and action planning; (ii) doing (learning through the experience of doing with greater awareness); (iii) recording (thoughts, ideas, experiences, evidence of learning); (iv) reviewing (reflections on what has happened, making sense of it all), and (v) evaluating (making judgements about self and own work and determining what needs to be done to develop, improve, and move on). However, whilst these principles are readily accepted, their translation into curricular developments and relationship with subject provision is less clear. This is a significant issue as the first ever mapping and synthesis review of PDP processes found that most, "adopted a prescriptive approach to PDP implementation in order to achieve course-specific outcomes" (Gough et al., 2003: 2). The danger with such prescriptive approaches is that PDP may come to be seen as an imposition rather than something that is integral to the higher education experience. Moreover, it can be viewed as an end in itself rather than as a means to a genuine engagement with the provisional nature of knowledge.

Therefore, if the process of PDP is to become an integral part of the student learning experience, a number of fundamental constructs need to be accepted by academic staff and students. It is crucial that these processes are integral to the whole learning experience of a student in higher education and thus should be embedded firmly with the rest of the curricula and student experience, and not seen as a separate activity or concept. The process also needs to be underpinned by institutional strategies, especially for teaching, learning and assessment and student support and needs to be learner-centred, in terms of supporting of a wide-range of different learning styles and motivations. The main outcome from such processes in terms of personal development will likely be a significant contribution to students becoming independent, autonomous, self-aware learners. In other words, staff and students should be able to engage actively with the PDP process rather than experiencing it as an imposition.

However, whilst such an approach can be enabling for students in their learning there are tensions that emerge with such a focus on the individual student. These are often political issues concerned with matters such as (i) national, institutional or departmental PDP policies; (ii) access to PDP records; and (iii) academic or vocationally driven. These are issues which can become dissolved in the instantiation of PDP in terms of the overall focus on the individual and the need to get such a policy translated into action, and especially via the increasing reliance on virtual learning environments. The nature of any virtual learning environment defines the nature of the learning process via provision of tools and templates for actions. All too often the learning process can be subtly moulded as an instrumental rather than a critical process. Learning in this context can become a process of managing information (including personal information) rather than discovery, insight and growth (Brabazon, 2007). Thus, as some have suggested this has enabled a managerial model of learning to be surreptitiously substituted for the dialogic and critical model which characterizes the ideal of learning in higher education (Lambier and Ramaekers, 2006).

Others have pointed towards the tensions that arise in the different uses to which PDP is put. Three "ideal types" encapsulating the attitudes of different subject or discipline areas, have been distilled. The first ideal type, the

professional, is strongly governed by the requirements stipulated by professional and statutory bodies such as specific health care professional bodies. The second, employment, includes both a general orientation to graduate employment and also specific work placement during study. This model is associated with areas such as management and business, sport and leisure, and those areas of applied science and engineering where the course focus is primarily towards employment rather than discipline. The final model, academic, is focused on the academic development of the student, incorporating meta-cognitive skills and those of the specific subject discipline. Humanities and social sciences predominate in the academic. The model also included some areas of pure science where the emphasis was more on subject understanding (Clegg and Bradley, 2006).

The aforementioned tensions in PDP were drawn out an articulated in interviews conducted with staff and students in the social sciences in one recent study (Moir et al., 2008; Moir 2009). One major aspect of this is the extent to which PDP is dealt with on an institutional-wide basis and its relevance for social science. In effect this is an issue of generality versus specificity. However, there is also more to this that bears closer inspection in terms of the way that PDP can, at a broad level appear to be related to the issue of enhancing employability, which some staff do not see as their subject in the sense that it is not an academic matter as such. On the other hand, there are members of staff who have suggested that PDP is something that could be used to encourage independent learning and reflexivity which they see as a key academic skill for social science students. A key issue that cuts across the above practical concerns is that of ensuring that the 'personal' nature of the process stays with the student whilst ensuring engagement in order to bring about the stated aims of PDP. On the one hand, it is something that is within the individual student's control, but on the other hand its needs to be accessible to allow staff to assess its impact.

However, it is also clear that whilst PDP is almost universally accepted in principle, its more avowedly vocational association with graduate attributes and employability has gained considerable traction in recent years. Perhaps this is not to be entirely unexpected given that PDP must function as a public institutional quality enhancement measure related to politico-economic matters, and as something that is private and personal to the student and within her control. The concept of 'graduate employability' itself has been the subject of debate in terms of its operationalization (Hinchliffe and Jolly 2011). Yorke and Knight (2007: 158) defined it as 'a graduate's suitability for appropriate employment'. Dacre-Pool and Sewell (2007) point to a range of different aspects of the concept, including: subject knowledge, generic skills, emotional intelligence, career development learning, reflection and evaluation, self-confidence, self-esteem and self-efficacy. These aspects align with those of PDP in terms of a focus on the self as a project to be worked upon. More recently, Barton, Bates and O'Donovan (2019) have demonstrated how volunteering among psychology students is related to employability and enhanced self-confidence.

There clearly an ideological focus on ensuring graduates are ready for the employment market, although this discourse has been the subject of critique. For example, Fotiadou (2020) used the methodology of corpus-based critical discourse analysis in the analysis of 2.6 million words deriving from 58 university websites, and more specifically the careers services. Her analysis highlights the ways in language used by careers services reproduces and promotes a neoliberal ideology in which the notion of employability is related to fierce competition in the graduate job market. More rarely has the academic side of PDP been considered and problematized as equally ideological. Take for example, the rhetoric of independent learning that underlies much of PDP. One the face of it, 'independence' is seen as being crucial to the not only such matters a lifelong learning, but also a defining feature of what it is to be a graduate. It is therefore, almost without question, accepted as being both valuable both for the individual and for society. However, whilst this rhetoric may appear emancipatory it is nevertheless ideological in the sense that it is firmly rooted in the noted of self-reliance and the utilization of rational goal-driven thinking. This kind of thinking is traditionally associated with a masculine approach to such matters, and therefore whilst normatively presented as being desirable, is problematic for women. This has been highlighted in a recent qualitative study of students at a post-1992 university in the U.K. in which the dominant constructions of the independent learner in which asking for help is associated with what may regarded as technical matters of study rather than other forms of emotional support. In effect, a masculinized 'techno-managerial' agenda dominates such 'help' as a means to developing independence thereby promoting a rationalist model of learning Leathwood (2006).

While there is a positive connotation with the notion of personal development, this is not simply about a neutral inner process. However, the dominant discourse is one of a concern with the notion of individual self-direction and planning related to politico-economic aims such as employability and improving the nature of graduates as future employees in terms of national competitiveness in the face of a globalized knowledge-driven economy. This has gained much more of a hold in the light of what is commonly referred to as the 'Bologna process' which was instituted following the Bologna declaration of 1999 which aims to create a European-wide higher educational area by 2010. Although this may take more time than anticipated, a number of structural changes have taken place in European universities that not only regulate the practice of studying but also include changes in the goals of higher

education to meet the demands of the knowledge economy. The adoption of personal development planning and progress files are very much part of this process. These developments have also intensified following the European Union Lisbon Treaty of 2007 and European Commission Lisbon Agenda for addressing the globalized knowledge economy. Aspects of this agenda are aimed at improving graduates' employability and competitiveness. Graduates are required to be adaptable, multi-skilled and flexible, and able to take charge of and plan their own careers in a rapidly changing workplace. The engine of this is PDP with an accompanying discourse of 'graduate attributes' (Barnett, 2006).

Whilst this discourse aims to empower students by equipping them with 'key skills' to be adaptable and flexible, it also normalizes the view that coping with the labour market demands is an individual responsibility rooted in planning and decision-making. This trend has not been without critics who have drawn upon the Foucauldian notion of 'governmentality' to highlight the neoliberal focus on how individuals adapt to 'the market' as a means of social control (Fejes, 2007; Bloch, 2008). Still others have highlighted the depoliticized nature of what they view as the recent uptake by newer universities, in particular, of graduate attributes (via a focus on employability) as a way of legitimating what they offer whilst 'traditional' universities still largely adopt a disciplinary approach to their legitimation (Leathwood and Read, 2009). It is argued that this focus on the personal in this context reinforces the hegemonic dominance of vocationalism and downplays any sense of the gendered nature of associated attributes.

The specification of these attributes and their mapping onto curricular outcomes is now well underway in U.K. HE and in Scotland with its emphasis on an enhancement-led approach. A number of HEI websites now make explicit reference to these attributes, and as noted above, the newer post-1992 universities have embraced these as a means of legitimating their vocational credentials. However, of particular interest for this paper is the gendered nature of these graduate attribute statements which are commonly framed around masculinized characteristics such as competitiveness and the desire to succeed, assertiveness through driving change, and a rationalized notion of handling knowledge in terms of complexity. Some make reference to the ability to work in teams, but this is generally framed around the notion of 'communication skills' from individualistic perspective. Much of this discourse of graduate attributes is linked to a culture of audit that requires these to be evidenced in ways that relate to HE and governmental policy documents. Thus, it is not uncommon for universities to now adopt strategic planning models that explicitly link such policy initiatives to pedagogic targets that make explicit how, where and when these attributes are developed or attained. The current economic recession has intensified this process as universities strive to sell the vocational worth of their programmes in terms of marketable skills that graduates can expect to exit with that will make them more employable.

Whatever perspective is taken on the merits or problems of PDP, there are underlying ideological tension between the notion of individual academic development and the concomitant contribution to an educated citizenry, and the imperative that requires knowledge linked to economic wealth creation. However, in an era of mass higher education it is often the latter that is a priority for governments. This political dimension to PDP can be lost when located inside the practical matters associated with education as an inner-directed process. Once set within this discourse then the practicalities of such matters curricular design, delivery and assessment come into play. However, this is a carefully managed process in which 'personal development' is circumscribed in a such a manner as to be related to masculinized attributes. Learning the process of PDP therefore becomes the end in an instrumentally-driven fashion and its gendered nature is occluded within the rhetoric of employability.

3. Work-life balance as gender neutral discourse

This kind of focus on decision-making in terms of personal development can also be found in the emergence of a discourse concerning 'work-life balance' and 'individual choice' rhetoric in today's workplace (Perrons et al., 2009). The use of gender-neutral language in the WLB rhetoric of today's world of work can lead to the impression that gender stereotypes are no longer a constraining factor, especially for women. This again seems to accord with Beck's notion of the 'individualized individual' who must chart their life course by weighing up matters and making decisions and choices. Parents are seen to be exercising choice when they take up the flexible work options on offer in order to balance their family and work commitments in accordance with their needs. In this way flexibility is extended beyond the attributes of the person and into the management of their family life.

Embedded within this discourse of balancing work and family commitments, and the employment policies and practices predicated upon this, is the view that as far as is reasonable, employers and employees should work together to try and ensure that family commitments are not sacrificed at the expense of work. The complexity of balancing work and family demands has been recently examined in terms of understanding the demands of both settings, the resources of both settings, the specific abilities of the individual parent or partner, and the fit between these aspects (Voydanoff, 2005). For example, many occupations may require additional hours at unexpected times

in order to complete a project by a set deadline. This is a demand, but it may also provide an additional resource in terms of personal prestige and career advancement. However, determining the actual benefit of this may require additional cost in terms of decreased time with a partner or children. The concept of boundary spanning has been used to explain this in terms of the impact that meeting the demands of one setting has on the other setting. Thus, determining what makes for balance between work and family requires assessing the settings, resources, and demands separately, and then assessing the trade-offs individuals make between them, and the impact this has on the whole family.

As in virtually all occupations, women as the child-bearers carry the major responsibility of child care arrangements (as well as the care of ageing parents), and unless 'family-friendly' policies are part of the work environment, women employees are less likely to have a long-term and sustainable career and may have to take career breaks. Returning to work after such a break becomes an increasingly difficult task given that the time away may lead to unfamiliarity with new technologies and work procedures. Furthermore, pregnancy and childbearing have particular negative consequences for women in the early part of their careers, given that achievement and promotion during these years coincides with fertility.

Hence the turn to current approaches that call upon the need for more recognition of the diversity of flexible working styles and WLB needs, rather than policies which specifically enable working mothers to manage paid work and family needs. The aim is try and move beyond simply viewing equal opportunities policies as being a matter of human resources, and one primarily directed at women, to being concerned about all employees and an issue of concern for all employers and organizations (Sinclair, 2000; Lorbiecki and Jack, 2000). This discourse of diversity is meant to be open to all and is based upon the view that it is a matter of individual circumstances and choices. However, this approach to diversity management whilst focusing on the individual has a blind spot when it comes to the issue of power differentials or structural inequalities (Sinclair, 2000). The argument that we are all individuals and are all have different circumstances effectively ensures that the pervasive male models of work are left unchallenged in the background. In doing so, a focus on diversity can absolve political and organizational responsibilities for tackling equal treatment and equal opportunity for women at work (Linnehan and Konrad, 1999).

In one of the earliest applications of this approach a study of equal opportunities talk, similarly found a mix of 'principle versus practice' discursive constructions with regard to gender and employment opportunities (Wetherell, Stiven, and Potter, 1987 Supporting equal opportunities in principle, positioned the speaker as liberal and fair-minded whilst talking about (external) practical employment issues (e.g. maternity cover, childcare, emotional unsuitability to stressful working environments) served to undermine this without any personal negative attribution to the speaker. In other words, participants in the study could at one and the same time appeal to identifying in principle with equal opportunities in an abstract sense whilst citing practical affairs as somehow inevitably at odds with this in how things are in the 'real world' of day-to-day living. In more recent work in this vein, sameness and difference discourses have been identified as being used by bank managers when alluding working mothers whilst the work context was portrayed as gender neutral (Meriläinen, 2000). It has also been shown how an abstract principle of individualism is favoured in professional men's accounts on discrimination and equality (Riley, 2002).

Other discourse analytic work has shown how gender-blind approach to talk about such issues through terms such as 'flexibility', 'flexible working' and 'work–life balance' were used to occlude inequality for women (Smithson and Stokoe, 2005). The exclusion of talk about men or fathers in managers' accounts, and the construction of a 'generic she' or 'generic female parent' implicitly assumes that the mother, and not the father, is responsible for childcare (Stokoe and Smithson, 2001). Participants' interview accounts routinely followed a 'gender-neutral' trajectory, by moving from an opening response to such questions in terms of gender making no difference, to talking about gender problems in a careful and implicit manner, and then by concluding that gender is not issue. This three-part discursive sandwich embeds any talk of gender as problem within an overall gender-neutral account as follows: (a) suggest gender is not an issue; (b) describe a gender problem or inequality; (c) conclude that gender is not an issue. However, such accounts are problematic given that they dilute any sense of gender as a political issue because they fall back on a 'generic she' as the subject of equal opportunity. In effect they minimize any notion of gendered work practices and fail to tackle the male model of work. The net effect of this is to therefore reproduction of gender differences within a rhetoric of working in a non-gendered organisation.

The distinction between male model of work as the norm and any deviation from this as problematic is why many women still feel compelled to fit in with this prevailing view as the acceptable nature of how employment is structured. The use of gender-neutral terms inevitably leads to falling back on the individual as the source of freely made decisions about working hours, parenting and childcare. So long as both women and men construct these 'decisions' and 'choices' as primarily a matter for women then a gender-neutral language of work-life balance may do little more than preserve the status quo of male patterns of work.

There are also generational and socio-economic class issues that are bound up with the discourses that women draw upon when discussing the relationship between work and family commitments. Data from in-depth interviews undertaken as part of a generational study of Australian women and found that the 'progress narrative' is no longer a major discourse for young women, but rather gender equity is taken for granted. Motherhood continues to define and shape their working arrangements, but the discourses they use to make sense of the work-life balance tensions are framed in terms of 'choice', not 'equity'. The roles of 'mother' and 'worker' are not talked about by younger women as separate, but rather inter-twined. Gender still shapes young women's working lives, but in more complex ways than previously, and is related to the expansion of lifestyle options as well as class factors.

The young women interviewed place the constraints that affect achieving work-life balance in terms of the limited resources they have available to them as self-directed individual women. Gender equity discourses were therefore not used by the young women interviewed to understand the pressures and constraints that confront them, given that they presented themselves as facing individual choices in their lives. This discourse of individualism was also apparent in how they talked about perceived obstacles that they face as individual agents, who also happen to be women. As such choices are presented as depending on the availability and of resources and access to them. They did not identify with a particular social class but rather talked about life choices as being the result of their own individual achievements or failings. This discourse of WLB as being a matter of individual choice does not stem from notions of equity as a driving force for policies in this area but rather is about meeting the demands of different expectations and preferences for the ways in which people organize their lives according to different access to resources (Everingham, Stevenson, and Warner-Smith, 2007).

Previous research has highlighted the complexity of how people can at one and the same time support family-friendly polices as well as undermine such support through talking about local practical concerns. These discursive constructions therefore constitute a barrier to the promotion of WLB issues. The current rollout of WLB initiatives across the European Community does little to tackle the engrained ideology of this being more of a concern for women rather than men. The male model is left in place and whilst the issue of attaining a favourable WLB is constructed as a problematic issue where policy initiatives need to be directed.

In a climate when it is regarded as 'politically correct' to espouse a positive endorsement of work-life balance initiatives and policies then this does not pose a problem for men who can show support for such a position safe in the knowledge that it does not impact on them to nearly the same extent as women. It is also the case that engrained views on women as being responsible for childcare restricts their geographical mobility unlike men and, as in many fields of employment, mobility is often an advantage in terms of gaining experience and promotion. The net effect of this is that it leads to women working lower down the career ladder with men pursuing their careers at higher levels and in senior positions. This maintains a role model of top professional workers as male, again maintaining such work as a normatively male pursuit whilst women are predominately in junior or support roles given their work-life balance 'needs'.

The rhetoric of WLB is often equated with that of personal choices and decisions. This creates a dichotomy between personal life and career and the notion that this tension requires some resolution. The solution to this is offered in terms of a discourse of individual personal choice and decision-making. Thus, individuals can weigh up matters up about attaining a WLB through adjusting their personal lives or the occupational role aspects of their identity. However, this again ignores the extent to which an occupational role is contractual and normatively presented as a given whilst personal life is not subject to the same legal-rational authority (Weber, 1978). In other words, there is less scope to change an occupational role than there is to change personal circumstances. A rhetoric of individualism ensures that the gendering of childbearing and care are cloaked within a language of personal choice, as if such matters were equally distributed amongst men and women when patently they are not. As previously noted, this kind of gender-blind rhetoric may at first seem liberal and reasonable but can in fact serve to work against women.

The final point to make revolves around the 'sameness-difference' opposition. Given that occupational roles are in themselves gender-neutral then the assumption is made that all who undertake an occupation can do so in the knowledge that it is performance in the occupation itself that matters. It is the demands of the job itself that are taken as requiring that those who undertake this work to be treated as being the same, irrespective of gender. To argue for gender difference and its impact on occupational performance would be to go against the task requirements of work. However, people can switch between the 'same-difference' ends of the explanatory dualism when it comes to talking about equal opportunities in employment and the position of women (Nentwich, 2006).

What is evident from the above is the parallel ideology that can be drawn with PDP. As with PDP, the discourse of WLB involving individual reflection and decision-making is something that is, almost without question, accepted as a proper and entirely appropriate basis for people's actions. However, this danger of the reduction of such matters down to this individual level is that it actively occludes the ideological basis of this discourse and the practices that

hold in place an overall masculinist approach to how the personal is related to education and the workplace. Whilst social theorists such as Beck have contributed to our awareness of individualization as a key feature of reflexive modernity this kind of focus disembeds the individual from society and in so doing diverts attention away from power inequalities (Francis & Skelton, 2008).

4. Conclusion

The emergence of a discourse of personal development related to education and the workplace has intensified in recent years. On the face of it, this may at first appear as a welcome development. The fast-paced and evolving nature of the knowledge economy has led many to argue for a more flexible workforce capable of keeping pace by planning and managing their own learning, developing themselves, and managing their own career. Mass higher education has also come to be regarded as an essential means of meeting the demands of the knowledge economy and students are urged to engage in PDP in order to make themselves more adaptable and marketable through this process. In tandem with this has been a concern to manage the demands of work and family life, and again this has been placed in the hands of the individual. Therefore, a rhetoric of the individual as being much more in control of their own destiny has taken root.

However, this paper has argued that this largely illusory, and that the exclusive psychologization of these matters has ideological effects. A neoliberal discourse which stresses individual control, planning and choice is often justified in terms of a paradoxical discourse of a global knowledge economy that requires and structures the need for a greater focus on the flexibility of individuals. However, it is not the case that individuals can simply develop themselves through exercising freedom of choice but rather that an internationalized and globalized knowledge economy demands that people are ever-increasingly more adaptable within a world of increasing market-like structures. As we look outward to the global impact of this world upon our lives, so we are encouraged to look inward as a means of generating our capacity to change to meet these demands. This is likely to become more prevalent in a post-CIVID-19 world.

The effect of this focus on the individual is to dissolve away a focus on the ideological nature of this concern with self-direction. As people are encouraged to look inward and adopt a more rationalist and instrumental approach to their lives, so their view outwards is occluded in terms the focus on the personal as having political implications. It is then but a short step for people to view problems and seek solutions as being their own responsibility rather than requiring an examination of the very foundations of this discourse in terms of a masculinist approach which is problematic, not only for women, but also relates to other social and economic factors, as well as being restrictive for men.

The ideological import of this conclusion is that people have at their disposal a set of discursive resources available to them in terms of the ‘knowledge economy’, ‘flexibility’ and ‘risk’ that legitimate an overriding focus on the personal. Mass higher education coupled with a de-regulation of the workplace to enhance productivity has naturalized the discourses of PDP and WLB. Beck’s ‘individualized individual’, far from being empowered by this discourse, is the subject of a reinforcement of traditional gender lines of demarcation, and in particular the dominance of a masculinized conceptions of learning in HE as related to PDP and graduate attributes, as well as feminized notion of WLB.

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A Study on the Online Learning Strategies among Thai EFL Undergraduate Students

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Abstract

This study was designed to examine the online learning strategies that included motivation, self-monitoring, internet literacy, internet anxiety, and concentration, of Thai EFL undergraduate students. The sample of the study consisted of 138 Thai students majoring in English who voluntarily completed a survey of Tsai's Online Learning Strategies Scale (OLSS). The results indicated the level of internet anxiety was high, while the level of motivation, degree of self-monitoring, level of internet literacy, and level of concentration could be at an average level when engaged in online learning. In addition, there was significant difference between gender with the internet anxiety, whereas there was no significant difference regarding students' learning achievement in all online learning strategies. At the end of the study some recommendations are made for foreign language teachers and teacher educators.

Keywords: Online Learning Strategies, EFL, Online, English, Learning

1. INTRODUCTION

English is claimed as a lingua franca or international language which plays a crucial role in communication around the world. In many countries, English is the official language, the medium of instruction and a compulsory subject at school. The power of the English language is recognised and accepted around the world, including in Thailand. The Thai government sets English as a main subject from grade 1 in primary education to grade 12 in secondary education to give people the ability to communicate in English and proceed to education at a higher level (Ministry of Education, 2008).

Learner-centred education is designed for learners to reach a point where they are able to make decisions about what they want to learn and how they learn it. Learner-centredness concentrates on the learning process of individual learners and how they can process their learning effectively. Recently, the internet has been used for the latest educational technologies. The advancement of connectivity to the internet and the world-wide-web (WWW) has allowed online learning. According to the reference [2], the internet can encourage independent and active learning among students. Quality of teaching and learning could also be enhanced with this technology. The reference [2] further states that online learning could provide a major learning environment for distance education or to supplement face-to-face learning and discussions. It is believed that online learning could promote students' critical thinking, knowledge construction and learning autonomy.

Since COVID-19, most schools have tried to use online learning to replace face-to-face communication in the classroom. Even though the internet can be of significant benefit to learning English as a foreign language in Thailand, most schools and teachers still prefer to use classroom teaching. When the COVID-19 pandemic arrived, teachers needed to adapt and use online learning instead. Online learning strategies can enhance learning acquisition in this situation. For example, learners can use online learning strategies to assist in language acquisition, storage and retrieval of information. Learning strategies are crucial "tools for active, self-directed involvement, which is essential for developing communicative competence" [3]. The use of appropriate language-learning strategies leads

to improvements in language achievement [4],), and most researchers accept that unsuccessful learners are capable of enhancing their language proficiency through appropriate learning strategy use [5,6,7,8]

The objectives of this study were to examine online learning strategies among Thai undergraduate students majoring in English and to compare these online learning strategies based on gender and learning achievement. To meet the objectives of the study, two research questions were proposed:

1. What are the online learning strategies used by Thai undergraduate students majoring in English?
2. Is there any significant difference between the online learning strategies of Thai undergraduate students majoring in English based on gender and learning achievement?

2. Methodology

The sample of this study consisted of undergraduate students majoring in English in Thailand. A total of 250 questionnaires were distributed online; 138 completed questionnaires were returned, giving a response rate of 55%. The participants, therefore, consisted of 138 Thai undergraduate students (29 males and 109 females) currently majoring in English. The students were all Thai natives aged between 18 and 22 years. Of the total participants, 114 (82.6%) were high achievement (grade-point average ≥ 3.50 on a 4.00 scale), and the remaining 24 (17.4%) were 'low achievement'(grade-point average ≤ 2.50 on a 4.00 scale). Participants were informed their identity would remain anonymous and their participation was voluntary. No incentive was offered for participation.

To examine online learning strategies among Thai undergraduate students majoring in English, this study used the Online Learning Strategies Scale (OLSS) self-administered questionnaire, developed from Tsai Meng-Jung and based on the model of Strategic e-Learning [9]. The questions allowed participants to relate their online learning experience in two main sections. The first section included demographic information, in which the participants were asked to provide their personal background information, such as gender and learning performance. The second section allowed the participants to select the most appropriate answer according to the online learning strategies they use.

Twenty questions were asked, using a five-point Likert scale ranging from strong disagreement (1) to strong agreement (5). The variables were: motivation in online learning (5 items), self-monitoring in online learning (4 items), internet literacy in online learning (4 items), internet anxiety in online learning (3 items), and concentration in online learning (4 items). In addition, the reliability, as measured by the Cronbach Alpha Coefficient, was at an acceptable level of .75.

To answer the research questions, descriptive statistical techniques were used to compare the mean (M) and standard deviation (SD) of the different online learning strategies used among Thai undergraduate students majoring in English. In order to compare strategies by gender and learning achievement, a T-test was employed to determine the differences between online learning strategies and the selected independent variables of this study.

3. Results

To examine the online learning strategies among Thai undergraduate students majoring in English, Table 1 presents the mean score of online learning strategies. To answer the first research question, the following scale was applied to this study. The criteria and meaning of the rating scale are as follows:

Rating of 4.51 - 5.00 reflects that the students used online learning strategies at a very high level.
Rating of 3.51 - 4.50 reflects that the students used online learning strategies at a high level.
Rating of 2.51 - 3.50 reflects that the students used online learning strategies at an average level.
Rating of 1.51 - 2.50 reflects that the students used online learning strategies at a low level.
Rating of 1.00 - 1.50 reflects that the students used online learning strategies at a very low level.

Table 1. Mean, and SD for the overall participants (n = 138)

Variables	Mean	SD
Motivation in Online Learning	2.75	.74
Self-monitoring in Online Learning	3.30	.73
Internet Literacy in Online Learning	3.30	.73
Internet Anxiety in Online Learning	4.40	.97
Concentration in Online Learning	3.30	.73

As presented in Table 1, the results indicate the self-rated level of internet anxiety was high (M=4.40, SD=.97), while level of motivation (M=2.75, SD=.74), degree of self-monitoring (M=3.30, SD=.73), level of

internet literacy (M=3.30, SD=.73), and level of concentration (M=3.30, SD=.73) could be at an average level when engaged in online learning.

Table 2 reports the overall mean score of levels of online learning strategies among Thai undergraduate students majoring in English by gender.

Table 2. Comparison of the online learning strategies in terms of gender

Item	Male		Female		t
	Mean	SD	Mean	SD	
Motivation in Online Learning	2.63	0.80	2.77	0.72	0.90
Self-monitoring in Online Learning	3.14	0.82	3.35	0.71	1.38
Internet Literacy in Online Learning	3.14	0.82	3.35	0.71	0.45
Internet Anxiety in Online Learning	4.18	1.09	4.47	0.95	2.07*
Concentration in Online Learning	3.14	0.82	3.35	0.71	1.65

Note: $*p \leq .05$

As presented in Table 2, there is a significant difference between the scores of internet anxiety in online learning for male and female students ($p \leqslant .05$). The mean scores show that female students (M=4.47, SD=0.95) were more internet anxious in online learning than males (M=4.18, SD=1.09). However, there were no significant differences between male and female students in motivation in online learning, self-monitoring in online learning, internet literacy in online learning, and concentration in online learning.

Table 3 compares the overall mean score of online learning strategies among Thai undergraduate students majoring in English in terms of learning achievement.

Table 3. Comparison of the online learning strategies in terms of learning achievement

Item	High Achievement		Low Achievement		t
	Mean	SD	Mean	SD	
Motivation in Online Learning	2.67	0.73	2.97	0.78	1.62
Self-monitoring in Online Learning	3.30	0.74	3.33	0.73	0.21
Internet Literacy in Online Learning	3.30	0.74	3.33	0.73	1.17
Internet Anxiety in Online Learning	4.40	0.98	4.44	0.97	0.74
Concentration in Online Learnig	3.30	0.74	3.33	0.73	0.93

Note: $*p \leq .05$

As presented in Table 3, the scores indicate no significant differences between high achievement and low achievement students.

4. Conclusion and Implications

The study was conducted to (a) examine the online learning strategies among Thai undergraduate students majoring in English and (b) compare the online learning strategies among Thai undergraduate students majoring in English based on gender and learning achievement. The results show that the level of internet anxiety was high, while the level of motivation, degree of self-monitoring, level of internet literacy, and level of concentration could be at an average level when engaged in online learning. In addition, there was a significant difference between males and females in terms of internet anxiety, whereas there was no significant difference regarding students' learning achievement and their level of using all online learning strategies. This finding of the study offers many implications for teachers, educators, and students to inform them about the use of online learning strategies. The most obvious implication is that teachers should use methods to lower their students' internet anxiety, which would eventually lead the students to become more confident autonomous learners. Teachers should provide opportunities, as well as encouragement, for their students to practice online learning strategies through various tasks in class and extracurricular English activities.

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Gender Topics in Selected Czech School Reading Books

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Abstract

The article deals with the current topic of gender issues. The topic is researched in the context of Czech education in which it does not have a strong tradition and is rather an unexplored and little-reflected topic. In the first part of the article, the basic starting points for our research are presented. We emphasize the topicality of the issue for contemporary adolescents and we point out the potential of children's literature in this area. The article presents the results of the pre-survey we conducted in the spring of 2020. We performed a content analysis of six reading books for pupils at lower secondary school. The aim of the analysis was to find out what gender topics the contemporary reading books for children contain. As a part of the analysis, we compiled a system of topic categories that could help teachers orient themselves in this complex topic. We briefly described the individual categories and emphasized their influence on the personality of adolescents. The article also includes a short evaluation of the editions of the reading books we analyzed.

Keywords: gender, literary education, reading books

1. INTRODUCTION

The paper deals with the reflection of gender issues in literature for children and youth and in pedagogical practice. This is a topic that presents a new challenge in the context of Czech education. The interest in researching gender issues in various spheres of life of society and the individual is constantly increasing. Our interest is focused on the education of pupils at lower secondary school. During this period there is a developmental shift in adolescents in their gender identity often accompanied by a decline in personal stability and tolerance [1]. For this reason we see the development of a discussion on gender issues at lower secondary school as stimulating for the personal development of adolescents.

Literature for children and youth which reflects real events in society then becomes a tool for us to develop the discussion. In books children observe the functioning of the social order. They get acquainted with what it means to be a woman or be a man and they build their gender identity [2;3]. Literary education is becoming a space for reflection on gender issues.

Teachers who deal with gender issues in their lessons may inadvertently acknowledge the rigidity of gender stereotypes. However, the goal of gender-sensitive education should be to get rid of prejudices and fulfill one's own individuality and tolerance [2;3]. This topic can affect the personal, social and moral development of adolescents [4]. This topic is very current although it deals with issues that are not fundamentally new. Gender issues affect people constantly and in all cultures. Today, however, they have new questions because the role of women and men in society has changed [5;6;7]. The most common problems are:

What does it actually mean to be a man/ a woman in today's society?
What values are associated with male and female roles?
Do these values correspond to the experience of adolescents?

What role does literature for children and youth play in gender socialization?
What gender images and relationships do the reader face?
What identification patterns does it offer them?
What should be the goal of literary education that reflects gender issues?

Our research object is school reading book. It is a specific type of textbook for the purposes of literary education. Its content consists of selected examples of artistic or professional texts [8]. Our goal is to use the content analysis of documents to create a categorization of gender topics in reading books. In this way we will provide teachers with a basic look at the topic. At the same time we will find out what gender roles the characters are confronted with and what values the texts offer to their readers.

2. DESCRIPTION OF THE RESEARCH

Content analysis is a method on the border of qualitative and quantitative methods [9;10].

- Qualitative research questions focused on categories (topics):

What types (categories) of gender topics in the context of childhood/adolescence do the reading books contain?
What gender images and relationships do they reflect?

- Quantitative research questions focused on the occurrence of categories (topics):

Which of the editions of reading books for the 6th and 7th year of lower secondary school contain a largest number of prose texts with gender images and relationships in the context of childhood/adolescence?
What is the percentage of prose texts with gender images and relationships in the context of childhood/ adolescence?

The research sample for analysis is intentionally selected. Because our goal is to examine childhood / adolescence images and the gender patterns contained in them we have limited the analysis to 6th and 7th grade reading books which are usually genre-oriented and usually contain examples with a childish / adolescent character [11]. The research sample for the preliminary survey consists of six reading books with a valid clause from the Ministry of Education, Youth and Sports of the Czech Republic [12]. These reading books were published by Alter, Prodos, Nová škola.

The basic unit of analysis was the prose text in the school reading. Using open coding, we located images where the figures of girls and boys confront the norm of gender roles. During coding we created a list of codes to find out what topics the texts contained. As part of axial and selective coding we further sorted and organized the list of codes. In axial coding, we searched for connections between created categories and subcategories and grouped related topics into more general categories [13;14]. In the axial coding phase, some topics that were not analyzable in our depth were also omitted. It was, for example, a description of the relationship between fathers and daughters, mothers and sons. When analyzing other reading books, we expect further changes in the categorical system. The current version may not be final. Category names can change, as can the categories themselves. It is therefore a proposal for a categorical system based on the analysis of only six reading books. The main research will be based on the analysis of fourteen reading books.

3. CATEGORIES OF GENDER ISSUES – QUALITATIVE PART OF THE RESEARCH

Using the method of content analysis of reading books, we obtained seven categories, which include sub-topics related to gender identity, socialization and improving relationships between peers. Literary texts falling into these categories describe girls and boys characters in confrontation with the normative component of their gender roles. The characters in them find out what behavior is expected of them as men and women. What sanctions can be imposed for violating the standard. An important group of texts are texts with figures of fathers and mothers. Parents can become a significant identification pattern for their children. Children learn gender roles in imitation. If the parent does not play this role, it may be played by another role model, such as grandparents, teachers, older friends, siblings [1] Texts with these aspects are typical of contemporary literature for children and youth.

3.1. Equality issues in gender-mixed groups

This category contains texts that show: Equal and harmonious relations X Unequal and problematic relations

Most of the examples that fall into this category show girls and boys as two incompatible units. One of the sexes exercises his power. Boys consider girls stupid, weak, incompetent. Girls are in a passive role. The texts focus on the inability to communicate, inequalities between girls and boys, feelings of superiority of one sex. Negatively depicted relationships between girls and boys outweigh the depiction of positive relationships. Values such as empathy, cooperation, tolerance are rarely emphasized.

3.2. Oppositely defined roles of girls and boys

This category contains texts that show: Subversive role division X Traditional role division

Reading books also include texts in which girls and boys are oriented to a certain activity that is typical for their gender. For example, boys compete, fight and girls passively watch. Girls are described as frightened, helpless. In other cases, it is emphasized that girls are good in certain activities (cooking, caring for the weak) and boys in other activities (sports, fighting). These activities are placed against each other in one text. Readers get the impression that this is a reflection of reality - girls and boys have opposition activities at their disposal.

3.3. The beginnings of partnerships between girls and boys

This category contains texts that show: Affection for a girl/boy X Affection for a girl/boy as problem

Interesting topics that the texts show are topics about love, affection for peers. However, many of the texts also show a dark side. Literary characters are described as immature. If someone has feelings for the opposite sex, it can mean exclusion for them. Bringing together the girls and boys worlds can mean feelings of outsiders for teenagers. However, such texts also reflect reality and can help teenagers to overcome negative feelings.

3.4. The norm of femininity and masculinity

This category contains texts that show: Delimitation against the masculinity / femininity standard X Pressure for adaptation to masculinity / femininity

The negative side of gender norms is also recognized by readers in texts with a literary figure that transcends the norm of masculinity or femininity. Boys usually suffer in these texts. For example, if they do not meet the level of masculinity - they are weak, scared, sick, intelligent - it is not good for them. The other boys separated them from their team. These characters do not experience a sense of belonging to his own gender. Insurgents against the norm are more common in girls who do not want to consider themselves weak creatures. In older texts we can also notice situations where girls cannot study. Girls are able to rebel against such a situation or at least show their disapproval. It is certainly important to show children's models that fight against adversity.

3.5. Dynamics and hierarchy of girls / boys teams

This category contains texts that show: Defending social status through personal qualities and solidarity X Defending social status through competition

In this category we see significant patterns of behavior of boys' teams. There is a rivalry between the boys - the boys compete for their place among the other boys. There are often two groups of boys fighting together. These matches are a matter of honor. The boys also like to command, delegate activities to other party members. On the other hand, we also found characters who gained their social status through kindness, devotion and justice. In groups of girls, activities such as athletic behavior are courage more valuable than the usual female qualities. The values of the girls' and boys' teams are therefore very similar. However, girl groups are often not displayed.

3.6. Specifics of relationships between fathers and sons / mothers and daughters

This category includes texts that show: Parent as a close person, positive role model X Parent as a distant person, negative role model

This category includes examples of father-son, mother-daughter relationships. In these demonstrations, students can observe the extent to which a literary figure identifies with a parent of the same sex, whether he or she observes or even rejects them and the attitudes of parents towards adolescents. Pupils can follow the causes and consequences of these relationships, their attitudes towards their parents. Today the family is changing so a reflection on these relationships is very desirable.

3.7. Other female prototypes for girls and male prototypes for boys

This category contains texts that show: Another female idol for a girl, a male idol for a boy X Conflict with autority

Of course, it's not just parents who have to be role models for girls and boys. There are many cases in the texts where a child identifies with another adult. This is also very important for the proper development of the individual. Today, the family often lacks a father who has to be replaced by someone else. The idol is often an older friend, a brother but also a typical male model such as a hunter, indian, fisherman.

Girl's patterns are not so distinctive. Girls often have a friendly relationship with their grandmother, but in some cases there is a generation gap and children do not understand their grandparents. Grandparents recognize different values that today's children do not understand. These texts provide a number of interesting stimuli for the development of character education.

4. CATEGORIES OF GENDER ISSUES – QUANTITATIVE PART OF THE RESEARCH

In this part of the paper we will answer research questions of a quantitative nature.

Table 1. Frequency of occurrence of texts with gender issues

Edition	6 th year	7th year	Total number of texts	Total number of texts with gender topics	
				Absolute frequency	Relative frequency
Alter	15	13	150	28	18, 67
Prodos	12	14	221	26	11, 76
Nová škola, s.r.o.	25	14	251	39	15, 54

The edition that most often contains texts with at least one gender topic is Nová škola. The edition contains a total of 39 texts that the teacher can work with. However, this edition also contains the largest number of all samples (251). Edition Alter contains a total of 28 texts with the potential to develop students' sensitivity to gender issues. This edition also has the largest percentage of these texts (18, 67%). The ratio of texts with gender themes and texts without gender themes does not differ as much as in the Prodos and Nová škola editions.

The Prodos edition contains the least texts with gender issues. Although the data contains a large amount of text (221), it points in a different direction. The edition contains mainly examples of fairy tales, fables, myths. We did not perform an analysis in texts of this kind because they do not depict the children's world. Nevertheless, all editions contain a relatively large number of interesting texts. Working with texts is up to teachers. Their choice is how they will work with them, whether they promote gender stereotypes or vice versa.

5. CONSLUTION

The paper provided a basic insight into the gender issues of reading books at lower secondary school. Using content analysis, we created seven basic categories of gender topics. The aim was to present this categorization system as one of the ways to work with this current topic. All demonstrations support the personalities, social and

moral development of adolescents. They can become an interesting incentive to apply gender-sensitive education. A partial goal of the paper was also to evaluate the three analyzed editions. Most of the texts with the theme are contained in the Nová škola edition. However, the Alter edition has the largest percentage of texts with a gender theme. All reading books contain a number of texts that fall into each category. We evaluate the school reading books as functional to reflect on gender issues in literary education.

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The Importance of Blended Learning Approach during Covid-19 Pandemic all over the World

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Abstract

Rapid development in information and communication technologies plays an important role in its progress by directly affecting the constantly changing education process. With this interaction, education has gained a new dimension, and topics such as internet-based e-learning, virtual learning environments, mobile learning, blended learning, access to information in electronic environments, effective use of educational technologies in education have been brought to the agenda. Today, technology-supported education has become inevitable for better and effective learning, and technology integration studies have gained importance in online and face-to-face education. Blended learning approach, which has been blended with the increasing popularity of e-learning concept, has gained importance in recent years. In the study we found out the importance of Blended Learning Approaches of the students during Covid-19 Pandemic all over the world. We tried to draw attention to the positive effects of blended learning, which is applied by combining virtual learning environments with the strengths of traditional face-to-face learning environments, on students' motivation, communication, interaction and academic success. We have the conclusion that blended learning approach can make the teachers and the students reach the educational target during Pandemic.

Keywords: Blended Learning Approach, Virtual Education, e-Learning, Covid-19, Educational Management

1. INTRODUCTION

Today, humanity is experiencing important social changes. In this new era called the information society, the developments in the field of internet and information technologies have created greater effects than the effects of the Industrial Revolution on society. As a matter of fact, developments in internet and information technologies affect all areas of life. There are very important changes in production, service, trade, entertainment, learning and management styles (Kayalar, 2020; Akgül, 2008). The most important of these changes is perhaps those in the field of education.

The main goal of educational activities is to make individuals creative, productive, with problem solving skills, and able to produce new products as they learn. Innovations in the Internet and information technologies offer individuals the opportunity to access information, to reveal their individual products, and to make the opportunities to present and disseminate them cheaply and easily. As a result of the reflection of the developments in science and technology in education, the developments in the field of education move from being teacher-centered to being student and learning-centered. Learning is seen as a concept that can occur not only in schools and certain centers, but in every stage and space of life (Koşar, Çiğdem and Coşkunserçe, 2009; Usta, 2007).

Internet technology is one of the leading technologies that change the understanding of education. The idea of using the Internet for teaching purposes is to provide a large number of data, easy access to information and rich communication environments. The Web, which is one of the most important components of the Internet that can be used for teaching purposes, enriches the teaching environments both visually and auditory and adds multidimensionality to education (Gülümbay, 2005). Web-based education or online education is of great interest due to its effectiveness and developments in information technologies (Sohn, Park and Chang, 2008). The

developing information and communication technologies have created the opportunity to move the interactions and applications that cannot be realized in the classroom out of the classroom with the flexibility of time and space. However, when the characteristics of traditional face-to-face education and e-learning activities are examined separately, e-learning, which is independent from the place and group education, is an approach that is not preferred by students at the undergraduate level and there is no significant difference between the two types of learning due to the weakness of removing the individual from the socialization process (Koşar et al, 2009; Orhan, Altınışık, Altun and Kablan, 2004). Online learning environments are internet-based, and face-to-face interaction is very limited (Wang, 2003).

1.1. Blended Learning Approach

Blended learning can be defined as combining face to face education and internet / mobile based learning. Students have the opportunity to choose where (at school, at home or between the two) and when (during class hours, nights or weekends). But the teacher decides on the degree of this choice and which of the elements that make up the student's education online and which one will be completed in the classroom. Today, many teachers are not even aware that they practice blended learning. Naturally, they always did what they did: Ask students to do individual work (eg homework). The only difference was that students' individual work was supported by the online environment.

Teachers allow students to organize and manage activities where they can browse, chat with them, share information, ask questions, use learning materials, and complete their work online. There are also more digital resources available for use in education. These resources are educational videos and interactive educational games. It includes apps that allow students to make videos, animations, web pages, podcasts, music and more. These kinds of resources help students to increase their interest and most importantly their performance.

Blended Learning describes four different concepts.

1. Mixing or combining different forms of web-based technology for an educational purpose such as virtual classrooms, self-education, learning together, video, audio or text.

2. Combining different educational approaches such as a structuralist, behavioral, and cognitive approach to provide the best learning outcomes, with or without educational technology.

3. Combining different educational technologies such as videotape, CD-ROM, web-based education and films with face to face instructor-guided applications.

4. Mixing or combining educational technology with current tasks to create a harmonious effect between learning and study.

Blended learning is a good way for an institution that wants to start e-learning, as it will positively affect both students, staff responsible for education, and the profit of the institution. Thanks to mixed learning, organizations can ensure that their employees move from traditional classroom training to e-learning step by step, making change easier to accept. Working in a blended environment helps educators and education designers gain the skills needed for e-learning in small increments. As training professionals develop their e-learning skills, they can turn training into online. Many institutions have spent a significant amount of money on classroom training materials and do not want to throw this money into the street. With blended learning, organizations can use existing educational materials to supplement and support them, rather than replacing them with online ones (Driscoll, 2002).

To switch to e-learning using blended learning, it may be useful to implement the following applications:

- **Accessing tests and exams over the internet**. In this way, the education department can both automatically calculate the scores and monitor and report these scores more easily. In addition, first of all, measuring tools such as test and exam over the internet helps the users to step into the new system step by step.

- **Creating discussion boards online.** Thus, students have the opportunity to contact their classmates to ask questions, exchange views and send resources to each other after training.

- **Ensuring that source materials are available**. Linking to reference materials related to the courses allows students to explore the topics in more depth. In addition, students are thus free from the obligation to stick to information that will become outdated after a few months.

- **Submitting preliminary work online.** Preliminary studies posted online both reduce costs and allow tracking whether students are prepared.

- **Providing instructor support to students.** Students may need the help of real people who answer their questions, help them develop strategies in individual learning, or only provide moral support.

- **Using beneficial tools** that help students organize information, review lesson instructions, and access summary information about the lessons requested.

- **Creating virtual classes.** In the transition from traditional classroom education to e-learning, the presence of live virtual classrooms can effectively replace the instructors. Thanks to virtual classrooms, students can benefit from the knowledge of specialists, no matter how geographically distant from them.

- **Using e-mail and messaging effectively.** E-mail is probably the least known among extended learning solutions. However, e-mail is a very powerful communication tool before, during and after learning.

- **E- mailing students directly.** The e-mails can send new information and additional resources about the curriculum, it can be informed about the advanced levels of the same training, or remind students when they will need to renew their certificates.

These methods, which are handled under the name of Blended Learning and implemented in many organizations that switch to e-learning, will help the new "learning culture" to be adopted by the users much more quickly in the duration of Covid-19 pandemic.

1.2. The Importance of Blended Learning during Recent PandemicCovid-19

The main goal in education is to enrich the student's learning. In this context, blended learning, which requires the use of more than one learning approach or instructional technologies, enables the student to learn from different sources and by comparing them through books, web-supported materials and activities by enriching the ways of accessing information. By eliminating time and space limitations with blended learning, student-student and student-teacher communication and interaction is ensured to be maintained both in the classroom and online. In addition, the student has the opportunity to transform the knowledge into life by asking, discussing and asking the information he / she learned.

Blended learning facilitates the transition from teacher-centered teaching approach to student-centered teaching approach. In this way, the student is able to organize his or her own learning without being dependent only on teacher guidance and increases the selection areas for individual learning preferences. Blended learning provides a number of processes such as pre-learning and evaluation of the teaching process in the web environment with the opportunities offered by online environments, thus enabling this period to be directed to more efficient education / training processes by shortening the face-to-face learning process.

Alternatives for blended learning are increasing, so students can learn according to their needs and expectations. From a corporate perspective, blended learning is a learning / teaching approach with the opportunities offered by e-learning, which is lower cost, easily updated, and eliminates the disadvantages of geographical location.

In addition to all the positive parameters of blended learning, there are also some difficulties that may be encountered during the design and implementation phase. The focus of "blending" is the participation of e-learning technologies in face-to-face learning. To do this, the main requirement is to expand the use of Learning Management Systems (LMS) as an interaction tool and performance support system, and to increase the technology equipped classrooms in schools. Students' needs for guidance and guidance for the use of technological tools should not be overlooked. In addition, the necessity of having students' self-efficacy in e-learning environments and learning through these environments is the difficulties encountered in the application of blended learning (Graham, 2006).

RESULT AND SUGGESTIONS

In blended learning applications, the balance of face to face learning and e-learning may differ from lesson to lesson. Therefore, face-to-face learning methods and strategies are used more predominantly in some courses, while e-learning technologies can be used more in some courses. In another course, both e-learning and face-to-face learning can be used equally (Osguthorpe & Graham, 2003; Singh, 2003). It should be noted that blended learning does not have limited scope, such as the use of some strategies used only in e-learning (discussion forums, mail, content presentation, etc.) in face-to-face teaching and mostly as a supporting tool for face-to-face teaching (Dağ, 2011; Usta, 2007). Blended learning, which should be considered as an instructional design approach, is a process that should be strategically planned in order to be implemented in a curriculum, or a curriculum or an educational institution (Sharpe et al., 2006; Oblinger, 2006; Mortera-Gutierrez, 2006).).
The following suggestions can be presented for the components that should be in realizing blended learning approach and designing.

1. Considering the necessity of using more than one learning approach in its design, blended learning should be considered as an instructional design approach.

2. Different learning methods such as project-based learning, collaborative learning, role-based learning should be included in blending.

3. Considering the e-learning environment and methods, which are one of the main components of blending, the use of the asynchronous and synchronous communication and interaction tools provided by the LMS and these systems will contribute to the more flexible and effective execution of the teaching process independent of time and space. .

4. Course materials created for blended learning should be specially designed in different formats such as sound, image and writing, enabling students to learn at their own pace, taking into account students' learning styles.

5. Blended learning environment should be enriched with learning activities to be presented by e-learning methods. For example, after a face-to-face course, it will be useful to present the exams that are presented to the student in an e-learning environment, containing questions in different types of questions that they can reach and use whenever they want. E-learning tools such as forums, chat tools, discussion boards, instant message services should definitely be used as learning activities in the learning environment and students' use of these tools should be evaluated within the course.

6. After deciding on the application of blended learning, it is necessary to raise awareness of students about this issue and to carry out studies to increase their motivation and self-efficacy.

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The Proactivity in Preventive Measure Enterprise by Governments, the Impact on Cost of Business Context and Economy

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Abstract

The pandemic as a global phenomenon has forced many governments to take preventive measures aimed at preventing large-scale stagnation and closing down economic activities. This fact resulted in major problems that led to the penalization of business life in certain industries, which consequently affected and damaged the economic health of each country. In terms of industries, all industries that are not related to food, the production of disinfectants, or the implementation of accompanying activities of these industries were penalized and caused in context of business liquid and profitable impossibilities that even affected the loss of jobs for many people that consequently this trend tends to increase that will affect both welfare and standard and create economic destructiveness.

This paper will answer the research question: **How much have the restrictive measures affected the imbalance governments for the economic sectors? Does COVID 19 have an impact on developing new momentum in the structure of the economy?**

Keywords: Business, COVID 19, economy sector, proactivity

LITERATURE REVIEW

For the management of a company to be pro-active, it must according to Beasley, Branson and Hancock (2010) distinguish Key Performance Indicators (KPIs) from Key Risk Indicators (KRIs) through the review of data from the financial statements[2]. However, Value Bridge (2012) identifies primary and secondary risks as means of predicting earnings volatility[3]. Risk management is a tool that helps businesses achieve their goals and objectives. Risk management covers the stages of identifying risk strategy, identifying and assessing risks, identifying responses to risks, reviewing, monitoring and reporting risks. Risk management can also be defined as the evaluation of the

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internal and external risks that may prevent the realization of the goals and targets of the companies and the determination of the measures to be taken. The main strategy for the elimination of risks is through internal control activities which can be preventive, detecting, directing and correcting. The costs of control activities and remedial measures should be proportionate to the benefits. Effective information and communication should be provided for the realization of the activities and controls of an organization. Since internal control is a dynamic process that continuously adapts to the risks and changes encountered by the organization, it is necessary to monitor the internal control system to ensure that internal control can keep pace with changing targets, environment and risks.[4] The risk is defined as the uncertainty of the outcome that may be caused by the threats and opportunities in the events and activities[5]. The risk is to accept the possibility of occurrence of negative or positive events that affect the project objectives as a result of uncertainty[6].

The COVID-19 pandemic poses a serious social and economic challenge to the country - The impact of the COVID-19 outbreak will be transmitted both through external channels and lower domestic demand. Prior to the pandemic, Kosovo's economy was projected to grow by 4 percent in 2020. However, the pandemic and the associated public health containment measures are expected to lead to a contraction in economic activity by 4.5 percent.[7] Prior experience suggests that unemployment rates can rise sharply during such a global crisis. In Kosovo, the supply and demand shocks to the economy arising from the containment measures adopted by the government to mitigate the spread of COVID-19 are expected to reduce household earnings.[8] The risk of economic contraction is very high in Kosovo. Before the outbreak of corona crisis, the economy was undergoing a cyclical upswing in 2015-2019, with real GDP increasing by 4% annually. The key growth drivers were services exports, gross-fixed capital formation and private consumption, the latter boosted by large remittances from abroad, and by robust wage and credit growth. Services exports (tourism) and private investment were also to a large extent supported by the diaspora. The outbreak of the Covid-19 pandemic and the related shutdown are disrupting Kosovo's trade and financial flows with a drastic impact on the economy. A further vulnerability of Kosovo's economy is the fragile private sector, dominated by micro enterprises with limited liquidity buffers or access to finance. Due to the large informal sector (accounting for around 30% of GDP) and the already high unemployment rate (26% in late 2019), the most likely scenario is a rapid increase in poverty and unemployment. The IMF projects real GDP to contract by 5% and the current account deficit to widen to 7.4% of GDP in 2020 as exports and remittances will fall, while financing flows, including FDI (Foreign direct investment), will diminish significantly[9].

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Indicator	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Real GDP change, %	1.2	4.1	4.1	4.2	3.8	4.2
Consumer price inflation, %, end of period	-0.4	-0.2	1.3	0.5	2.9	1.1
Key monetary policy rate, %, end of period	9.3	7.7	7.2	6.8	6.0	6.4
Unemployment rate, %	35.3	32.9	27.5	30.5	29.6	25.7
General government balance, % of GDP	-2.2	-2.0	-1.2	-1.3	-3.0	-2.9
Public debt, % of GDP	10.7	13.1	14.4	16.6	16.9	17.5
Current account balance, % of GDP	-6.9	-8.6	-7.9	-5.4	-7.6	-5.8
International reserves, USD billion	0.7	0.7	0.6	0.7	0.8	0.9
International reserves, months of imports	2.4	2.6	2.0	2.1	2.2	2.3
Gross external debt, % of GDP	31.2	33.3	33.2	32.6	30.3	30.3
Foreign direct investment, % of GDP	2.7	5.3	3.6	4.0	4.0	3.8

[10]Sources: WIIW, IMF, ERP, Ministry of Finance Kosovo

Table 1. Indicators from Ministry of Finance Kosovo

THE STATISTICAL DATA AND RESULTS

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.905	.041		19.957	.000
Panic from COVID 19	.042	.056	.116	3.758	.033
Government measures	.023	.065	.059	4.354	.025
Reducing disposable income	.101	.064	.203	3.583	.001
Remittances	.742	.073	1.688	6.205	.000
Low demand	.530	.054	.775	8.903	.000

a. Dependent Variable: Economic performance

Table. 2. Coefficients of Economic performance

In the table number 2 are coefficients and their significance. Through this table it seems that independent variables: Panic from COVID 19, government measures, reducing disposable income, remittances and low demand have impact on dependent variable on Economic performance. Based on research question: ***How much have the restrictive measures affected the imbalance governments for the economic sectors***? It concludes that: Primary hypothesis is refused and the second hypothesis is accepted, the interpretation would be like this: ***The restrictive measures have impact on the imbalance governments for the economic sectors***.

[10] *Sources: WIIW, IMF, ERP, Ministry of Finance Kosovo*

Correlations

		COVID 19	The flow of money
COVID 19	Pearson Correlation	1	.984**
	Sig. (2-tailed)		.000
	N	100	100
The flow of money	Pearson Correlation	.984**	1
	Sig. (2-tailed)	.000	
	N	100	100

**. Correlation is significant at the 0.01 level (2-tailed).

Table 3. Correlations

The correlations is a mutual connection between two or more variables that have impact on each other. The results in the table number 3 shows that the correlation coefficient between COVID 19 and the flow of money (0.984) is a positive correlation and there is a significant correlation to the level of significance 0.05 *(0.000).As to the research question:* ***Does COVID 19 have an impact on developing new momentum in the structure of the economy?*** It concludes based on the results that COVID 19 have impact on developing new momentum in the structure of the economy.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.875
Bartlett's Test of Sphericity	Approx. Chi-Square	257.955
	df	70
	Sig.	.000

Table 4. KMO and Bartlett's Test

In this table is Bartlett's Test which shows that the data mentioned above are suitable for analysis 87.50% and the significance level is 0.000.

Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.027	40.27	40.27	2.566	25.66	25.66	2.091	20.91	20.91
2	1.572	15.72	55.99	1.243	12.43	38.09	1.571	15.71	36.62
3	1.236	12.36	68.35	.798	7.98	46.07	.934	9.34	45.96
4	.660	6.60	74.95						
5	.736	7.36	82.31						
6	.457	4.57	86.88						
7	.527	5.27	92.15						
8	.327	3.27	95.42						
9	.355	3.55	98.97						
10	.103	1.03	100.00						

Extraction Method: Generalized Least Squares.

Table 5. Total Variance Explained

In this table shows the analysis of variance which shows a higher percentage of variable are includes in this model. Both variance and cumulative factors have a higher participation of explanatory.

CONCLUSIONS AND RECOMMENDATION

Economic health is a key priority for all, including state governments, international economic, financial organizations, businesses, and individuals. The measures taken in the context of pandemic have "paralyzed" economic life by increasing costs and creating despair in the operation of certain industries, rising unemployment and shrinking supply and aggregate demand as key opponents of the market economy. Kosovo has taken preventive measures, like most other countries, to maintain health in the first place and then the functioning of the economy where we will analyze the three real scenarios:

- The injection of emergency funds by the government over 300 million euros to increase aggregate demand in the economy namely the increase in the demand for consumption which directly affects the functioning of businesses, especially small ones, increasing the monetary demand (for credit) which consequently offers greater investment potential which consequently maintains the stability of the labor market and offers new opportunities for creation of new jobs, stimulus mechanisms to increase the marginal trend in investment and consumption at the same time while maintaining price stability to avoid inflation (general increase in the price level). This type of scenario is also called the interventionist approach of the state to the economy to maintain the course of its functioning.

- The second scenario: - "Kosovarism" of the pension fund, the injection of those funds in order to develop the economy of Kosovo, being used as investment funds in open market operations by the government during the issuance of securities. Selling these securities to this fund and in certain periods depending on the need and movement of the money supply and the monetary demand to buy them and consequently to circumvent this money within the country's economy.
- The third scenario: Strengthening the private sector and specifically the production sector in order to cover the market with local products by reducing the discrepancy between exports and exports by fading the trade deficit, this will enable less cash withdrawal from circulation and its injection in function of the sectors of Kosovo's economy. Promoting and creating an investment strategy through 3 types of incentives - fiscal, financial and non-financial - creating a safe and attractive environment for investors who will automatically affect productivity and employment growth. It is also important to maintain the tendency for more remittances for the consumer and service sector where over 87% of the special service is destined for the business sector. The economy is an essential area for the functioning of a disease and the state.

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[9] World Bank. 2020. Western Balkans Regular Economic Report: Spring 2020. The Economic and Social Impact of COVID-19. These estimates assume that the outbreak affects only the second quarter and economic activity picks-up in the second half of 2020. If the epidemic and the corresponding containment measures are prolonged into the third quarter, Kosovo could fall into a deeper recession associated with a contraction of above 10 percent in 2020.

Corporate Foresight in Start-up Companies: A First Empirical Status Quo

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Abstract

Corporate Foresight methods are used to generate a future outlook of market developments in order to remain competitive, but newly founded companies often apply the Lean Start-up approach leading to strategic flexibility. The question arises whether 'start-ups' and their association with innovation is in line with systematic long-term future planning. Hence, this paper aims to empirically detect practices of Corporate Foresight in start-up companies and whether different approaches apply to them in the use of measures. An ex-post facto study in the form of a cross-sectional survey was chosen as research design, methodically a written online survey among start-ups was conducted. Corporate Foresight is regularly performed in start-ups, but activities differ in their frequency. Only few processes are managed systematically and organizational responsibilities are usually not defined precisely. Lack of resources and methodological deficits are main obstacles to overcome. Still, Corporate Foresight is of importance for start-ups and implementation is to be considered independent of the business situation. Results of the study show a positive correlation between environmental dynamics and complexity and the degree of foresight activities. The majority of start-ups pursue an intensive Lean Start-up approach, whereby intensities of the lean and foresight characteristics show a positive correlation. The two concepts are not mutually exclusive.

Keywords: Corporate Foresight; Open Foresight; Lean Start-up; Entrepreneurial Opportunity Recognition.

1. INTRODUCTION

Nowadays, increasing consumer demands and complex technologies cause highly competitive pressure in many industries (Rohrbeck & Gemünden, 2011, p. 232). As a result, many companies need to protect themselves against competition through continuous innovation (Gattringer & Strehl, 2014, p. 1). A modern approach of developing innovative ideas is the systematic opening of company borders to the external business environment with the goal of knowledge acquisition. This innovation process is medium-term oriented and has a focus on mastering actual challenges. A specific image of future developments is not sufficiently created.

Nevertheless, in a dynamic and volatile business environment future forecasts and risk assessment can provide a competitive advantage (Suddendorf & Corballis, 2007, p. 299). In corporate organizations the term 'Corporate Foresight' (CF) has been established for future assessment tasks (Daheim & Uerz, 2008, p. 321). Applying special methods companies try to anticipate significant changes in the corporate environment and shape the needs of tomorrow's markets (Burmeister, Neef & Beyers, 2004, p. 9). Cooperation between different industries, society and organizations is crucial for successful design of change processes (Heger, 2015). In that regard, the concept of 'Open Foresight' (OF) has been established in theory (Daheim & Uerz, 2008; Miemis, Smart & Brigis, 2012). Companies that practice CF face challenges because holistic systems still lack often (Rohrbeck, 2011, p. 177).

However, how could recently founded, not established companies deal with foresight? Those 'start-ups' have a reputation as innovative drivers of economies (Vishnevskiy, Meissner & Egorova, 2015, p. 3), also adding to increasing employment rates (Blank, 2013). Theoretically, start-ups follow the 'Lean Start-up' approach. That philosophy aims at reducing entrepreneurial and organizational processes, thus, leading to a greater strategic

flexibility (Ries, 2011). Hence, strategies can be adjusted at short notice requiring less planning efforts. Authors highlight the spontaneous, subconscious learning of entrepreneurs that makes strategies redundant (Kirzner, 1979, p. 168).

The question arises whether different approaches apply to start-ups in the setup of environmental detection measures. In actual fact, business model ideas of founders may already result from own future predictions (Companys & McMullen, 2007, p. 311). So, do these points make CF redundant for start-ups in practice or is the term 'start-up' and its association with innovation in line with systematic CF? There is a special motivation to investigate this topic with respect to open CF processes. Due to different organizational frameworks and importance of entrepreneurial characteristics (Fontela et al., 2006, p. 7) start-ups possibly follow networking more actively.

In contrast, start-ups have restricted resource availability to develop systems that effectively analyze changes and their impacts (Day & Schoemaker, 2005, p. 2). Besides, knowledge is seen as an important core competence for start-ups. It needs to be protected, especially in the market entry phase (Gassmann, Enkel & Chesbrough, 2010, p. 215). These contradictory aspects point out the attention that start-ups have in (open) foresight topics.

There is only few literature on foresight that develops theoretical frameworks or deals with effects of CF on businesses (Rohrbeck, 2012, p. 448; Becker, 2003, p. 6), but research is increasing significantly (Popper, 2008, p. 64). Particularly in connection with start-ups the author identified a major research gap.

Due to lack of data, this paper aims to answer the guiding question of whether and how start-up companies generate future-oriented knowledge in a strategic way in order to identify future developments and market signals. First of all, the survey intends to prove the necessity for CF in start-ups. This will be done by evaluating internal and external CF determinants. For this purpose, the complexity and dynamics of the external corporate environment as well as the Lean Start-up characteristics will be assessed. Subsequently, the status quo of CF activities of individual companies will be analyzed. To what extent is CF carried out and is its implementation dependent on age or size? How is CF embedded into the organization? What are the objectives and which environmental areas are mainly monitored? Furthermore, it is of interest to know the reasons why start-ups decide to implement CF. Finally, it shall be clarified how the results are used within the organization, what possible barriers are and what relevance CF has for the companies. Within the framework of the survey significant trends shall be identified.

Methodically, a literature research and theoretical assessment are applied to create first insights on the topic and potential value of CF for start-ups. Results were discussed in the author's previous work (Dummel, 2020). Building up on that, an ex-post facto study in the form of a cross-sectional survey was chosen as research design. The underlying survey method is a written online survey among start-ups. The results are presented in a descriptive manner, research questions are answered by investigating correlations and differences in the central tendencies.

2. LITERATURE REVIEW

2.1. Corporate Foresight

2.1.1. Definition

All activities, methods or systems that describe the search for (market-sided) trends and technologies are referred to as 'Foresight' and belong to the discipline of Futurology (Tiberius, 2011, p. 13). Foresight in business contexts is a cross-sectional function of strategic, technology and innovation management and also known as 'Corporate Foresight' (Rau, Schweitzer & Gassmann, 2014, p. 27). Because of its heterogeneous actors, methods and paradigms a clear definition of CF does not exist in science (Becker, 2003, p. 8).

Coates (1985, p. 30) describes CF as a process of creating understanding about the future. The overall goal is risk minimizing and opportunity exploitation through systematic activities (Rau, Schweitzer & Gassmann, 2014, p. 27).

Martin (1995, p. 2) adds that CF looks at long-term developments in the areas of science, technology, business and society with the aim of identification of strategic areas which provide competitive advantages for businesses.

Horton's (1999, p. 5) definition covers these views whereas CF can be seen as the process of developing scenarios of possible futures and trying to understand them. The aim would be to develop organizational capabilities in order to be able to decide what actions are necessary today with the goal of creating the best possible 'tomorrow'.

Main external drivers for the necessity of CF are environment dynamics, complexity of external environment structures and uncertainty (Jissink, Huizingh & Rohrbeck, 2014, p. 5). Internal determinants are willingness to learn, strategic orientation and market or technology orientation (Jissink, Huizingh & Rohrbeck, 2014, p. 7). Moreover, CF has been empirically examined mostly in large enterprises (LE) or small and medium-sized enterprises (SME)

(Portaleoni, Marinova, Ul-Haq & Marinov, 2013, p. 50). LE tend to establish specialized foresight departments and think tanks (Daheim & Uerz, 2008, p. 324).

2.1.2. Perspectives

CF can be portrayed from two sides. Rohrbeck (2011) developed the 'Corporate Foresight Maturity Model' as basic framework for the evaluation of a company's CF activities. It follows a system approach. Thus, CF is considered an organizational capability. Consequently, business context impacts CF quality (Rohrbeck, 2011, p. 48). According to this, there is no universally applicable CF method and every organization performs CF depending on its own capabilities (Day & Schoemaker, 2005, p. 2). There are five areas that determine CF maturity, skills and activities. With increasing maturity, a higher added value can be expected. It must be considered

- how and where information is used,
- which methods are applied,
- which people and networks are involved,
- at which organizational level CF activities are initiated, and
- whether the corporate culture promotes CF positively or not (Rohrbeck 2011).

This system view is compared to an approach that defines CF as a continuous process (Becker, 2003, p. 7). Horton (1999) regarded an CF process consisting of three sequential steps: A first 'input' phase, the actual 'foresight' phase and, lastly, the 'output' phase. Within the input phase, information about the environmental context is gathered. Within the actual foresight phase, information is analyzed to generate knowledge as a basis for strategic orientation. Concluding output phase covers results and their embedding into strategic planning (Gattringer & Strehl, 2014, p. 4). Results can be material (e.g. reports) or immaterial (e.g. visions) (Voros, 2003, p. 11).

2.1.3. Value

The evaluation of results that will only be visible in the future is complex. Also, good future assessment leaves an undesired event undone and thus unnoticed (Grim, 2009, p. 69). So, following value description only covers potential value generation through CF.

CF mainly creates information that are valuable for strategic management and idea generation in innovation management (Becker, 2003, p. 7). Hence, CF is a source for strengthening strategic thinking that leads to more robust strategies (Conway, 2008, p. 3) and enriching the context in which strategies are developed, planned and executed (Conway & Voros, 2003, p. 4). Primary objectives of practicing CF are to support strategic decision-making, to secure long-term competitiveness and to promote organizational learning and innovation capacity (Burmeister, Neef & Beyers, 2004). Primary value of CF for strategic management is therefore enrichment of strategic reorientation (Rohrbeck & Schwarz, 2013) and better resilience to change (Rohrbeck, 2012, p. 442).

According to Becker (2003), companies can benefit from CF, because it

- sets up an early warning system as a forward-looking means of information,
- supports strategic decision-making in a trend-setting way,
- directly influences decisions, e.g. in the context of research and development priority setting, and
- makes an explicit contribution to strategy formulation.

According to Rohrbeck and Gemünden (2011) CF takes on three essential roles in innovation management. It functions as an input provider, strategic instrument and continuous service. Well-performed CF activities have a positive impact on these roles. Thus, it can be stated that effective CF results in improved opportunity identification and risk assessment along the innovation process (Becker, 2003, p. 7).

In practice, there are deficits in the implementation of appropriate systems, even in multinational LE. Major reasons for implementation of CF are costs, a too broad time horizon and unclear efficiency (Becker, 2003, p. 18).

Main areas of observation are technologies and market-sided trends. Political, social and ecological areas are only considered if they validate innovative developments (Becker, 2003, p. 15). Sectors with low dynamics and low complexity rely on rudimentary systems (Conway & Voros, 2003, p. 4).

2.2. Potential Value of Corporate Foresight in Start-up Companies

The author defines 'start-ups' as companies that have strong innovation efforts, aim for sales growth and are no older than 10 years (Ripsas & Tröger, 2015, p. 12). Innovativeness is finally the factor that differentiates start-up companies from SME. Corporate Foresight Maturity Model created by Rohrbeck (2011) was applied to illustrate internal organizational factors that justify need and usage of CF. Based on this view on value creation, further theoretical assessment derived from literature review identified possible impacts CF systems may have in start-ups. Following subchapters summarize key findings from the author's previous paper (Dummel, 2020).

2.2.1. Lean Start-up Theory and Corporate Foresight

Start-ups follow an intuitive impulse (Vishnevskiy, Meissner & Egorova, 2015, p. 3) and develop products or services that are innovative (Ardichvili, Cardoz & Ray, 2003, p. 109). They pursue ideas based on previous planning (Shane, 2003, p. 10). Accordingly, an early identification of business potentials has been conducted before. Besides, founders and entrepreneurs are characterized by cognitive characteristics that allow an instinctive recognition of business ideas (Shane, 2003, p. 10). Because return on investment for CF is only noticeable in the long-term (Rohrbeck, 2012, p. 448), investing in CF systems is risky for start-ups. They are oriented towards shareholder expectations which does not promote long-term orientation (Becker, 2003, p. 19), neither indiscreet handling of intellectual property (Gassmann, Ellen & Chesbrough, 2010, p. 215). A transparent exchange of information is contradicting. Furthermore, systematic CF requires human resource commitment.

For these reasons systematic CF makes sense for more progressed companies that have resource power, an already existing business model and that try to protect the business from disruptive changes.

Nevertheless, start-ups operate in uncertain dynamic environments and development does not follow a master plan (Blank, 2013). Referring to development, the Lean Start-up concept (Ries, 2011) enjoys attention in practice. It is assumed that start-ups act hypothetically meaning their visions are expressed in hypotheses which are gradually tested for correctness (Blank, 2013). Preliminary products, services or business models are developed to be suitable prototypes, but consist only of most necessary components. Prototypes then are checked by customers for their marketability. According to the feedback, the project may be optimized, be fully approved or a new hypothesis may be formulated. Those steps are repeated until a marketable result is achieved. The approach focusses on experimentation rather than rigorous planning, on customer feedback than intuition and on iterative development processes than linearly ones (Blank, 2013).

A lean culture strengthens a short-term mindset and makes CF redundant. However, a correct understanding of markets and business potential cannot be generated by 'trial and error' or fictitious business plans (Blank, 2013). Moreover, customers can possibly not make reliable statements about their own future demands (from Hippel, 1994, quoted from: Ardichvili, Cardoz & Ray, 2003, p. 108). But CF is supposed to integrate findings in research into new markets, products and services (Slaughter, 1999, cited after: Conway & Voros, 2003, p. 2) which also characterizes 'Entrepreneurship' (Eckhardt & Shane, 2003, p. 336). To draw a conclusion, there is potential to apply CF in particular within the identification of entrepreneurial opportunities (EO). The identification of EO is also regarded as a core element of the entrepreneurial process (Gaglio & Katz, 2001, p. 95) and highlights that proposition.

2.2.2. Entrepreneurial Opportunity Theory and Corporate Foresight

Situations in which new markets, products or services are introduced are describes as EO. More precisely, they are result of a combination of resources to generate economic value (Shane & Venkataraman, 2000, p. 220). EO cannot be predicted ex ante. So, they are not calculable in advance (Venkataraman, 2000, p. 220). EO always result from individual assessments (Shane, 2003) and creative decisions (Eckhardt & Shane, 2003, p. 336) of an entrepreneur and their identification requires contextual knowledge (Shane, 2000). Alvarez and Barney (2007) state that EO can exist independently of entrepreneurial actions and be discovered by an entrepreneur. Alternatively, EO may not be existent but may be generated through actions of an entrepreneur. First view is covered in the 'Discovery Theory', the latter is discussed in the 'Creation Theory'.

From the Discovery Theory point of view, EO result from the search for information in order to identify a market gap. The perception of a particular fit between market needs and resources is central (Ardichvili, Cardoz & Ray,

2003, p. 109). EO then result from an information imbalance: Actors may have different perceptions, expectations or knowledge about the value of (future) resources (Shane & Venkataraman, 2000, p. 220). Regarding the identification of EO within Discovery Theory, information updates on external environmental developments are crucial factors.

EO in the context of Creation Theory arise from the observation of market reactions and corresponding derivation of actions that generate EO which cover specific market needs. Without any (entrepreneurial) action EO could have not been introduced. Eckhardt and Shane (2003, p. 341) cite government intervention, regulatory change and demographic change as the most important drivers of EO.

Theoretically, CF can provide benefits in both theories. Looking at EO as existing opportunities supports the idea of CF as an instrument for (external) change detection. Within this view, CF and its extended search processes can be used as basic input for hypothesis generation or validation in the context of Lean Start-up. Especially in the context of OF a better customer integration into development processes can be achieved, e.g. through the use of internet technology (Chesbrough & Prencipe, 2008, cited after: Enkel, Gassmann & Chesbrough, 2009, p. 314).

Gruber, MacMillan and Thompson (2008) state that companies should conduct a broad market analysis before committing to a market (early intelligence). Through an in-depth environmental analysis, CF can help start-ups to identify a range of entry options and to select the most valuable alternative. Core business can be established in a suitable market counteracting the risk of entering a smaller, less valuable market.

The attractiveness of an EO depends on contextual environmental factors (Shane, Locke & Collins, 2012). So, the evaluation framework should be broad and far-reaching. An open approach in the sense of OF is practical. Consequently, as a type of open coworking approach OF could enhance developments through exchange with networked communities (Vishnevskiy, Meissner & Egorova, 2015, p. 11) and, in doing so, counter resource disadvantages (Gassmann, Enkel & Chesbrough, 2010, p. 216).

Particularly the organizational culture can be enriched with OF structures: investor, supplier or employee relationships are based on a common vision and there is potential need to coordinate many invisible ideas and beliefs (Lewin, 2015, p. 7). Crowdfunding platforms can be understood as open (early) intelligence systems when information about products are provided in an open dialogue and investors deliver their resources as an input.

CF can also be implemented to sensitize individual's 'entrepreneurial alertness' which increases the capability to examine market conditions (Gaglio & Katz, 2001, p. 99). Relating to cognitive factors, motivation is particularly important for successful identification of EO (Shane, Locke & Collins, 2012). In this regard, CF can contribute to a clearer picture of the future (Voros, 2007, p. 6) which, in turn, strengthens hope and promotes success (Morrow, 2006, p. 10).

3. RESEARCH METHOD

In this paper a quantitative approach in the form of a standardized, written online survey (fully structured questionnaire study) was chosen. The research design is an ex-post facto study. The design applied is a cross-sectional survey. This means that relevant values were only collected at a given point in time and represent a snapshot. This work is based on primary data gathered by the author himself.

The theoretical population of this study shall be all start-up companies in Germany. Since not all existing start-ups could be surveyed, a selection of companies had to be defined (sample). In order to be considered in this study, the criterion of being a start-up according to the definition presented had to be fulfilled (age, innovativeness, growth). The sample was derived from a non-probabilistic survey based on start-up directories. Full surveys were carried out within the directories, so that every listed company was considered in the sample. Overall, descriptive analysis methods were used for evaluation. Correlation analysis was used to answer specific research questions. Causal relations were not examined in this study.

This paper aims to provide first insights. Thus, it does not require a representative design. The focus does not lie on a differentiated analysis of individual companies. Rather, a pattern of general characteristics is to be empirically presented. Furthermore, the design aims at comparability with known studies on CF in LE and SME. To keep sample losses low, mainly closed questions with predefined answers were used. The majority of these use scales with Likert-type items. The data collection phase lasted from 26 April 2016 to 15 May 2016. At the end, 85 participating companies could be included in the following analyses.

4. RESULTS

4.1. Composition of the Sample

Figure 1 (a) shows that 15% of the participating companies are not older than one year. With 72% companies between one and five years old form the largest group represented. 13% of the participants are over five years old. Figure 1 (b) confirms that this survey includes only non-incumbent enterprises. Thus 69% of the participants are composed of 1-10 employees (small start-ups), 27% of 11-50 employees (medium start-ups) and 4% of over 50 employees (large start-ups).

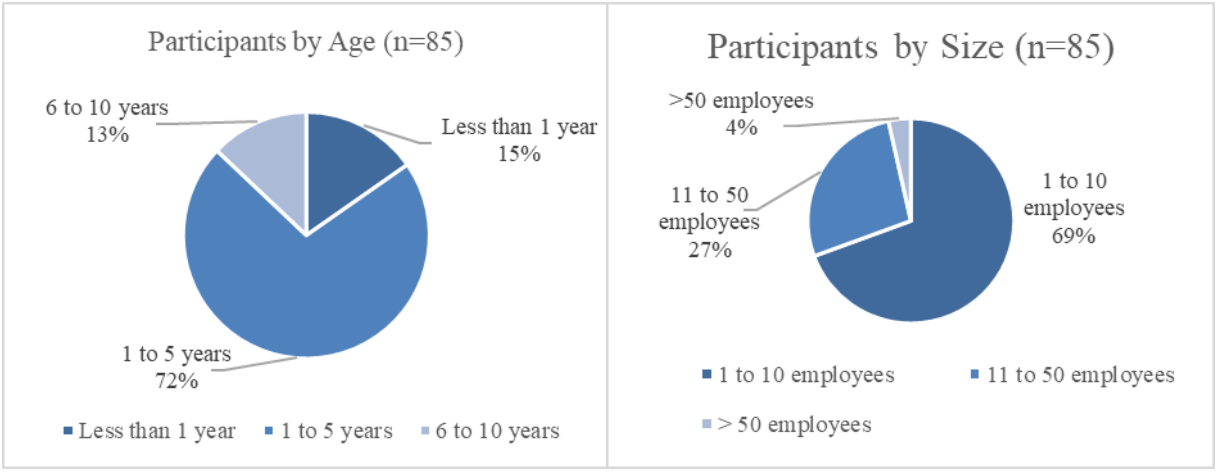

Fig. 1. (a) Participants by Age; (b) Participants by Size.

The most important sectors belong to computer technology (23.2%), technology (16.9%), information technology (16.2%) and commerce/trade (12.0%). This heterogeneous distribution corresponds to other studies already conducted on the German start-up landscape (Ripsas & Tröger, 2015, p. 16).

4.2. Need for Corporate Foresight

The greater the willingness of a company to change, the greater the dependence on contextual knowledge of the future in order to make safe decisions. It is assumed that lean characteristics, environmental complexity and dynamics determine the willingness to change as internal and external factors. So, statements which justify the necessity of CF in start-ups can be derived from the answers given.

Figure 2 shows a homogeneous lean specification. The majority of the participants consider themselves to be correctly represented in all lean elements. Considering the 'probably' categories, 87.1% of the participants are characterized by a pronounced willingness to experiment and perceive failure as an opportunity. 96.5% use customer feedback from the beginning of the development processes and 71.8% carry out their development processes step by step repetitively (iterative). This high degree of lean culture is reflected in the high degree of strategic flexibility (88.3%).

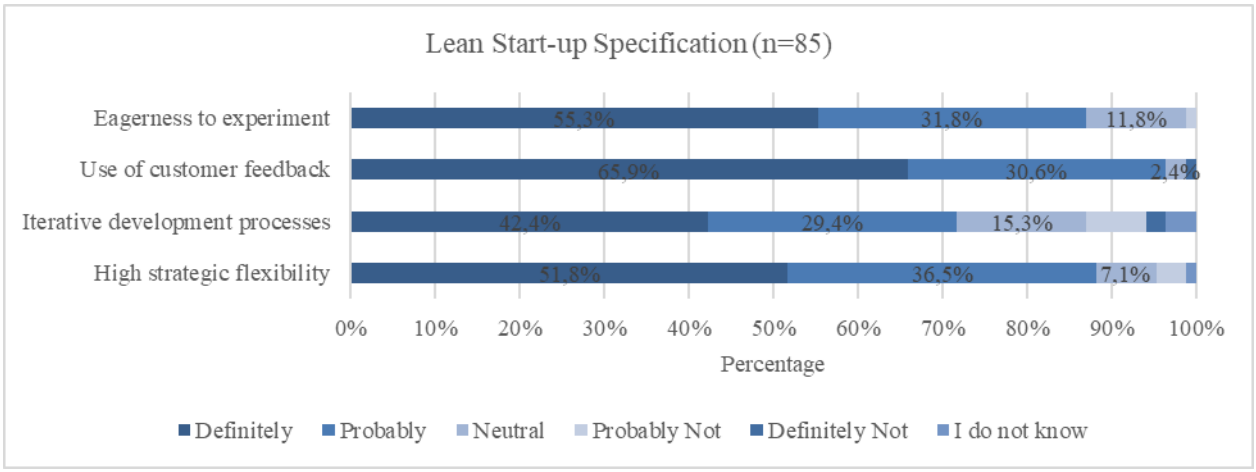

Fig. 2. Lean Start-up Specification.

With regard to factors that determine the complexity of the corporate environment, competition, social developments and macroeconomic trends are to be seen as major highly deterrent factors. New technologies, (product) development times and innovation competition are further determining factors that contribute significantly to the complexity of the environment. Politics and ecology determine the business environment only to a minor extent. In terms of their rate of change, the areas presented have a very dynamic effect. The distant corporate environment is considered less dynamic in comparison to the own industry.

4.3. Corporate Foresight in Start-ups

4.3.1. Characteristics and Organization

As illustrated in figure 3, the majority of start-ups apply CF in one way or another (96.5%). However, the degree to which they do so differs in terms of frequency. While 42.4% regularly perform CF activities, 28.2% perform CF occasionally and 11.8% seldomly. 14.1% carry out CF activities continuously. Only 3.5% of the participants state that they never carry out any future-related intelligence processes.

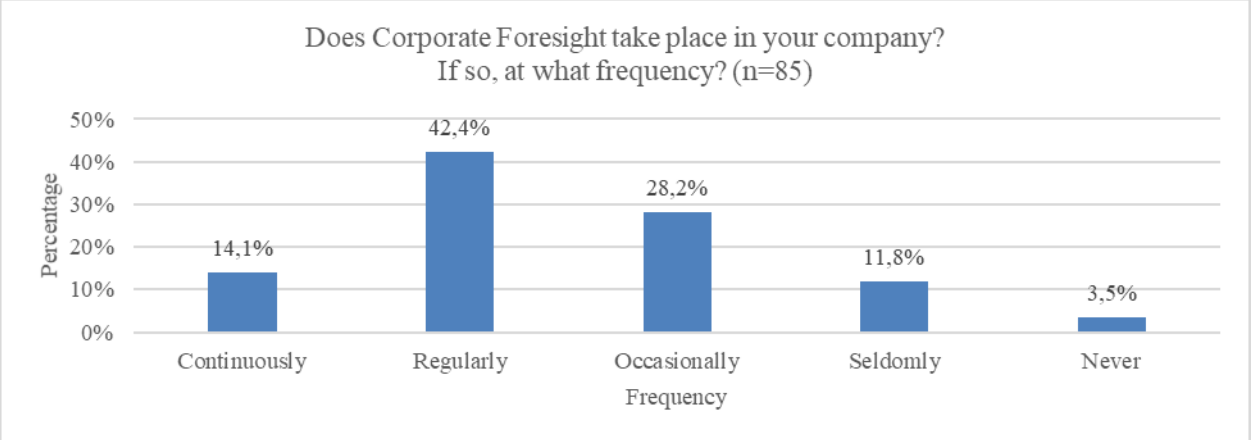

Fig. 3. Corporate Foresight in Start-ups.

In this context, there is a significant, weakly positive correlation between the dynaxity (dynamics and complexity) of the corporate environment and the nature of its CF processes. The correlation between CF and environmental complexity is higher and more significant than the correlation with environmental dynamics (see figure 4).

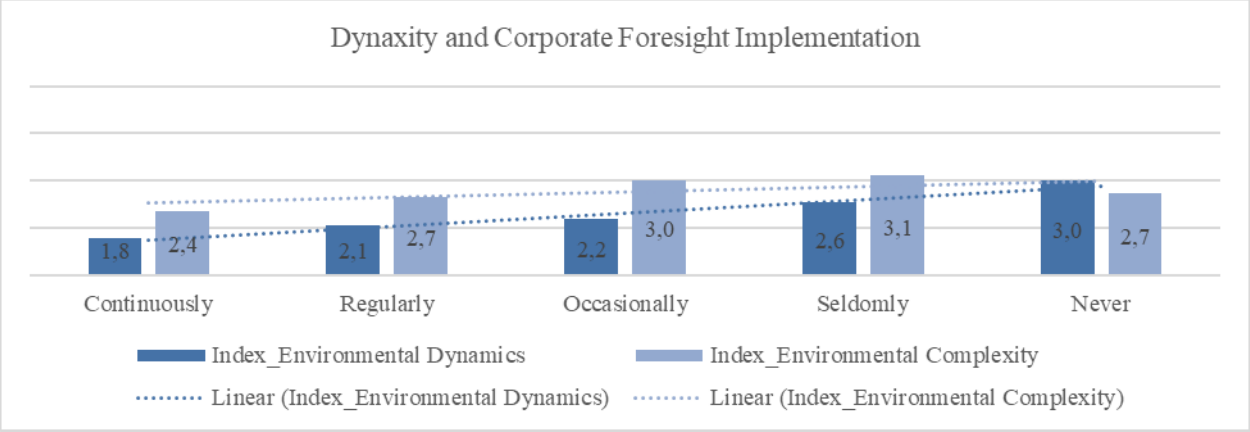

Fig. 4. Environmental Dynamics and Complexity and Corporate Foresight Implementation.

Another central question was whether start-ups with a high lean culture are pursuing CF. Thus, it shall be investigated whether there is a relation between the lean specifications of the start-ups and the characteristics of their CF activities. Findings show that there is a significant, weakly positive correlation between the lean characteristics of the participants and the characteristics of their CF efforts.

Looking at the organizational implementation of CF, 39.0% of the participants did not define responsibilities. In 32.2% of the companies, CF activities are the responsibility of individual persons. In this context, managing directors and founders are also considered. 18.2% organize CF in temporary (project) groups. In 6.2% of the companies there are specialized departments. 5.2% of the participants anchor CF in already existing departments that are not specialized in foresight.

Overall, the participants are characterized by a distinct knowledge of methods. A variety of methods are used. A tendency towards the application of simple and qualitative methods can be identified. The most frequently applied methods are creativity techniques (e.g. brainstorming, mind mapping, n=55), interviews with experts or opinion leaders (n=45), workshops (n=38) and desk research (n=35).

The results also illustrate that information is predominantly obtained from internal and easily accessible sources. For internal sources, experts (e.g. employees, project groups, specialized departments), private contacts and internal databases predominate. External sources are cited through the Internet and customer contacts. The results show that CF is increasingly understood as an open, participatory task. The majority of participants have a fundamentally open attitude towards the future.

Motives that lead to the examination of CF mainly refer to changes in the industry-related environment and in business development. Figure 5 lists the main motives that require CF activities. Since it must be assumed that continuous CF does not follow any special occasions, only participants who do not continuously practice CF (seldomly to regularly) are considered in the answers.

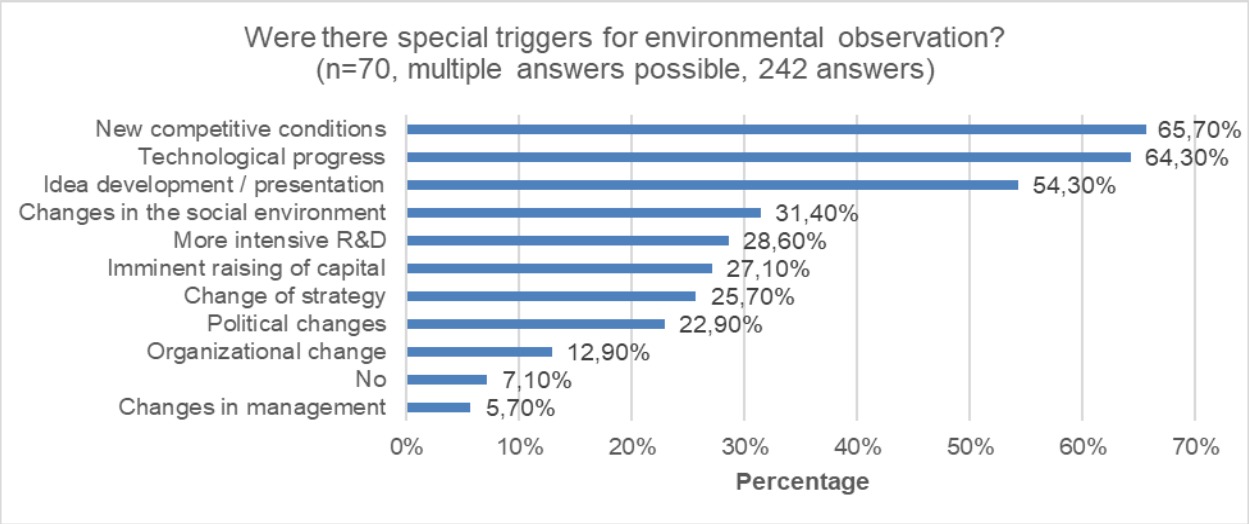

Fig. 5. Triggers for Environmental Observation.

65.7% and 64.3% of the participants cite new competitive conditions and technological progress as the main reasons for performing CF. 54.3% include CF in the context of development processes (concepts, prototypes) and idea presentations. Changes in the social environment are reasons for 31.4% of the participants to practice CF. More intensive R&D efforts, upcoming capital raising and strategy changes are reasons for one quarter of the participants. Political changes are seen by 22.9% of the participants as reasons for CF. Organizational change and changes in management are insignificant reasons. Only 7.1% of the participants cannot name any reasons for CF.

4.3.2. Content and Search Areas

Goals for the implementation of CF are diverse. For 73.1% of the responding participants, the overall goal is to identify future trends and environmental developments. Half of the companies strive for a critical reflection of existing views (50.0%). This is followed by striving to develop new visions (47.4%) and supporting strategic decision-making (46.2%). The development of a broad knowledge base and the identification of interesting cooperation partners is pursued by 41.0%.

Organizational strengthening of future thinking is pursued by about one third of the participants (35.9%). The same applies to the improvement of sustainable long-term planning (33.3%). An improved reaction time to environmental changes, strengthening of relationships or creation of a more open organizational culture are less important goals (23.1% each). 12.8% of the participants did not define any goals at all.

The application of CF outputs shown in Figure 6 suggests a trend towards quantifiable, directly visible targets. The majority of companies apply CF results mainly in product development (82.5%). A similar number of participants use the insights gained to prepare strategic decisions (80.7%). This is followed by direct derivations of corporate or partial strategies from the output of CF (68.4%). An application of the results as an impetus for new R&D projects and in the context of generating new business models or identifying new business areas is mentioned similarly often (66.7%).

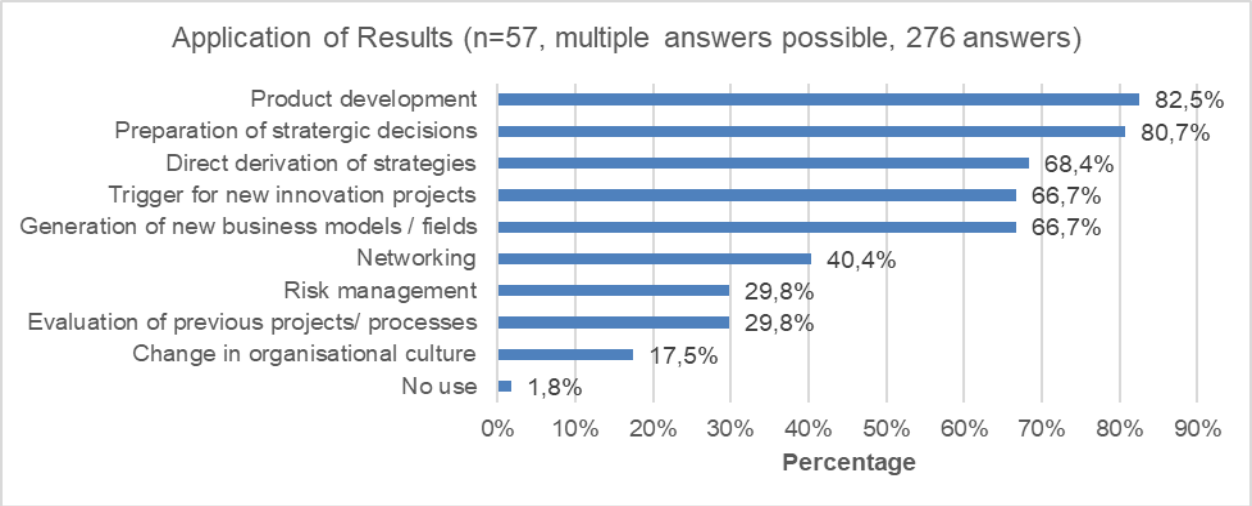

Fig. 6. Corporate Foresight Results.

CF as an instrument for network building is only considered by a few companies (40.4%). Only 29.8% of the participants consider CF information useful for risk management or as a basis for the evaluation of previous (R&D) projects and processes. CF results are also rarely used in the development of the organizational culture (17.5%). Only a small proportion of participants do not use the results at all (1.8%).

The results from figure 7 illustrate that start-ups mainly conduct technology-oriented CF in their own industry. 97.3% of participants observe events in their own industry (84.0% continuously; 13.3% occasionally). In comparison, 78.7% of the participants also observe other industries, whereby significant differences can be observed in the regularity (18.7% continuously; 60.0% occasionally).

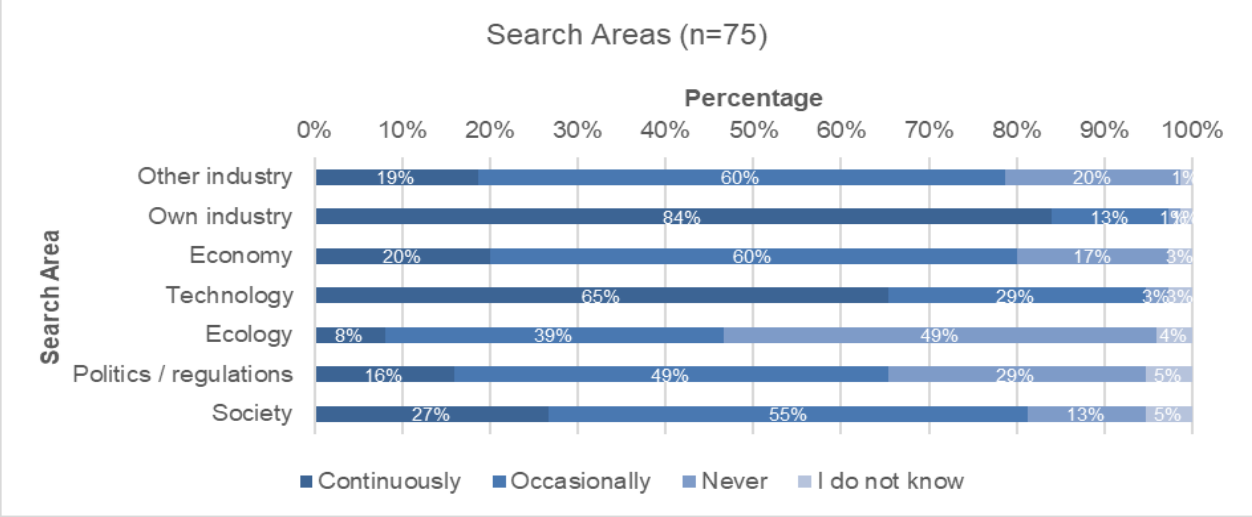

Fig. 7. Corporate Foresight Search Areas.

The most frequently observed environmental area outside the company is technology (65.3% continuously; 29.3% occasionally). The following deviation is significant. With only 26.7% continuous and 54.7% occasional observations, the analysis of social changes follows. Overall economic developments are also observed less intensively (20.0% continuously; 60.0% occasionally). The policy/regulation area is monitored continuously (16.0%). About half of the participants (49.3%) occasionally observe it, while 29.3% state that they never do so. The ecological environment is observed much less frequently. It is noticeable that 49.3% never observe this area at any time. 38.7% do so occasionally, only 8.0% continuously.

4.3.3. Barriers and Relevance

More than half of the participants (55.2%) see a lack of personnel capacities as the greatest challenge for the implementation of CF. A lack of methodological competence (32.8%) and insufficient quality of the data obtained (27.6%) are mentioned below. About a quarter of the participants stated that the difficulty of forecasting their own industry was problematic (25.9%). Besides high costs (22.4%), the participants are skeptical about the efficient use of information (17.2%) and its practical implementation (13.8%).

Only few companies see no need for long-term planning or find that CF requires further legitimation. This is underlined by the answers to the question of the future relevance of CF. For 58.3% of the start-ups surveyed, CF will become more relevant. 28.3% rate the relevance neutrally, while only 5.0% are critical of further use. 8.3% of the participants are not sure about this. CF has no greater future relevance for optimistic start-ups than for pessimistic ones.

5. DISCUSSION

5.1. Sample

The sample composition confirms that the participants are young, growing and innovative start-up companies and not larger SME or simple start-ups. The majority of the start-ups are not older than five years. The sector distribution increasingly includes techno-logically oriented companies. Computer engineering, technology, information and communication technology and trade dominate. The surveyed companies are highly innovative. The overwhelming majority state that they have developed new products, services or business models for the market.

5.2. Environmental Dynaxity

However, start-up companies have to deal with a complex and dynamic business environment. There is a highly competitive pressure, which is reflected in the high importance of innovations and short (product) development times. Social and macroeconomic developments in particular determine the environment. Political factors and the ecological environment are not significantly responsible for the complexity. The participants describe their industries as well as their corporate environments as objects of constant change. The change in the industries is more dynamic than in the corporate environment (society, technology, economy, ecology, politics = STEEP areas).

Since a large influence on companies results from the STEEP areas which are difficult to influence, it can be argued that long-term CF is necessary. A short-term market view is not sufficient considering the complexity of the environment. The age and size distribution of the participants also suggests a large development potential, in which appropriate resources must be identified to ensure growth.

The analyses have confirmed that there is a significant positive correlation between the dynaxity of the corporate environment and the degree of CF. Start-ups in complex and volatile corporate environments thus conduct more regular CF than start-ups in clearer and quieter corporate environments. The correlation between the degree of CF and environmental complexity is higher than the correlation with environmental dynamics. This finding confirms the importance of the external environment as a driver for CF.

5.3. Lean Start-up

In addition, the companies have a highly positive lean culture. The business activities are based on a high error culture in which ideas are analyzed through hypothesis tests and experiments. Almost all companies involve customers in the product development process from the very beginning in order to obtain important information

from customer feedback. An iterative 'step by step' development is also applied. This approach leads to a high strategic flexibility of the participants. A first theoretical analysis concluded that a lean culture makes CF superfluous. Looking at the results, it is obvious that due to the flexibility of the (product) development structures, there is no need for long-term CF, as companies can react to external developments at short notice.

However, a significant positive correlation was discovered between the lean characteristics of the companies and the characteristics of their CF. The more pronounced the lean culture is, the more regularly start-ups conduct CF. A high degree of lean and CF are not mutually exclusive; rather, there is a linear relationship. One reason for this could be the direct integration of CF instruments in the context of customer contact. On the other hand, lean processes could be structured in such a way that they correspond to the concept of CF. A clear demarcation between CF and the lean approach cannot be made at first.

The internal and external framework conditions described above create a high and constant pressure for change. Initially, the lean character stands in the way of a necessity for CF. However, a further analysis illustrates the opposite: 'Lean start-ups' operate CF to a high degree. A causal connection was not examined. Nevertheless, it can be concluded that the growth course within the framework of high innovation projects, innovation pressure and determining external environments require early strategic orientation.

5.4. Corporate Foresight in Start-ups

Nearly all companies respond to this with variously pronounced CF efforts. The proportion of companies that carry out CF increases with the intensity of the activities. The only aspect that does not fit into this trend is a continuous engagement with CF. It should therefore be noted that start-ups deal with CF in one way or another, regardless of their resources (measured by age and size). This leads to the conclusion that corporate management is strongly future-oriented. This finding is not surprising given the innovative character of start-ups. Despite different intensities, a first CF profile can be created for start-ups.

The majority of these are temporary, event-related early endeavors. Continuous CF is the exception. If CF is not carried out on a continuous basis, there are only a few companies that do not state reasons for exercising CF. In most cases, CF activities are based on changes in competition and technology. A third important reason is the development of concepts or their presentation. These findings confirm the assumption that CF is carried out in response to external environmental complexity and dynamics. Furthermore, CF seems to be used as an instrument to generate input for development processes and to support strategic decisions. CF in the context of organizational change is of little importance.

The organizational responsibility for CF is not defined for the majority of participants. If it is carried out in a coordinated manner, the responsibility lies mainly with individual persons and to a lesser extent with temporary (project) groups. This leads to a low degree of structuring of CF. This illustrates that CF in start-ups is a person-oriented process and is hardly ever used across companies. This can be primarily attributed to the small size of the companies. Another reason for the uncoordinated, centralized organization can be related to the influence of the founders, who are responsible for the management of the company, 'taking CF into their own hands' and combining future work with strategic management. It is assumed that these solely responsible bodies direct CF top-down. This bears the danger of ignorance towards interdisciplinary questions and problems. It also makes it more difficult for other members of the organization to perceive CF. On the positive side, the connection to CF seems to be more developed than personal opportunism.

The specification of CF objectives is congruent with the above-mentioned occasions. Building on the changes in the industries, the main objective of CF is to identify future trend and environmental developments, followed by the intention to critically reflect previous views, develop new visions and support strategic decisions. These objectives are of a strategic nature and are primarily aimed at providing input for innovations. According to the innovative character of the participants, the goals can be linked to an active shaping of the future. It can also be argued that this is a uniform guiding principle of CF and that the importance of CF is determined by offensive innovation strategies. The objectives contain elements of motivation for OF. Critical reflection, the development of visions and the identification of partners are mentioned as essential goals. Goals that affect the organizational culture are less relevant.

Overall, search areas are usually only monitored occasionally. Data shows that start-ups carry out intensive CF mainly technology-oriented in their own industry (Technology/Competitor Foresight). The CF processes are therefore more likely to be strategic market research or technology monitoring. Developments from other industries seem to play an important, albeit secondary role. In connection with environmental complexity, the search areas

seem to be chosen according to the influence of the environmental areas. However, there are indications of undirected search processes. Especially for the social area, the complexity is described as high, whereas the search activities are low.

These are first signs of an organizational/cognitive inertia due to an excessive focus on current business. This limitation can also be seen in relation to the objectives. While the aim is to identify trends and generate knowledge, a broad view of the environment is only occasionally taken, although this is an essential basis for CF. Especially the ecological environment and the political sphere are to a large extent never considered. However, it is precisely the founders' scene that is subject to special regulatory determinants, as the reformatory 'Anti-Angel Bill' on higher investment taxation of newly founded companies or the discussion of net neutrality on the Internet have shown. Nevertheless, these findings confirm the search areas of LE.

The search activities are not very systematic. Thus, many of the participants do not know how their CF activities are coordinated. This suggests little transparency of the processes. If this is known after all, the majority conduct a broad search. This means that attitudes towards an open view of the peripheral environment are pronounced. Thus, the environment is observed in an undirected and open manner even for irrelevant trends. However, the broad pro-active search bears the danger of identifying only well-known (mega) trends that are unspecific and whose findings are difficult to implement. However, this insight conflicts with the information provided on the search areas that are less widely observed.

Potential applications of the results were shown in the theoretical part of the thesis. Primarily, potential uses are seen in business planning and relationship maintenance or public relations. Predominantly individuals or founders are responsible for CF. Therefore, it is not surprising that the outputs are used directly in strategic matters. This may also be due to the fact that temporary projects, the second most common form of organization, are increasingly aimed at project-related (strategic) insights. Furthermore, decisions on trend-setting technological options are critical to the success of start-ups that are still in development. These decisions should not be made without sound knowledge. CF initially serves to support strategic planning, but is also used to directly derive corporate or partial strategies. At the same time, CF 'feeds' innovation management with impulses for new innovation projects, for the generation of new business models and for product developments. According to this, CF is used in the surveyed start-ups in business planning and in the identification of opportunities.

Considering the goals and the actual use of results, it can be argued that CF increasingly takes on the role of initiator as well as strategic instrument. In addition, the findings confirm the assumption that CF is used in the context of securing an objective based on certain values (normative vision of the future). CF as an early warning system or continuous service does not play a role that is apparent from the data. The use of the results confirms that OF objectives, with exception of network formation, are not consistently pursued.

Overall, the participants are characterized by a distinct knowledge of methods. A variety of methods are used, whereby a tendency towards the application of simpler, creative and qualitative methods can be noticed. The use of predominantly qualitative methods corresponds to the method selection of LE. However, a multidisciplinary and diverse mix of methods is not evident. Furthermore, the applied methods are rather input methods. There is a recognizable deficit in the use of analytical and especially prospective methods. For example, there is no focus on creating visions or developing scenarios. Participatory or OF methods are rarely used and the intensity of their application is not very high in comparison. There is little use of methods tailored to individual needs (e.g. own online communities or idea competitions). From a methodological point of view OF is underdeveloped. In addition, these methods still suggest a normative view of the future for start-ups. Thus, the portfolio of methods is suitable for planning to achieve this vision based on a concrete future vision. These are more trend explorations than strategic developments of future scenarios. There is a risk of bias as a result of which attempts are made to validate existing visions using certain methods.

With reference to the sources of information, it can be argued that the opening of company boundaries is only taking place to a limited extent. The data show that regular information is mainly obtained from internal, low-cost and easily accessible sources. The participants are striving for decentralized idea generation, but the information sources are concentrated on environments directly involved in the competition (suppliers and consumers). The intensity of external contacts is relatively low. It can therefore be argued that no cooperation takes place, but rather that these sources are occasionally 'tapped'. Only customers/users seem to be directly integrated into the CF process as external experts. This insight confirms the intensive customer contact resulting from the lean approach.

In connection with results of the method selection, external experts seem to be lead users more often, because interactive methods involving unknown sources are used very little. Although the Internet and social media play an essential role in the procurement of information, it is clear from the portfolio of methods that online communities

are not actively operated by companies. This generally points to an outside-in approach. This also explains the high participation of competitors, which is more the subject of industry-related observations than the result of active cooperation. The low level of involvement of politicians, NGOs, and public institutions and the media suggests that only relevant sources are consulted, considering the information on environmental complexity. It can be stated that these are information source-oriented CF approaches, in which, in addition to internal knowledge, information generated by lead users in particular is regarded as valuable.

The degree of openness of CF can be assessed e.g. by diversity of external partners. In this survey, the data only allow for assumptions about the directions of information exchange, but an opening of corporate boundaries in the sense of OF is not very pronounced and is limited to selected external sources. Overall, we can speak of a fundamentally open attitude towards the future and a change-friendly culture of start-ups. In this way, the future is seen as multiple and influenceable. This shows that participants not only think reactively, but are also sensitized to actively shape the environment. They are characterized by a willingness to learn, which sees external change as an opportunity. This can be seen as a motivation for CF and shows that participants want to counteract path dependency. This is confirmed by a positive conflict culture.

The active support of top management and decision-makers indicates a high awareness of the necessity of CF. An independent definition of objectives by those involved in the process remains less pronounced. This can be seen as a proxy for deficient internal participation. Processes seem to run increasingly top-down, whereby broad interaction and networking of the people involved is of secondary importance and their creative participation is less important. Thus, the participants in CF seem to be specifically selected, since the promotion of the highest possible number of participants is the characteristic that is least (positively) pronounced.

In this respect, there is a contradiction in the information provided. For example, CF processes appear to have open structures, as it is stated that any interested person can contribute to CF regardless of his or her affiliation or role in the company. The use of modern information and communication systems, which are oriented towards the environmental context and therefore allow easy access, also indicates simple and open participation possibilities. However, companies are critical of an open exchange with relevant stakeholders outside the company and the opening of company boundaries in the context of information gathering is not seen as a complete advantage. Thus, CF processes are less oriented towards transparency, although results of CF are openly communicated. Despite a high degree of lean in the area of iterative development, CF processes are not conducted in a step-by-step repetitive manner or continuously improved.

The main obstacles to CF are lack of human resources, method deficits and uncertainty about the quality of results. Thus, companies see themselves overburdened with additional work processes in an area that is methodologically difficult to deal with. From this it can be concluded that start-ups do not associate CF with high costs or lead cheap processes. In contrast, the general attitude towards CF is only questioned by few participants. This can be interpreted as an indication of satisfaction with the results.

As a result, CF is of great importance for companies. For more than half of the participants CF will become more relevant in the future, while only a small part critically considers a further application. This shows that there is a broad awareness of the necessity of dealing with future developments. CF has no greater future relevance for optimistic start-ups than for pessimistic ones. The integration of CF in companies is therefore independent of the business situation.

Basically, the companies show a very open culture and many elements of the OF approach are integrated. However, the elements essential for OF (network size, integration of external interest groups, observation of environmental areas remote from the company, open process organization, formation of visions) find the least approval or are at least most pronounced. Furthermore, the motives for exercising CF do not fully cover those of OF and the methods applied are less participatory. Thus, OF is applied in its basic features, but companies are far from systematic OF. However, there is a promising basis for future participatory CF.

This raises the question of the usefulness and reliability of unstructured, temporary CF processes. The results have shown that future-oriented early education plays a role in start-ups. Nevertheless, it can be argued on the basis of the collected data that there is potential for improvement, because CF processes are not continuously and minimally coordinated. A first approach in the direction of a systematic CF can be the introduction of continuous project groups in order to take the responsibility for CF away from the managing directors and founders and to develop first structures which are able to cope with an increasing company growth. Similarly, the search areas should be defined and expanded in order to replace the fixation on trends in the areas of technology and competition with a holistic thinking in contexts. According to the unstructured search, there is currently rather a ‘fishing in muddy waters’.

The findings on methods and sources of information show that start-ups should broaden their horizons and apply more suitable methods to counter the danger of inefficient CF processes. In particular, there is potential for development in the exchange with the external environment. However, organizational factors and implementation problems limit the exercise and the presented CF methods may not always be applicable in start-ups. Rather, implementation must be coordinated with goals, planning horizons and resource availability. These are the main points that distinguish start-ups from SME and LE when applying CF. A first approach could be to promote internal and external networks (practice circles, regular conferences, B2B communities). In particular, participatory methods using collective intelligence and modern information and communication technologies seem to be ideally suited for implementation in the context of lean start-up and CF.

Thus, OF represents a unique opportunity to combine external trend analyses with internal thoughts and to further develop customer feedback in a structured dialogue. However, an initial focus should not be on concrete methods, as the choice of methods is not crucial for the success of CF. Regardless of the methodology, efforts should focus on steering interaction and participation.

6. CONCLUSION

To begin with, this paper discusses the potential of CF in start-up companies. It intends to draw the attention of founders and scientists to this discipline to initiate further research. Furthermore, a first profile of the necessity of CF shall be presented and the CF activities of those special companies be described. This was accompanied by the motivation to examine CF in the context of Lean Start-up culture.

A literature review with subsequent discussion of possible interrelations was applied to create first insights on the topic and potential value of CF for start-ups. As main research design, an ex-post facto study in the form of a cross-sectional survey was chosen as research design. The underlying survey method is a written online survey among start-up companies. The results are presented in a descriptive manner, research questions are answered by investigating correlations and differences in the central tendencies.

In principle, CF is an area that has been little researched. A crucial research gap was discovered in connection with start-ups. Literature review describes areas that justify the need for and potential value of CF in start-ups. In general, CF endeavors may support EO identification and development of entrepreneurial alertness, both in entrepreneurial Discovery Theory and Creation Theory. The openness of an organizational culture may be enhanced, as well as improving entrepreneurial characteristics such as hope and founder motivation. In specific, CF can provide essential input for hypothesis generation or validation in the context of Lean Start-up theory. Open CF approaches may improve mechanisms that allow an increased participation of stakeholder groups, e.g. in strategic development processes.

With processable answers from 85 start-ups, it was possible to evaluate the status quo of the companies' CF activities. These are characterized by strong endeavors. Thus, almost all of the companies surveyed, are in some way concerned with future-related work, regardless of age and company size. However, the processes differ in the frequency with which they are carried out.

Overall, few processes are managed systematically. Organizational responsibilities are usually not defined and the main reasons for CF are changes in the areas of competition and technology. The main drivers are growth plans, complex competitive situations and the pressure to innovate in dynamic environments. Observed search areas are mainly the own industries and technological developments. However, the search is not very structured. The methods used are easy to apply, cost-effective and more qualitative. Their use is increasingly irregular. Information on future developments is mainly obtained from internal sources, direct customer contact and easily accessible sources.

Essential goals are the identification of trends, own critical reflection and the development of visions. Similarly, the results of CF are mainly used in strategic decision-making and innovation management. Goals and areas of application relating to the organizational culture are weakly developed. So, the concept of OF is only applied in its basic features. Companies have a generally open attitude towards the future. However, the first deviations can be seen in the implementation. For example, the motives for exercising CF do not fully cover those of OF, the methods used are less participative and the opening of company boundaries in the CF process is not very far advanced.

Findings state that strategic future work has an important role in start-ups. Still there are obstacles to overcome, mainly resource allocation for CF activities and the lack of suitable method sets and competences. Methods based on collective intelligence that make use of modern communication technologies seem to be a proficient approach to participation.

Based on this study, the majority follows an intensive Lean Start-up approach. Findings show that intensities of the lean approach and CF have a positive correlation. This leads to the understanding that Lean Start-up and CF concepts are not mutually exclusive. This could lead to a new research area not separating the theories of CF and Lean Start-up but rather linking them. This is a key finding, because after a first theoretical assessment there seemed to be no potential for systematic CF for lean start-ups. In addition, the assumption was confirmed that environmental complexity and dynamics are key drivers for the performance of CF.

Future research needs to be provided with more detailed concepts, especially within OF. Terminologies and corresponding methods need to be defined more precisely. Then a better value of (open) CF can be argued. Furthermore, findings on the correlation of CF and lean culture establishes potential for new research areas with interfaces to other entrepreneurial fields. Further research should therefore deal with representative sample sizes and an innovation system's integration of CF. However, CF framework conditions and main drivers have to be considered in cause-and-effect analyses. In addition, it must be illustrated how CF activities can be integrated into different business processes and their functional departments. Size, age and resource strength of individual companies have to be considered in evaluations.

In conclusion, it has to be clarified that there is no system that predicts the future accurately. However, CF can lead to a competitive advantage. This means that companies that do not look at their future in an open way cannot shape it at all.

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Simon Dummel is a doctoral student at the University of Salzburg Business School (Austria). His dissertation project explores the relationship between Corporate Foresight, sales integration and innovation capacity of organizations. He holds a bachelor's degree in 'Business Administration' from Baden-Wuerttemberg Cooperative State University (Ravensburg, Germany) and a master's degree in 'International Business and Sustainability' from the University of Hamburg (Germany). He worked at renowned international companies, e.g. as Area Sales Manager within Michelin and as Consultant for Volvo Cars Corporation. For the latter he accompanied various projects specializing in project management, market implementation, as well as process optimization and investigation studies. His research interests lie in the fields of Corporate Foresight and Market Intelligence.

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Unemployment Benefits in the EU - Obstacle or Booster of Total Factor Productivity?

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Abstract

The topic to reform the current unemployment benefit systems is highly discussed among the European authorities. The aim of the paper is to determine the long-term effect of unemployment benefits on total factor productivity in the member states of the European Union. By means of cointegration panel regression, the long-term impact of unemployment benefits on the total factor productivity index is estimated on the sample of 28 member states. The observations cover a period from 1995 to 2017. Total factor productivity is defined as the Solow residual and in line with endogenous growth theories explained as a product of knowledge (proxied by human capital stock and research and development stock) and residual set of factors, including institutions. The empirical results confirm the presence of log-term cointegrated relations between unemployment benefits and total factor productivity, while their effect is estimated as negative. The findings imply an importance of adequate policy measures to decrease the generosity of national unemployment benefit systems.

Keywords: unemployment benefits, total factor productivity, the European Union, panel cointegration regression

1. INTRODUCTION

Recently, an increasing interest to reform the existing unemployment benefit systems can be detected among the European policy makers. Albeit, the debate about the importance of appropriate unemployment benefit systems in the member states is not only a current phenomenon. Unemployment benefits present one of the 20 policy domains of the European Pillar of Social Rights where is stated that "the unemployed have the right to adequate activation support from public employment services to (re)integrate in the labor market and adequate unemployment benefits of reasonable duration, in line with their contributions and national eligibility rules" (EC, 2020a). The topic to fully implement the European Pillar of Social Rights and reform unemployment benefit systems to support workers who lose their jobs due to external events affecting the European economies have been highlighted by Ursula van der Leyen in her Political Guidelines for the next European Commission 2019-2024 (von der Leyen, 2019). Currently, this agenda is adopted as one of current 6 Commission priorities. The European Commission have already announced a planned proposition of the European Unemployment Benefit Reinsurance Scheme (EC, 2020b).

However, any policy actions to reform the member states´ unemployment benefit systems that are characteristic with high heterogeneity requires a previous assessment of their effects on main macroeconomic aggregates. In this study, we focus on total factor productivity. As it is an indicator of qualitative aspects of growth; it can be considered as a key determinant of long-term economic prosperity and national competitiveness. The economic theory and contemporaneous empirical studies give only ambiguous answer on the role of unemployment benefits in determining aggregate productivity. It implies a necessity of further empirical analysis.

The aim of this paper is to determine the long-term effect of unemployment benefits on total factor productivity in the member states of the European Union. The total factor productivity is defined as Solow residual, i.e. that part of total output which rest after accounting of labor and capital inputs. The theoretical background for the empirical

analysis is represented by endogenous growth theories that emphasize the role of research and development, human capital and structural parameters (including institutions) in determining total factor productivity. Furthermore, we assume an existence of long-run relationship between productivity and regressors leading to the application of cointegration regression.

The paper is organized as follows. After a brief introduction to the topic, the research aim is presented. The second section is devoted to the theoretical background on the relation between unemployment benefits and total factor productivity, enriched by overview of empirical studies. Moreover, the current systems of unemployment benefits in all member states are analyzed. The next section summarizes the empirical model, methods and data applied in the empirical research. The fourth section presents the empirical findings. The last section summarizes the main conclusions and provide a short discussion on the relevancy of our findings.

2. Theoretical Background and Empirical Evidence

Unemployment benefits as other labor market institutions alter individual decisions by imposing constraints or incentives. In general, institutions introduce a *wedge* between the reservation wage and the value of a job, it means between labor supply and labor demand. Unemployment benefits act on the price of labor. They force employers to pay higher wage than the reservation wage of the marginal job and workers to get less than the real cost of labor (Boeri and van Ours, 2013). More precisely, unemployment benefits provide protection to individuals against „uninsurable labor market risks". These benefits offer replacement income to workers who had become unemployed through public finances (Sloane et al., 2013). The benefits are provided by unemployment insurance. There are numerous objectives that motive governments to introduce an unemployment insurance program, particularly: income replacement, protection against poverty due to unemployment, incentives to join labor force, better job matching, macroeconomic stabilization or promotion of economic restructuring (Palme et al., 2009).

2.1. Unemployment benefits and total factor productivity

Numerous theoretical works deal with a question about the impact of unemployment benefits on main macroeconomic aggregates. However, the conclusions are ambiguous. The theoretical findings are even more contradictory in the case of productivity. As Freeman (1992) pointed out, the recent research in labor market institutions is dominated by two contradicting intuitions, distortionism and institutionalism. The former claims that institutions impede economic growth, while according to the latter institutions can reduce costs, enhance productivity or moderate crises.

In imperfect labor markets, unemployment benefits affect labour market outcomes through three channels, namely: a) job search effect, b) wage effect, c) entitlement effect (Boeri and Van Ours, 2013). We are interested only in the first effect as it leads to the creation of more productive, high quality post-unemployment jobs that should have positive impact on productivity. It is caused by the fact that unemployment benefits increase the reservation wage of recipients giving them more possibilities to decide upon available job offers and extending the duration of unemployment (for more details on job search theory see Lippman and McCall, 1979).

Acemoglu and Pischke (2001) and Marimon and Zilibotti (1999), using bilateral job search models with heterogeneous agents and jobs, suggested that a positive level of unemployment benefits is required to maximize output. Otherwise jobseekers (mainly poorer ones) would be discouraged from applying for high-productivity jobs and firms would not create them. In their models, unemployment generated by unemployment benefits, has an efficiency-enhancing effect because it leads to the generation of better matches and higher-productivity jobs. But, in the case of too generous systems, efficiency-enhancing job reallocation may be reduced. A possibility that generous unemployment benefits increase high-risk and high-productivity jobs by encouraging unemployed to accept jobs with high risk of dismissals were considered also by Acemoglu and Shimer (2000). Lagos (2006) expected a positive effect of generous unemployment benefit systems on average productivity level as it increases the proportion of high-skilled workers in the workforce.

On the contrary, too generous systems likely increase the duration of unemployment leading to human capital depreciation and inefficient use of resources (OECD, 2007) which has in turn negative impact on productivity. Moreover, a reduction of opportunity costs under generous unemployment benefits reduces the work effort of employees and thereby lower the productivity (Shapiro and Stiglitz, 1984). Negative consequences of generous unemployment benefit systems might be mitigated by suitable active labour market policies. Thus, the final effect of both passive and active policies is given by the relative extent of concrete programmes.

Although empirical studies could arbitrate theoretical contradictions about the role of this labor market institution, their results are also inconclusive. It can be caused by certain limitations of the current empirical research: a) only

little evidence on their impact in developing countries, and b) only a narrow set of outcomes taken into consideration when their impact is assessed (Betcherman, 2012).

An evidence of the link between generous unemployment benefits and higher quality job matches can be found in Pollmann-Schult and Büchel (2005), Centeno (2004), Belzil (2001), Addison and Blackburn (2000) or Polachek and Xiang (2005). A positive effect of unemployment benefits on the relative levels of total factor productivity and labor productivity in high-risk industries compared to low-risk ones was provided by Bassanini and Venn (2007). On the contrary, Dolenc and Laporšek (2013) found out a negative impact of unemployment benefits on productivity.

2.2. Unemployment benefits in the European Union

In the present days, the European union does not regulate unemployment benefits at the supranational level. The EU rules determine which country is responsible for payments. Most EU member states apply mandatory system of unemployment insurance, albeit with very different arrangements. As result, high level of heterogeneity exists between the national systems.

To provide detailed cross-country comparison of unemployment systems, three dimensions are crucial:

- Eligibility conditions – access to benefits and coverage (number of entitled persons)
- Entitlement – duration and level of payments
- Financing – actors who carry the costs

In all member states, eligibility for unemployment benefits is conditioned by defined record of paid employment (Palme at al. 2009). The requirements are usually specified in terms of contribution period (number of weeks of contribution required to qualify for benefit, made in course of reference period), reference period (number of weeks within which contribution record must have been fulfilled), work intensity (number of weekly working hours) and work concept (definition of working activities). One of the possible methods to assess the strictness of qualifying condition is to use a composite index based on the ratio of contribution period and reference period (the higher the index is, the stricter the conditions are). According to calculated values for 2018 (see the first column of Table 4), the strictest conditions were applied in Cyprus and Poland and the most indulgent ones in Italy and France. Cross-country variation is rather induced by differences in reference period, which varied from 26 weeks in Cyprus to 312 in Spain in 2018. Range of contribution period was relatively limited with typical length of 52 week. Period longer than 18 months for unemployment benefits eligibility was required only in Slovakia and shorter than 6 months nowhere.

Added to above mentioned criterion, the receipt of payments in all the member states is also conditioned by obligations to be registered at national employment office and actively search for a job and in most cases to be involuntary unemployed. An exhaustive list of other country-specific conditions (relating to age, residence, ability to work, enrolment in education, maximum period for the claim, etc.) can be found in MISSOC Comparative Tables (2019). Noted that the overall strictness of all these eligibility conditions affects the number of entitled persons. In 2010, the average coverage of unemployment insurance programs in the EU was around 75% (measured by the ratio of total number of people formally entitled to unemployment insurance benefits to labor force). For country-specific information on unemployment insurance coverage in 2010 see Table 1.

With exception of Belgium, all member states have a limit for the duration of unemployment benefits which usually depends on insurance period and it is prolonged based on the age of workers. The maximum number of weeks during which UB were payable to entitled persons are depicted in the fourth column of Table 1. With aim to get comparable data, specific additional criteria based on which entitlement duration can be extended/reduced, are not considered. In 2018, the shortest period of 13 weeks was reported in Hungary and Netherlands, while in Denmark and Spain entitlement duration reached 104 weeks. The latter is relatively long period even compared to the second longest entitlement duration of 57 weeks in Finland. Italy constitutes a specific case as statutory duration is limited to half the number of weekly contributions paid during the last 4 years prior to dismiss.

In almost all EU member states, there is an earnings-related reference basis for calculation the level of entitlement. Only exceptions are Ireland, Malta and the United Kingdom with flat-rate benefits and Poland with benefits dependent upon the length of economic activity. Moreover, ceiling for reference earnings are applied in order to limit the maximum level of benefits in majority of analyzed countries. In 2018, EU member states with no ceiling on reference earnings are Denmark, Finland, Greece, Hungary, Ireland, Lithuania, Luxembourg, Poland, Romania and Slovenia.

To compare the level of unemployment benefits across the member states of the European Union, we analyze replacement rates that offer internationally comparable data and allow us to assess the generosity of unemployment

benefits systems. More precisely we use two alternative indicators published by OECD: gross replacement rate (gross unemployment benefit levels as a percentage of previous gross earnings) and net replacement rate (the proportion of net income maintained after job loss). The latter one provides more complete measure of work incentives and income maintenance and it is published in tree versions - net replacement rates during the initial phase of unemployment, for five-year period of unemployment and on the long term.

Table 1. Unemployment benefits in member states of the European Union

Country	CP/RP	Coverage*	Duration	GRR	NRR	Exp.
Austria	0,50	68,2	30	27,5	72,4	0,9
Belgium	0,67	66,4	Unlimited	37,2	64,3	1,2
Bulgaria	0,67	65,8	43	-	78,6	0,4
Croatia	0,38	-	26	-	70,8	0,3
Cyprus	1	78,90	22	-	117,5*	0,5
Czech Republic	0,50	90,8	22	6,2	65,5	0,2
Denmark	0,33	71,5	104	32,1	91,1	0,7
Estonia	0,33	73,80	52	-	70,5	0,3
Finland	0,25	76,1	57	34,6	79,4	2,3
France	0,15	60,8	17	35,6	67,5	1,5
Germany	0,50	67,4	52	20,8	74,3	0,7
Greece	0,38	1	52	10,6	43,8	0,4
Hungary	0,46	87,4	13	10,1	58,2	0,1
Ireland	0,50	1	39	42,5	79,5	1,0
Italy	0,12	53,2	Otherwise	11,0	71,6	0,7
Latvia	0,75	74,8	39	-	75,6	0,5
Lithuania	0,40	66,9	39	-	61,9	0,2
Luxembourg	0,50	94,90	52	26,7	89,2	0,5
Malta	0,48	87,6	22	-	51,6	0,3
Netherlands	0,72	82,5	13	33,3	82,8	1,3
Poland	0,94	54,40	26	9,9	64,5	0,1
Portugal	0,69	76,10	52	39,1	76,2	0,7
Romania	0,50	42,50	52	-	44,4	0,1
Slovakia	0,50	57,30	26	8,3	59,2	0,2
Slovenia	0,38	80,3	52	-	72,9	0,3
Spain	0,23	57,5	104	31,4	67,6	1,3
Sweden	0,50	95,9	43	37,5	62,9	0,3
United Kingdom	0,48	85,1	26	11,7	70,5	0,1

*Note: - data not available, * data for 2014, CP/RP – contribution period to reference period in 2018, Coverage - share of formally entitled persons on labour force in 2010, Duration – maximum weekly entitlement period in 2018, GRR – gross replacement rate in 2011 as %,, NRR – long term net replacement rate in 2016 as %, Exp.. – expenditures on full unemployment benefits as % of GDP in 2016*

Source: Own construction based on data from OECD.Stat, MISSOC Database, The Social Insurance Entitlements Dataset and Eurostat.

Data on gross replacement rate (see GRR in Table 1) indicate that entitled persons in member states of the EU on average received gross unemployment benefits equal to almost one quarter of their previous gross earnings. However, national rates varied considerably, from 6,2 % in the Czech Republic to 42,5% in Ireland. Albeit GRR are useful characteristic as there are directly connected to program regulations, the effect of income taxation should be considered, too. Regarding net replacement rates (see NRR in Table 1), the EU member states have relatively generous UB systems. Only Greece and Romania had UB lower than one half of previous net earnings in 2016. Beside income taxation and social security contribution, NRR accounts for housing benefits, social assistance and in-work benefits leading to, in general, higher rates. In some EU countries, the differences between NRR and GRR were especially

large with the biggest one in the Czech Republic (NRR more than 10 times higher in 2011). Looking at longer time series of net replacement, we can conclude that the member states don´t follow a general path in the case of UB generosity. Net replacement rates have increased over the last decades in 13 member states with the biggest increase in Bulgaria (20,9 percentage points between 2008 and 2016). The rest of the EU member states recorded decreasing values of NRR with the most noticeable decline in Slovakia (28,2 percentage points between 2001 and 2016).

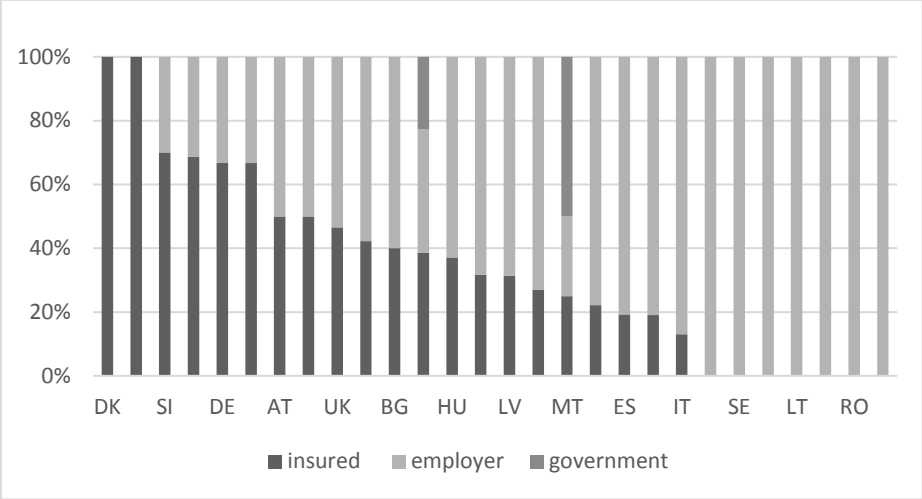

Fig. 1. Funding of UB in the member states of the EU – mandatory contributions, 2018

In all member states of the European Union unemployment benefits are financed from contributions to unemployment insurance programs. In majority of cases mandatory contributions are split between insured persons and employers. The exceptions are Cyprus and Malta where government provides fixed contributions, too. The costs are entirely born by the insured in Denmark and Luxembourg. On contrary, the employers are sole contributors in Croatia, the Czech Republic, Lithuania, the Netherlands, Poland, Romania and Sweden. More details on the structure of funding of mandatory contributions in 2018 can be found in Figure 1.

The relative importance of government in the remaining 26 member states of the European Union varies from providing subsidy (in Denmark, Finland, Greece, Hungary, Italy, Latvia, Luxembourg, Spain and Sweden) to no formal involvement in financing (in Bulgaria, Croatia, Estonia, France, the Netherlands, Portugal and Slovenia). If contributions are not enough to cover benefits to unemployed workers, government covers the deficit in Austria, Belgium, the Czech Republic, Germany, Ireland, Lithuania, Poland, Romania, Slovakia and the United Kingdom.

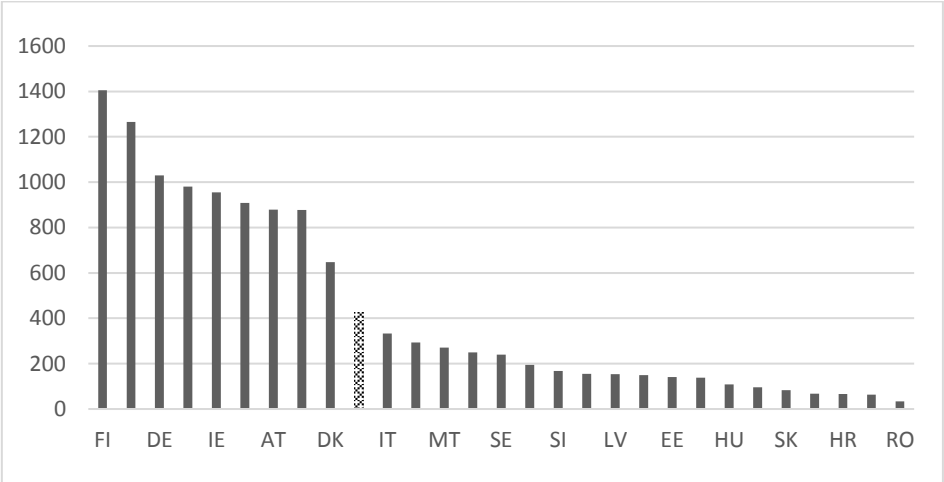

Fig. 1. Funding of UB in the member states of the EU – mandatory contributions, 2018

On average, expenditure on unemployment benefits in the EU accounts for relatively small portion of GDP not reaching more than 1% of GDP (since 2000 onwards). In 2016, expenditures on full unemployment benefits ranged from 0,1% of GDP in Hungary, Poland, Romania and the United Kingdom to 2,3% of GDP in Finland (see Table 1). In the case of these countries, it is a long-term pattern to be at top and bottom positions. Beside Finland, relatively high shares of UB expenditures to GDP can be observed in Belgium, Spain, France or the Netherlands, too. Notice, that yearly rates varied among countries and time also due to economic cycle.

As a result of heterogeneity in national unemployment insurance schemes, even more obvious variation exists in the absolute amount of benefits paid to unemployed persons. Figure 2 shows average monthly full unemployment benefits per unemployed person in all EU member states for the latest available year (2016). While the highest average benefits in Finland reached more than 1400 EUR (PPS) per month, in Romania an unemployed got on average less than 40 EUR (PPS) per month. At that time, only 9 out of 28 member states recorded per unit expenditures higher than the EU average and in 14 states per unit benefits not reached even half of it. Comparing previous institutional descriptions of national systems with data on paid benefits, countries with high expenditures on unemployment have typically less strict eligibility conditions (leading to relatively high coverage), long duration of entitlement and high replacement rates.

3. The Empirical Model and its Estimation

The main assumptions behind our empirical specification is an endogenous determination of the total factor productivity. Therefore, the growth of TFP can be explained in line with endogenous growth theory as a product of knowledge accumulation and residual set of factors including institutions. In addition, we assume that a long-term relation between total factor productivity, knowledge variables and unemployment benefits exist. In the next subsections we present the specification of the regression model, the methods used to estimate the productivity equation and the underlying dataset.

3.1. The model

To specify the empirical model, we start with the production function approach based on a Cobb-Douglas production function with labor and capital as inputs and a parameter that reflects the state of technology. Assuming Hicks-neutral technological change, the production function has the following form:

$$\mathrm{Y_{it}} = \mathrm{TFP_{it}} \mathrm{K_{it}^{\alpha}} \mathrm{L_{it}^{\beta}} \qquad (1)$$

where *Y* denotes total output, *TFP* stands for total factor productivity, *L* is labor input (number of hours worked), *K* is capital input (capital stock), α_t, β_t represents the shares of capital and labor incomes in the total income (capital and labor compensation) and *i, t* are indexes for units (cross-sections) and time.

Total factor productivity is defined as the Solow residual (Solow, 1957)

$$TFP_{it} = Y_{it} / L_{it}^{\alpha} K_{it}^{\beta} \qquad (2)$$

i.e. that part of total output which rest after accounting of labor and capital inputs (assumption of constant returns to labor and capital inputs). For more details consult Appendix A.

Based on the theoretical assumptions of endogenous growth theories, total factor productivity is endogenously determined and can be explained by knowledge, embodied in human capital and research and development, and other factors including institutions. Then, total factor productivity can be expressed as

$$\mathrm{TFP_{it}} = \mathrm{A_{it}} \mathrm{RD_{it}^{\gamma}} \mathrm{HC_{it}^{\delta}} \mathrm{I_{it}^{\theta}} \qquad (3)$$

where *RD* is stock of research and development, *HC* is stock of human capital, *I* represents institutional variables and *A* stands for other unmeasurable determinants. We assume that the unmeasurable part of total factor productivity is driven by country specific effects. As we are interested in the effect of specific labor market institution, the institutional variable *I* is replaced by unemployment benefits *UB*.

By log-linearization of the equation (3) and including unemployment benefits as institutional variable, we get the following econometric equation on which the empirical analysis of long-term relations will be based

$$\mathrm{tfp_{it}} = \alpha_{\mathrm{i}} + \mathrm{rd_{it}^{\gamma}} + \mathrm{hc_{it}^{\delta}} + \mathrm{ub_{it}^{\theta}} + \mu_{\mathrm{it}} \qquad (4)$$

where lowercase letters denote natural logarithm of research and development stock *rd*, human capital stock *hc* and unemployment benefits *ub*, α_i stands for country specific effects and μ_{it} is an iid error term.

3.2. Methods

To estimate the equations (4) we apply a method of panel cointegration regression. It has certain advantages. In a case of cointegrated series, we can distinguish between short-term dynamics and long-term relations between the cointegrated variables. Therefore, we could obscure the long-term relation between the variables by differencing the data that is a typical approach to solve the problem of nonstationarity (Greene, 2012).

The application of panel cointegration regression requires nonstationary time series and existence of their integrated linear combination. Note that a linear combination of two or more I(1) series may be stationary and in that case we talk about cointegrated series. Then, the linear combination defines a cointegrating equation and coefficients characterize the long-run relationship between the variables. The regression equation will be estimated by fully modified least squares (FMOLS) estimator to overcome the shortcomings of the standard ordinary least squares (OLS) estimator (the OLS estimates have an asymptotic distribution that is generally non-Gaussian and exhibit asymptotic bias and asymmetry leading to invalid conventional testing methods). Moreover, this estimator overcomes a problem of serial correlation and endogeneity in the regressors resulting from the presence of a cointegrating relation.

Given the requirements imposed by application of this method, at first panel unit root tests are provided for all variables. We apply the Levin, Lin, and Chu panel unit root test (Levin et al., 2002) that assumes a common unit root process. To increase the reliability of the results, additional three panel unit root tests are provided, namely: Im, Pesaran, and Shin (Im et al., 2003); Fisher-type tests via ADF and PP (Maddala and Wu, 1999; Choi, 2001). The results of provided tests are presented in Appendix B for all included variables.

After verification of nonstationary requirement, two type of Engle Granger based panel cointegration tests are performed: Pedroni (Pedroni, 1999; Pedroni, 2004) and Kao (Kao, 1999) cointegration tests. For both tests, the null hypothesis is that there is no cointegration. The Pedroni test proposes several tests statistics for a panel data model and allows for considerable heterogeneity. Under the null hypothesis there is a cointegration. The Kao test is based on a DF and ADF- type unit root test of residuals. The null hypothesis is that there is no cointegration. We compare the results to increase the reliability of tests.

Finally, standard residual diagnostic is provided including normality test and testing for the presence of unit roots in residuals. Notice that if the variables are cointegrated then the residuals should be stationary, i.e. I(0). Residual graphs, histograms of residuals with Jarque-Bera Statistics and correlograms of residuals with Q-Statistics tests for provided regressions can be found in Appendix C, Appendix D and Appendix E.

3.3. Data

The empirical analysis is conducted on an unbalanced panel dataset that includes observations on 28 member states of the European Union from 1995 to 2017. The choice of sample period is determined by two main reason. First, an availability of data from the first half of 1990s and their quality for this period is limited, especially in the case of new member states. Second, the early 1990s were marked by post-transitionary shocks in certain countries (with substantial deviations from equilibrium conditions in the economies).

The baseline regression has been repeated three times: 1) for all member states over the period 1995-2017 *(Full sample)*, 2) for all member states over the period 2004-2016 *(Reduced sample)* 3) for states with membership before 2004 *(Old member states)*, 4) for states with membership since 2004 *(New member states).* This approach allows us to estimate the long-run relationship between the variables for the whole analyzed period and compare the results to assess whether the estimates vary across old and new member states.

In total, the dataset includes total factor productivity as dependent variables and 3 explanatory variables, namely:

- Research and development stock
- Human capital stock
- Unemployment benefits.

Total factor productivity *(TFP_level)* is calculated as Solow residual in accordance with equation (2) from Subsection 3.1. More details on the calculation of the index are presented in Appendix A. Here we only present the sources of underlying data. The total output Y_t is proxied by nominal gross domestic product in euro from the Eurostat Database. The nominal GDP is converted to real GDP by implicit deflator (base year in 2010) from the Eurostat

Database. The data on gross fixed capital formation (current prices, euro) required for calculation of the capital stock K_t, are obtained from the Eurostat Database and represent a sum of gross fixed capital formation for AN_F6 asset types: dwellings, other buildings and structures, machinery and equipment + weapon systems (transport equipment, ICT equipment, other machinery and equipment and weapon systems), cultivated biological resources, intellectual property products. The data at current prices are converted to real ones by implicit deflator (2010 as base year) from the Eurostat Database. The labor input L_t is proxied by total annual hours worked from The Conference Board Total Economy Database (TED, 2018). The rate of labor income in the total income b_t is proxied by the ratio of compensation of employees plus mixed income to total income. The data on compensation of employees, mixed income and GDP is obtained from the Eurostat Database.

The stock of research and development *(RD_stock)* is calculated analogously to capital stock in the calculation of total factor productivity, based on the next equation

$$\mathrm{RD\_stock_t} = \mathrm{RDexp_t} + (1-\delta)\,\mathrm{RD\_stock_{t-1}} \qquad (5)$$

where *RDexp* refers to nominal research and development expenditure (data from the Eurostat Database), δ is a depreciation rate and t is a time index. The initial stock of research and development is calculated, as previously in total factor productivity calculation, based on the following equation:

$$\mathrm{RD\_stock_0} = \frac{\mathrm{RDexp_0}}{g_A + \delta} \qquad (6)$$

where $RDexp_0$ is total research and development expenditure in 1995, g_A stands for an average growth rate of R&D expenditure through the whole period and δ is a depreciation rate equal to 0,15.

Human capital stock *(HC_index)* is proxied by average year of schooling and an assumed rate of return to education. The index refers to human capital index from Pen World Table 9.0.

Unemployment benefits are represented by full unemployment benefits per unemployed person in PPS *(UB_U)*. The data on full unemployment benefits were obtained from the Eurostat Database. To calculate the indicator *UB_U*, the yearly data on full unemployment benefits were downloaded in PPS and divided by number of unemployed at the same year. Data on the number of unemployed persons were obtained also from the Eurostat Database.

The choice of variable is conditioned by underlying methodology. The main descriptive statistics of all variables are summarized in Table 2.

Table 2. Dataset for cointegration panel regression – descriptive statistics

Variable	Descriptive Statistics				
	Mean	Median	Max	Min	Std. Dev.
TFP_level	0,3376	0,2807	4,1454	0,0298	0,3209
HC_index	3,1154	3,1130	3,7938	2,0741	0,3210
RD_stock	44428	7559,5	465678	43,296	81545
MW_EUR	453,75	282,38	1998,6	0,0000	493,11
UB_U	5243,6	3086,43	26246	113,24	4930,7

Source: Own construction based on descriptive statistics from EViews 10.

4. Empirical Results

The empirical results of panel cointegration regression based on equation (4) are reported in Table 3. The estimations were conducted on sample that includes 28 cross sections representing the member states of the EU. Observations for 1995 were dropped out from the sample. Regarding the results of Pedroni cointegration test, there is a strong evidence of long-run relationship between the variables. The statistics of Pedroni cointegration tests are reported also in Table 3. Based on four out of seven test statistics we can reject the null hypothesis of no cointegration. The only exception is a subsample of old member states, where the null hypothesis was rejected in three cases. But also, for this subsample, the Kao cointegration test has approved the existence of cointegration relationship as the null of no cointegration has been rejected at α=0,05.

The regression results for the full sample confirm the theoretical predictions about the importance of knowledge in determining productivity and our suggestions about the role of unemployment benefits. The positive and statistically significant estimates for human capital and research and development suggest a long-term productivity enhancing

effect of stock of knowledge in all member states. On the contrary, the negative estimates for unemployment benefits indicates significant long-term negative impact on total factor productivity. More precisely, a 1% increase in full unemployment benefits per unemployed have led to a decrease of total factor productivity by 0,14% in 28 member states of the European Union over the period 1996-2017.

Regarding the reduced sample, the results confirm our previous findings also for the period 2004-2016. Moreover, their support our previous research findings on the role of unemployment benefits in the European union (Chovancová, 2020). While the stock of knowledge has been estimated as productivity enhancing (with statistically significant effect only in the case of *RD_stock*), the impact of unemployment benefits on total factor productivity has been estimates as negative (at α=0,01). Comparing the size effects of estimates, the impact of research and development stock is estimated as a little bit lower, while the negative effect of unemployment benefits is estimated as higher by almost 0,11 percentage points. Given the results for human capital, we repeated the estimation by an alternative variable *HC_school* (average years of schooling) that can be used as proxy for human capital stock. The estimation results have not indicated statistically significant effect neither for *HC_index*, nor for *HC_school*. But it is important to mention that the estimation results have been robust to inclusion of an alternative variable with statistically significant coefficients (at α=0,01) for research and development (0,347) and unemployment benefits (-0,262).

Table 3. Results of panel cointegration regressions based on (4) and cointegration tests

Dependent variable: *ln_TFP*				
	Full sample	Reduced sample	Old member states	New member states
ln_RD_stock	0,341***	0,307***	0,758***	0,222***
	(0,054)	(0,069)	(0,1000)	(0,772)
ln_HC_index	0,784*	0,615	-2,731***	2,409***
	(0,431)	(0,647)	(0,648)	(0,772)
ln_UB_U	-0,144***	-0,252***	0,026	-0,196***
	(0,035)	(0,041)	(0,043)	(0,052)
Observations	540	357	319	221
Cross-sections	28	28	15	13
Periods included	22	13	22	22
Adjusted R2	0,88	0,90	0,88	0,85
	Pedroni (Engle Granger based) cointegration tests			
Panel v-Statistic	-0,375	-0,775	-0,710	0,0295
Panel rho-Statistic	0,991	2,438	1,183	0,212
Panel PP-Statistic	-2,241***	-4,189***	-0,626	-2,477***
Panel ADF-Statistic	-2,899***	-3,822***	-1,727**	-2,512***
Group rho-Statistic	2,928	4,854	2,638	1,463
Group PP-Statistic	-8,181***	-11,75***	-2,072**	-9,780***
Group ADF-Statistic	-5,210***	-8,239***	-3,412***	-3,982***

*Note: ***, **, * denotes parameters significant at 1%, 5% and 10%; standard errors in brackets. Cointegration regression estimated via FMOLS, with deterministic constant and allowing for heterogenous variances (sandwich method). Observation for 1995 were dropped out from all regressions.*
Source: Own estimation via EViews 10. ¨

Considering the results for the subsamples of old and new member states (the fourth and fifth columns in Table 3), the previous findings about a) a significant positive long-term relationship between the stock of knowledge and total factor productivity, and b) negative long-term relationship between unemployment benefits and total factor productivity have been approved only in the case of new member states. Based on reported coefficients, we can conclude that an enrichment of human capital stock with aim to increase total factor productivity is even more important for new member states. At the same time, the negative impact of unemployment benefits per unemployed

is higher (by 0,052 percentage point) than in the sample of all member states. The size effect of coefficient for research and development has been estimated as a little bit lower than in the full sample.

In the case of old member states, one of the control variables *(HC_index)* had indicated a significant long-term negative impact of human capital stock on TFP. Therefore, we re-estimated the regression equation by inclusion of the alternative indicator for human capital stock *(HC_school).* The results still indicated negative impact but insignificant at any reasonable significance level. For that reason, we have provided a regression for shorter time period 2004-2016 (with aim to compare the results with our previous findings for TFP growth over same period). The estimation results for both alternative indicators are reported in Table 4. In both regressions, *RD_stock* indicates significant positive long-term impact on total factor productivity, while the estimates of *UB_U* suggest significant long-term productivity impeding impact (in line with our previous findings and theoretical expectations). The results for human capital stock are contradictory, therefore we cannot draw a straightforward conclusion about its impact on TFP in the subsample of old member states even for the reduced period.

Table 4. Estimation results based on (4) – old member states, 2004-2016

Dependet variable: ln_TFP		
ln_RD_stock	0,646***	0,450**
	(0,152)	(0,169)
ln_HC_index	-2,023**	-
	(0,929)	
ln_HC_school	-	0,689
		(0,656)
ln_UB_U	-0,155***	-0,131**
	(0,056)	(0,055)
Observations	195	195
Cross-sections	15	15
Periods included	13	13
Adjusted R2	0,86	0,87

*Note: ***, **, * denotes parameters significant at 1%, 5% and 10%; standard errors in brackets. Cointegration regression estimated via FMOLS, with deterministic constant and allowing for heterogenous variances (sandwich method).*
Source: Own estimation via EViews 10.

5. Conclusion

Unemployment benefits are introduced with aim to protect workers who have lost their jobs by providing replacement income to them. At the same time, as other labor market institutions, they alter the decision of economic agents having in turn decisive impact on macroeconomic outcomes, including total factor productivity. The theory suggests different ways how this labor market institution may positively as well as negatively influence total factor productivity and thus the overall economic performance. Based on the review of theoretical works we have identified the following channels as the more important ones: 1) workers´ moral and motivation, 2) skills of the labor force, and 3) job matches and labor reallocation.

The aim of this paper was to determine the long-term effect of unemployment benefits on total factor productivity in the member states of the European Union. Given the inconclusive findings of contemporaneous literature, an empirical analysis has been inevitable for better understanding the long-term relations between unemployment benefits and aggregate productivity in the member states before an implementation of any institutional reforms. The current institutional arrangements in the EU member states are really heterogenous. It can be caused also by the fact that The European Union only complements national policy initiatives (determination of the country´s responsibility for unemployment benefit payments). However, in recent years a rising interest to strengthen the role of the EU in providing policy measures in the field of unemployment benefits can be identified in the EC´s agenda.

The empirical analysis was conducted with regard on the research goal by means of cointegration panel regression. The main theoretical assumptions behind the empirical analysis can be summarized as follows. First, an endogenous determination of the total factor productivity as a product of knowledge accumulation and residual set of factors, including institutions. Second, the existence of long-term relations between total factor productivity and its

determinants. Third, standard Cobb-Douglas productivity function with two inputs and Hicks-neutral technological change. The empirical analysis was conducted on an unbalanced panel data set that cover observations for 28 member states of the European Union through the period of 1995-2017.

The main findings can be summarized in 3 points. First, we have provided an evidence of the presence of long-term relations between unemployment benefits and total factor productivity index in the European union. Second, the regression results have indicated a statistically significant negative impact of unemployment benefit payments on the development of total factor productivity over the analyzed period, while this impact is more detrimental in the sample of new member states. Third, we have found out a statistically significant positive impact of research and development stock and human capital stock on the total factor productivity.

Our findings about the significant role of human capital and R&D in explaining total factor productivity growth have approved the theoretical consensus on the productivity enhancing impact of knowledge accumulation. As long as these indicators can be considered as good proxies for knowledge accumulation embodied in human capital and research and development, policy measures of national authorities and the EU institutions would be oriented to improve the quantity and quality of human capital and to invest more in research and development activities in the member states. At the same time, policy actions that make the unemployment systems more generous impede the long-term development of total factor productivity. Therefore, attempts to ensure protection for workers through higher unemployment benefit payments must be realized with cautious and with regard to the productivity impeding effect of this labor market institution.

However, our findings have their limits and must be interpreted with caution given several methodological and data obstacles. Firstly, given the nature of panel data estimation method, the findings are valid only in average for the group of analyzed member states. The impact of selected variables and consequent policy recommendations would vary given the national contexts. For country-specific results separated regressions are required. Second, any policy measure requires evaluation of its impact on other economic and social indicators. Therefore, further empirical analysis is required to assess the impact of unemployment benefits on employment, unemployment, economic growth, etc. Finally, our empirical model was derived based on endogenous growth theories emphasizing the role of knowledge accumulation and extended by an institutional variable. Given our research question, we have analyzed the impact of unemployment benefits from other potential institutional variables (property rights, product market regulations or ease of doing business are commonly proposed by current empirical literature). The empirical model would be re-estimated by controlling for other institutional variables leading to more general results.

Acknowledgements

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Appendix A. The Solow residual and its estimation

Total factor productivity has been defined as Solow residual (Solow, 1957) and it can be calculated according to equation (2). Before the application of this, measurement of appropriate variables and considering their comparability across countries and over time is required.

Labor input L is measured by total hours worked. Capital stock K is calculated by Perpetual Inventory Method (PIM) according to the following equation

$$K_t = I_t + (1 - \delta)K_{t-1} \qquad (I)$$

where I_t denotes a gross investment at current prices in time t and δ_i is a geometric rate of depreciation. According to this equation, the actual capital stock is given by capital stock in the previous year allowing its depreciation and the annual flow of investment (proxied by gross capital formation). The application of the PIM method allows us to calculate the capital stock for all cross-sections recursively back in time (up to the beginning of the analyzed period). Assuming geometric depreciation of the capital and constant depreciation rates, the equation (I) can be rewritten in the following way

$$K_{i,t} = \sum_{l=0}^{n-1}(1 - \delta)^l I_{i,t-1} + (1 - \delta)^n K_{i,t-n} \qquad (II)$$

where n denotes a fixed moment in time for which we express the initial level of capital stock and l represents a length of time between the actual and initial year a i is an index for cross sections (countries).

The calculation requires certain assumptions about the patterns of depreciation and the initial level of capital stock. We apply an average of geometric depreciation rates that are common across countries and constant over time but unique for industries, defined for 6 asset types based on official BEA depreciation rates of Fraumeni (1997). The initial level of capital stock is calculated as a ratio of gross capital formation in the initial years (1995) and the sum of

the average growth rate of investment through the whole analyzed period and the average of geometric depreciation rates. Then, the initial capita stock is given by the following equation:

$$K_0 = \frac{I_0}{g_A + \delta} \qquad (III)$$

where I_0 is gross capital formation in 1995, g_A stands for an average growth rate of investment through the whole period and δ is an average of geometric depreciation rates.

The calculation of TFP index requires also estimates of partial elasticity of output to labor and capital. Under the assumption of perfect competition, partial elasticities are proxied by labor and capital compensation.

The rate of labor income β in total income is derived as a ratio of compensation of employees plus mixed income to total income according to the equation

$$\beta_t = \frac{CE_t + MI_t}{Y_t} \qquad (IV)$$

As there are no data available separately on labor income of self-employed, mixed income is used as a proxy for this variable. Notice that mixed income in national accounts represents self-employed income of both labor and capital. Due to the unavailability of data, we follow an assumption commonly used in empirical studies that the income received by self-employed persons is largely accrued by labor. Alternatively, we would use only data on compensation of employees, but this computation should lead to underestimation of labor compensation as the share of labor income is attributed to capital.

The rates of labor income and capital income give together one. Then, capital compensation α is calculated as 1 minus labor compensation.

Appendix B. Unit root tests of variables included in cointegration regressions

TFP_level	Statistics	Probability
Levin, Lin & Chu	-0,802	0,211
Im, Pesaran and Shin W-stat	-0,919	0,179
ADF – Fisher Chi-square	80,45	0,018
PP – Fisher Chi-square	57,72	0,412

Note: lag lenght selection based on SIC, Newey-West bandwidth selection and Barlett kernel
Source: Own construction based on estimations via EViews10

HC_index	Statistics	Probability
Levin, Lin & Chu	2,079	0,981
Im, Pesaran and Shin W-stat	5,257	1,000
ADF – Fisher Chi-square	66,27	0,164
PP – Fisher Chi-square	140,3	0,000

Note: lag lenght selection based on SIC, Newey-West bandwidth selection and Barlett kernel
Source: Own construction based on estimations via EViews10

RD_stock	Statistics	Probability
Levin, Lin & Chu	1,469	0,929
Im, Pesaran and Shin W-stat	8,277	1,000
ADF – Fisher Chi-square	14,17	1,000
PP – Fisher Chi-square	8,601	1,000

Note: lag lenght selection based on SIC, Newey-West bandwidth selection and Barlett kernel
Source: Own construction based on estimations via EViews10

UB_U	Statistics	Probability
Levin, Lin & Chu	-0,032	0,487
Im, Pesaran and Shin W-stat	1,014	0,845

ADF – Fisher Chi-square	57,546	0,418
PP – Fisher Chi-square	34,631	0,989

Note: lag lenght selection based on SIC, Newey-West bandwidth selection and Barlett kernel
Source: Own construction based on estimations via EViews10

Appendix C. Residual diagnostics for the cointegration regression, full and reduced sample

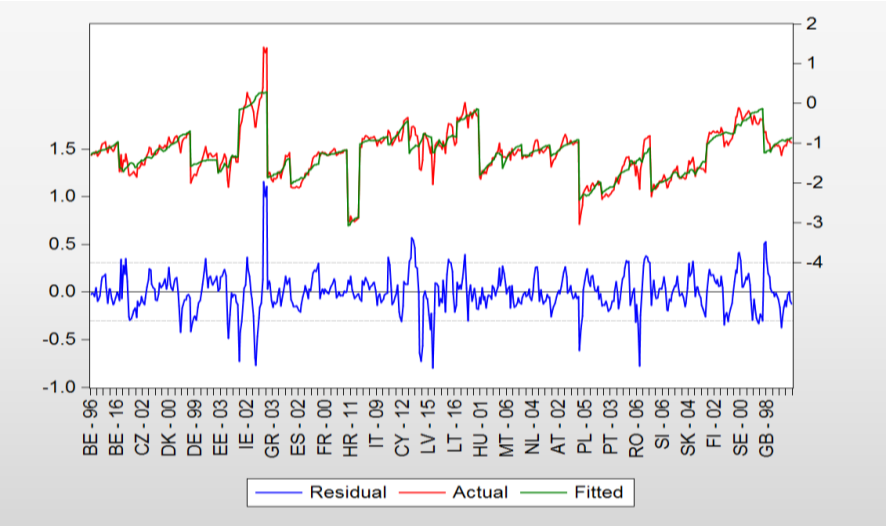


Fig. C1. Plot of residuals, actual and fitted values – full sample

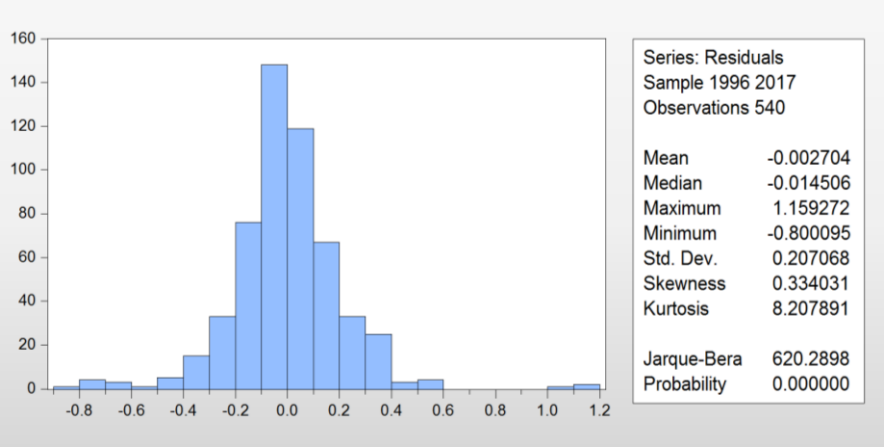


Fig. C2. Histogram of residuals – full sample

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob*
		1	0.691	0.691	259.58	0.000
		2	0.392	-0.164	343.35	0.000
		3	0.147	-0.110	355.08	0.000
		4	0.005	-0.010	355.09	0.000
		5	-0.109	-0.110	361.62	0.000
		6	-0.188	-0.081	381.07	0.000
		7	-0.193	0.017	401.55	0.000
		8	-0.204	-0.104	424.52	0.000
		9	-0.176	-0.000	441.52	0.000
		10	-0.134	-0.009	451.45	0.000
		11	-0.100	-0.054	457.02	0.000
		12	-0.065	-0.004	459.39	0.000

Fig. C3. Correlogram of residuals – full sample

Fig. C4. Plot of residuals, actual and fitted values – reduced sample

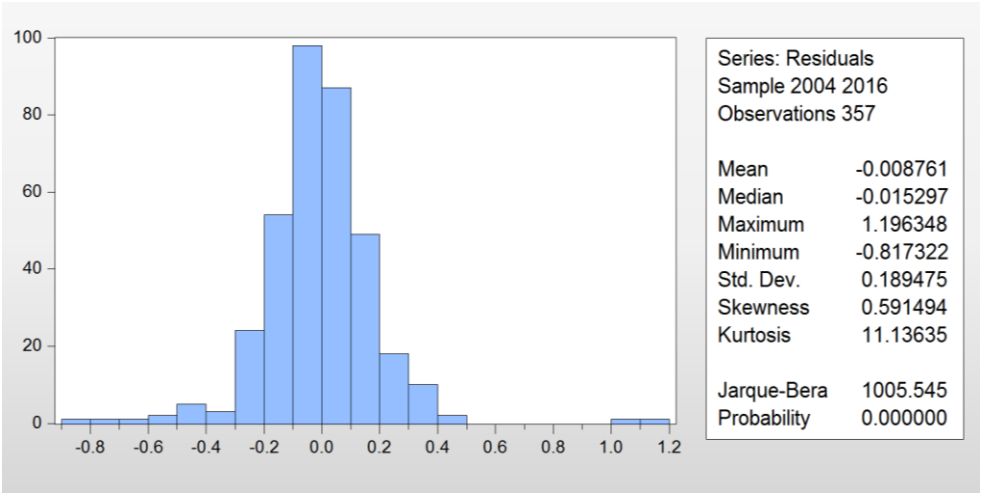
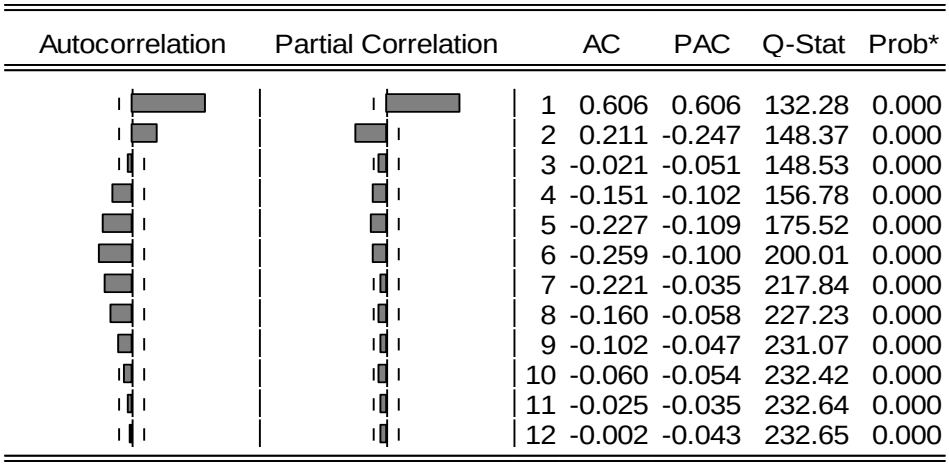


Fig. C5. Histogram of residuals – reduced sample



		AC	PAC	Q-Stat	Prob*
1		0.606	0.606	132.28	0.000
2		0.211	-0.247	148.37	0.000
3		-0.021	-0.051	148.53	0.000
4		-0.151	-0.102	156.78	0.000
5		-0.227	-0.109	175.52	0.000
6		-0.259	-0.100	200.01	0.000
7		-0.221	-0.035	217.84	0.000
8		-0.160	-0.058	227.23	0.000
9		-0.102	-0.047	231.07	0.000
10		-0.060	-0.054	232.42	0.000
11		-0.025	-0.035	232.64	0.000
12		-0.002	-0.043	232.65	0.000

Fig. C6. Correlogram of residuals – reduced sample

Appendix D. Residual diagnostics for the cointegration regression, - old member states, 2004-2016

Fig. D1. Plot of residuals, actual and fitted values – estimation with *hc_index*

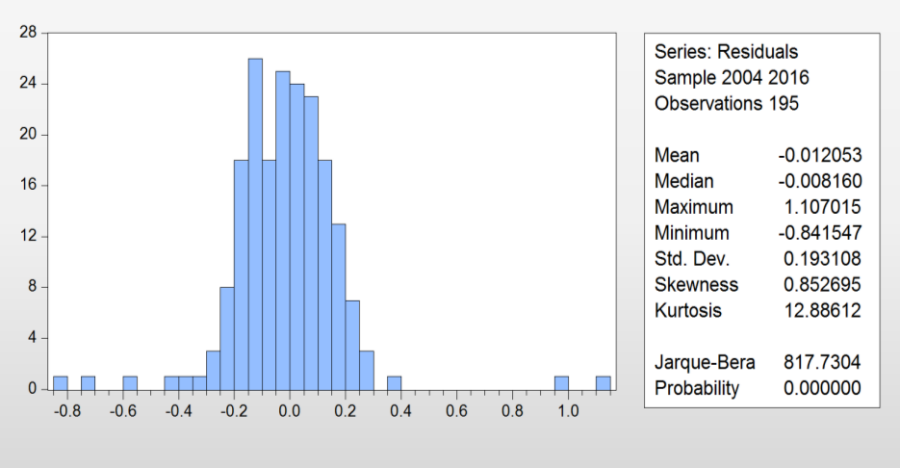
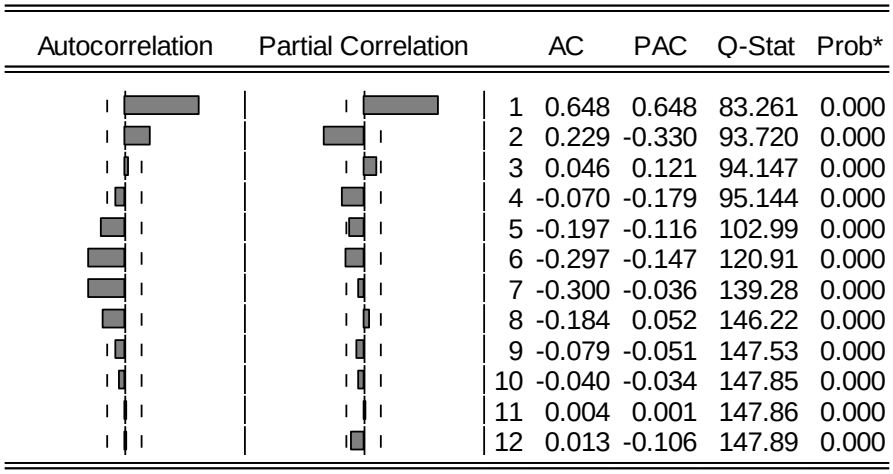


Fig. D2. Histogram of residuals – estimation with *hc_index*



Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob*
		1	0.648	0.648	83.261	0.000
		2	0.229	-0.330	93.720	0.000
		3	0.046	0.121	94.147	0.000
		4	-0.070	-0.179	95.144	0.000
		5	-0.197	-0.116	102.99	0.000
		6	-0.297	-0.147	120.91	0.000
		7	-0.300	-0.036	139.28	0.000
		8	-0.184	0.052	146.22	0.000
		9	-0.079	-0.051	147.53	0.000
		10	-0.040	-0.034	147.85	0.000
		11	0.004	0.001	147.86	0.000
		12	0.013	-0.106	147.89	0.000

Fig. D3. Correlogram of residuals – estimation with *hc_index*

Fig. D4. Plot of residuals, actual and fitted values – estimation with *hc_school*

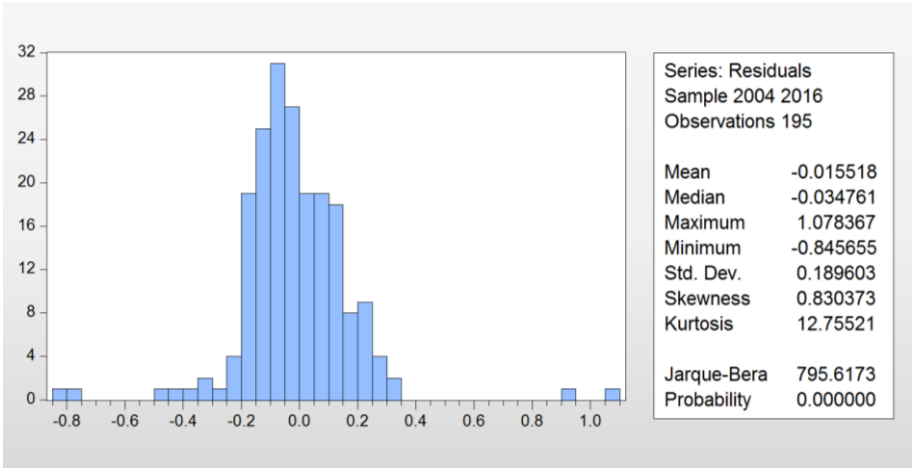


Fig. D5. Histogram of residuals – estimation with *hc_school*

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob*
		1	0.654	0.654	84.745	0.000
		2	0.245	-0.319	96.729	0.000
		3	0.073	0.137	97.799	0.000
		4	-0.049	-0.194	98.288	0.000
		5	-0.188	-0.110	105.40	0.000
		6	-0.291	-0.143	122.62	0.000
		7	-0.316	-0.073	142.99	0.000
		8	-0.236	0.026	154.40	0.000
		9	-0.134	-0.033	158.10	0.000
		10	-0.076	-0.039	159.29	0.000
		11	-0.013	0.013	159.32	0.000
		12	0.007	-0.118	159.33	0.000

Fig. D6. Correlogram of residuals – estimation with *hc_school*

Appendix E. Residual diagnostics for the cointegration regression, - new member states

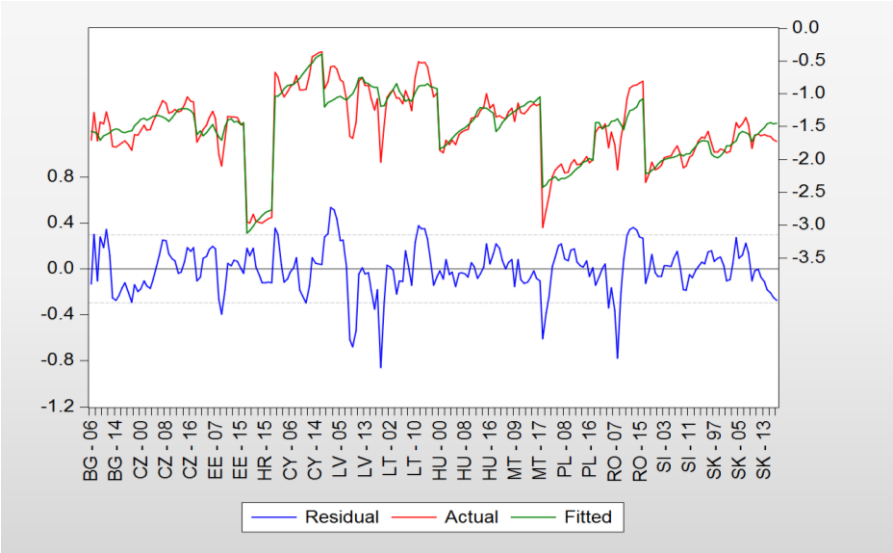


Fig. E1. Plot of residuals, actual and fitted values – sample of new member states

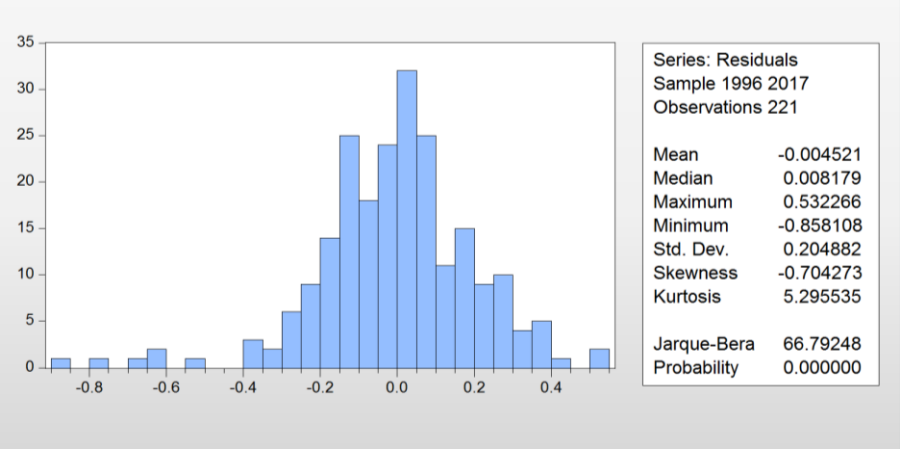


Fig. E2. Histogram of residuals – sample of new member states

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob*
		1	0.622	0.622	86.731	0.000
		2	0.303	-0.137	107.45	0.000
		3	0.061	-0.113	108.30	0.000
		4	-0.070	-0.041	109.40	0.000
		5	-0.141	-0.065	113.93	0.000
		6	-0.161	-0.042	119.90	0.000
		7	-0.114	0.029	122.91	0.000
		8	-0.148	-0.153	127.97	0.000
		9	-0.135	-0.002	132.19	0.000
		10	-0.121	-0.039	135.60	0.000
		11	-0.111	-0.061	138.48	0.000
		12	-0.107	-0.049	141.18	0.000

Fig. E3. Correlogram of residuals – sample of new member states

Legislation Changes of the Tax Base´s Calculation on the Czech Insurance Market

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Abstract

The second half of the 2019 Czech insurance market and Czech political scene were affected by topic which can be shortly called as a taxation of insurance technical provisions. The amendment to the Act of the Czech National Council on provisions for determining the Income Tax Base, which, although argues European legislation, is unparalleled in Europe, was a main reason of the stormy discussion, to be finally approved without any changes. The aim of this article is to recapitulate main information and arguments of the discussion related to the amendment to the law regarding taxation of the insurance technical provision and then analyze the Czech insurance market to provide arguments if Czech insurance market faces a threaten the stability of the insurance sector, or not.

Keywords: Government Policy and Regulation (G18), Insurance (G22), Tax Law (K34)

1. INTRODUCTION

End of the 2019 Czech insurance market and Czech political scene were affected by topic the topic, which at first glance may seem simple but it is not. The topic is simply called a taxation of the insurance provision. On the one hand, there are opinions that it is a logical step, that the collected amount will contribute to a balances state budget, and be honest, these opinions come more often from politicians and non-professionals, especially from leading representatives of the Ministry of Finance. On the other hand, there are ideas which are presented by insurance market participants as well as by experts and specialists in various areas as economy, legislation, who try to explain basic principles of insurance to minimalize risks and impacts and shed light on the illogicality and threat of this step. Because of the actuality of the topic which suddenly became from we can say nothing there is a minimum professional articles and literature, this lack is solved using a legislation as a base and using trusted source and doing information cross-checks. On the other hand, the impacts and consequences are too strong, it is one of the big changes on the Czech insurance market, therefore it is important to know facts. The aim of this paper is the recapitulation of main information and arguments related to the draft amendment to the law regarding taxation of the insurance technical provisions and quantify the impact on the Czech insurance market. The first chapter is an introduction, in the second chapter we introduce the wording of the amendment of the law and the main point of contention, the third chapter provides information and arguments of both sides. The fourth part devoted to controversial and legally challengeable parts and in the fifth part will be presented the quantitative analysis of the impact based on 2018 data, on which the tax burden of individual insurers is calculated because of the law´s retroactivity, the last chapter is the conclusion and final discussion.

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2. AMENDMENT TO THE LAW

In this chapter we introduce the wording of the amendment of the law[2] which was downloaded from the official web site of the Chamber of Deputies Parliament of the Czech Republic and translated by author, because of no official English version.

„§ 6

Insurance Technical Provisions

(1) Provisions in the insurance for the purposes of the income taxes are technical provisions created in accordance with the Act governing the insurance industry.

(2) In the case of taxpayer established in the area of other Member State of the European Union or State forming the European Economic Area than the Czech Republic, who carries out insurance or reinsurance activities in the Czech republic, provisions in the insurance for the purposes of the income taxes mean technical provisions created to settle liabilities from these activities and created in accordance with the legislation of the State of its registered office, which regulates insurance and reinsurance activities in accordance with the regulation of the European Union[27)].

(3) In the case of taxpayer establisher in the area which is not a Member State of the European Union neither State forming the European Economic Area and with which the Czech Republic has concluded an international agreement regulating the creation and amount of technical provisions in insurance and reinsurance activities, which are carried out, conducting insurance or reinsurance activities in the Czech Republic, insurance provisions for income tax purposes are meant technical provision to settle liabilities from these activities and created in accordance with this international Treaty

(4) Adjusted provisions in the insurance for income tax purposes are meant insurance technical provisions

a) reduced by amounts of recoverable from reinsurance contracts in accordance with directly applicable European Union law[28)] and
b) increased by the balance of deferred acquisition costs for insurance contracts in accordance with the legal regulation governing accounting.

(5) The increase in technical provisions means a positive difference between the amount of adjusted provisions in the insurance at the end of the tax period and the amount of adjusted provision in the insurance at the beginning of the tax period.

(6) The decrease in technical provisions means a negative difference between the amount of adjusted provisions in the insurance at the end of the tax period and the amount of adjusted provision in the insurance at the beginning of the tax period.

(7) For the purposes of determining the increase in technical provisions and the decrease in technical provisions, the period for which the tax return is filed is also considered to be a tax period.

(8) Provisions insurance for the purposes of income tax are not technical provisions to settle liabilities from insurance or reinsurance activities carries out in a State with which the Czech Republic has concluded of an international agreement regulating the avoidance of double taxation of all types of income and according to which the doble taxation is excluded by the exemption method.

[27)] Directive of the European Parliament and of the Council 2009/138/EC of 25 November 2009 about the approach to insurance and reinsurance business (Solvency II), as amended.

[28)] Commission Delegated Regulation (EU) 2015/35 of 10 October 2014 supplementing Directive of the European Parliament and of the Council 2009/138/ about the approach to insurance and reinsurance business (Solvency II), as amended

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[2] Amendment to the Act 593/1992 Sb. of the Czech National Council on Provisions for Determining the Income Tax Base

Art. VI

Transitional provision

For tax obligations for provisions for the tax period commenced before the date of entry into force of this Act as well as rights and obligations related to them, Act No. 583/1992 Coll. as amended before the date of entry into force of this Act, shall apply.

The main information which comes from the submitted amendment is, that difference between the amount of accounting insurance technical provisions, which are created in accordance with accounting legislation (Accounting Act), and insurance technical provision calculated in accordance with European Directive (Solvency II) will be part of tax base. It is a consequence of point 4 above mentioned amendment. Till this discussion (second half of the 2019) accounting insurance technical provisions were excluded from tax base (no tax liability). The amendment of the Act waives the tax liability up to the amount of insurance technical provisions calculated according to Solvency II principles. Because the amount of SII technical provisions is currently (as well as form long term point of view) lower than the amount of accounting technical provisions, logically their difference "falls" into tax base. Big issue of this idea is the point, that two incomparable variables are compared.

Solvency rules has been set to determine minimum and optimal safe amount of capital that an insurance company needs for its business. It is an amount that will, with a certain degree of probability, ensure that the insurance company will not fall into insolvency. Therefore, mentioned approach does not relate directly with other accounting items, is it conceptually different and is inconsistent with general accounting principles (e.g. deducting future expected returns from the value of liabilities is inconsistent with the precautionary principle applied in accounting)[3]. To determine the amount of accounting technical provision and solvency technical provisions different actuarial approaches are used with regard the legally given purpose of mentioned provisions. Except this one, more contradictions can be found, for example Pillar two is not considered as well as other qualitative requirements as internal control system or prudential policy supported by Czech National Bank.

According to above mentioned amendment, insurance technical provisions are also adjusted for reinsurance and subsequently the balance of deferred acquisition costs for insurance contracts are added according to the legal accounting regulations. The impact of described adjustment is small therefore they are not subject to further analysis.

3. PERSPECTRIVES OF PARTICIPANTS

In this chapter we provide individual opinions and arguments of both sides, not only from Ministry of Finance perspective and experts, but at the end of the chapter we will point out procedural paradoxes.

3.1. Ministry of Finance

As a main argument for submitting the amendment Ministry of Finance presented a harmonization of conditions for all economic entities and get one-shot contribution into the state budget in the amount of 10.5 billion Czech crowns. According its statements, this is not an introduction of the sector tax, it is only harmonization of conditions. Calculation of insurance technical provisions according to the European standards Solvency II is more objective according to representatives of the Ministry of Finance and moreover it prevents against tax optimization of insurance companies. Thus, until now, it was possible to "inflate" the provisions and thus reduce the tax base.

„The provisions created in this way corresponds better to the amount needed to settled liabilities form all insurance and reinsurance activities. This system largely eliminates possibilities of tax optimization through provisions, especially – and that makes sense -deferring taxation." (Alena Schillerová, Minister of Finance)[4]

As a very important and interesting we consider the fact, that by this step the Ministry of Finance puts the tax base calculation into the hands of a European Directive, which is not designed for that, and renounces the possibility of influencing the rules for tax base calculation for the future.

[3] www.mesec.cz

[4] www.opojisteni.cz

Ministry of Finance in this topic sees the insurance as a one compatible sector and does not take into account differences between life and non-life insurance companies and their potential dividing in spite of the obvious different impacts. This approach brings great problems especially for clients of life insurance companies. Ministry of Finance is not open for any alternative approaches.

From Miroslav Singer´s point of view, ex-governor of the Czech National Bank and current chairman of the Supervisory Board and Chief economist of Generali insurance company it is not historically an initial proposal. Similar proposals were also submitted under previous governments, but it has always been explained by logical arguments, that it is not a systematic and correct step, and previous government withdrew the proposals. The only thing that changes over time is the aggressiveness of submitted proposals.[5]

3.2. Experts

The topic of technical provision taxation is so interesting for many experts, not only main representatives of insurance companies, that could be expected, but also for macroeconomists, lawyers etc. and can be said, that in all respects these opinions are very strongly critical. Below are described main factual arguments why submitted amendment is considered as unfinished or erroneous.

Provision in insurance market are created for events of accident, to meet its obligation to the clients. The system of provision is defined in the Act of Insurance and of course insurance company created technical provisions according the Act. As mentioned above, solvency technical provisions and accounting technical provisions are created for different purposes and calculated by different – legally given – actuarial methods.to move on, let´s accept this paradox as a fact.

Insurance companies create technical provisions for prudential reasons, as already mentioned, for the payment of future liabilities in accidental situation. The amount of technical provisions depends on, inter alia, on risk appetite of individual insurance company. Higher provisions are created by companies with lower risk appetite and vice versa. Also depends on type of business which consists portfolio and based on actuarial calculations, probabilities of possible events, changes in economic development, business fluctuations, etc. insurance company can decide to increase the technical provisions. However, as confirmed Miroslav Singer[6] and macroeconomists Vladimír Bezděk, former CEO of ČSOB insurance company, there is no interest of insurance market to "inflate" insurance technical provisions. Money keep in the provisions do not generate a net profit, and they are a subject of rules how they can be handled[7]. Because provisions are not net profit, there is no dividend payments and these funds remain in the Czech insurance companies, waiting to be used for the Czech market, mother companies cannot draw on them or use them, therefore it is not possible, as stated in arguments of the Ministry of Finance, for tax optimization.

In numbers the amendment of the low means that insurance companies pay up to annual profit with one-time taxation[8]. According to Miroslav Singer and statistics of Czech Insurance Association, net profit 2018 was approximately CZK 12 billion, that means that almost entire gain will be written off. Moreover, 2018 is considered as a "good year", meaning no large expenditures of entire sector were found out, like floods etc. In the worse years, the profit is around CZK 2-3 billion, thus the amendment to the law moves the insurance market at a loss.

Unfortunately, the burden for individual insurance companies can be loss-making also in "good years" especially for smaller entities and newly established companies, that operate with small profit but the "tax surcharge" can reach several times their profit. Thus, in coming years will operate with the loss and the question is, if they are able to manage it and survive.

Another huge criticism not only from experts but also from some part of politicians, and even from the leadership of the House Budget Committee, which is a part of the law´s approval process, is connected with the impacts on life insurance companies and their clients. Unfortunately, in this case we face the taxation of already accumulated funds in case of pension, death, loss of employment etc. In additional, live technical provision calculation includes more risk variables like inflation, interest rate, guaranteed technical rate, than into non-life calculation, so the result is variable for the future. Also, there is an important fact, that life insurance technical provisions are calculated for several decades, the amendment of the law changes conditions based which the provisions were calculated – for decades - and funds for clients will be lacking. On the one hand, insurance companies cannot afford not to pay the funds to clients, on the other hand, they will have to get them somewhere. Impacts form life insurance perspective so

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[5] www.euro.cz

[6] www.cap.cz

[7] E.g. amount of investments in non-life insurance

[8] Statistics are available on www.cap.cz

fatally that the representatives of all insurance companies suggested that life insurance can be excluded from the tax package[9].

One of the other threats is perceived by the weakening of the financial stability of the sector. Firstly, as mentioned according to Miroslav Singer, it is not an appropriate trend to tax funds which remain in the domestic market and improve capital adequacy of the sector[10]. In comparison with other European countries, the Czech Republic keeps higher level of capital adequacy in terms of solvency capital requirement[11], this trend has been supporting by Czech National Bank and legislation till now. With this change insurance companies may lose their negotiating position and their capital adequacy decrease, because mother companies will appeal to outflow the capital to headquarters. With the capital outflow other issues are connected, like investment reduction (e.g. in government bonds), the sale of assets under unfavorable conditions due to the need of sufficient liquidity.

Moreover, in the past when crisis occurred (e.g. floods)[12] the financial stability and capital adequacy of the insurance sector proved to be one of the key factors. Insurance companies met all their obligations and proved that prudential policy is in place. However, in case of low market stability and lack of capital, unfulfilled obligations must be met by state[13].

The most fundamental and most recurring problems and consequences were described in this chapter, but it fair to mention that more potential problems and impacts are connected with the amendment of the law and not only insurance market, but the Czech Republic will be face them.

3.3. National Development Fund as an alternative

Following the example of banking sector, Czech Insurance Association came with a proposal to invest part of technical provision to National Development Fund. Insurance sector by this step wants to fulfil government conditions and to invest into economic development of the Czech Republic, however in a way that will not to be in a conflict with the principles of insurance. Long term investments would go for example to the infrastructure development, school projects or social services[14]. The Ministry of Finance rejected this option.

4. CONTROVERSIAL PARTS

In this chapter we focus on controversial parts of the whole topic and legislative process. From legal point of view, we work with statements of Martin Kopa, as assistant to the Supreme Legal Court, an assistant to the Constitutional Court and at the same time a casual lawyer at the European Court of Human Rights in Strasbourg. We also use statements of experts and representatives of insurance fields and other areas. Web articles and an online discussion at the Czech Insurance Association called "Round Table of Economists and Lawyers" were used. We will stick only to the factual data and possible political or purposeful actions leave the reader´s judgment.

From legal perspective there are two disputed facts. Firstly, retroactivity, which means the retroactive effect of the norm and secondly, in legal terminology, the so-called "strangling the effect".

The retroactivity hidden in the transitional provision factually means to confiscate funds for future payments of clients, especially for life insurance companies. Long term policies in the event of death, survival, loss of employment, are calculated based on certain assumption. In the moment of retroactivity´s application the assumption for calculation are changed without any possibility of recalculation or securing sufficient funds. From Martin Kopa´s point of view, the retroactivity is the fundamental problem of whole topic.

The "strangling the effect" in tax matters means[15], that the state impose a tax in an amount which has liquidating consequences for the taxpayer. According to Martin Kopa, the amendment of the law fulfills the content of the mentioned effect, so it is a disproportionate tax burden.

From procedural point of view, we consider as a critical moment, that experts and specialist was not invited to the discussion on such a dramatic topic, even though the promise was made. The only possibility of comments was 12-

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[9] www.opojisteni.cz

[10] www.euro.cz

[11] The European optimum keeps around 160% of the capital requirements so far, the Czech Republic keeps above 200%.

[12] It is not only about floods, it can be any mass events associated with natural catastrophe, transport, etc. The actual one can be considered Co-Vid 19.

[13] www.euro.cz (Miroslav Singer)

[14] www.mesec.cz

[15] Article 4, paragraph 4 of the Charter of Fundamental Rights and Freedoms and its application to tax issues

day abbreviated comment which was fully used by Czech Insurance Association and the Czech National Bank as the supervisory authority. Unfortunately, nor Czech National Bank´s comments were not considered[16]. Nobody else, based on available information, has the possibility to officially comment the amendment of the law. Not to consider any official comments from experts' side, neither the supervisory body is another controversial step that is legally challengeable.

Last in the list but not last in the whole case, is the lack of RIA (Regulatory Impact Assessment) which is set of steps that analyze the expected impacts of regulation or proposed legislation. According to the government itself, the RIA in the Czech Republic is the integral part of the legislative process in order to improve effectiveness of governance, the performance of the economy and to strengthen the importance of consulting prepared legislative and conceptual materials with experts[17]. Therefore, its absence is questionable at least.

5. ANALYSIS

In this chapter we focus on analysis of the impact of the submitted amendment of the law "provision taxation". We will calculate tax burden for individual companies and whole Czech insurance market based on 2018 data. Then we analyze how large is this burden on the company´ s net profit, whether the insurance market argument that some insurance companies will lose all their profit will be supported or not. We also look at the point, which insurance companies bear the greatest part of tax burden and we also look at the alternative variant mentioned above, what would mean for the state budget the adoption that tax burden would bear only non-life insurance companies.

5.1. Data and methodology

The main point is to define insurance companies which enter our calculation. List of insurance companies operating on Czech insurance market is available on the Czech Insurance Association´s web site[18], which is an interest association of domestic commercial insurance companies. The share of association´s members in total gross premium written in the Czech Republic is 98%. From this point of view, the data represents basically Czech insurance market. In additional, Insurance Europe takes Czech Insurance Association´s data as a representative – official – data for the Czech Republic, so we use significant data for our analysis[19]. From this list we removed 5 insurance companies and Czech Insurers´ Bureau[20] because of its specification, or they were purely branch in the Czech Republic etc. The removed organizations are not under full Solvency II regime and moreover their total gross premium written does not exceed 10% from whole insurance market. Total number of insurance companies entering the calculation is 19.

To calculate additional tax burden for individual insurance companies we need data on the amounts of accounting technical provisions and solvency technical provisions, which is available in annual reports and in SFCR[21] reports, which are regularly published and submitted to Czech National Bank at least annually. Net profit data is available in individual annual reports. An overview of all data is available in Appendix A.

5.2. Analysis

Firstly, we calculate the tax burden for individual insurance companies. Despite the omission of six insurance entities, additional market tax burden is CZK 11.6 billion, which corresponds to available information from media where the government expects approximately CZK 12 billion. The omitted entities account approximately 5% of the tax burden.

How much individual insurance companies would pay is available in Appendix A. Here, we point out 3 information. Who bears the greatest burden, how big is the impact on net profit and the impact of life insurance?

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16 www.cap.cz, www.mesec.cz (Jan Matoušek)

17 www.vlada.cz, www.ria.vlada.cz

18 www.cap.cz

19 https://www.insuranceeurope.eu/members/czech-republic-cz?section=Related statistics

20 5 insurers (Collonade, DAS, HDI, METLIFE, P5S)

21 SFCR = Solvency and Financial Conditions Reports

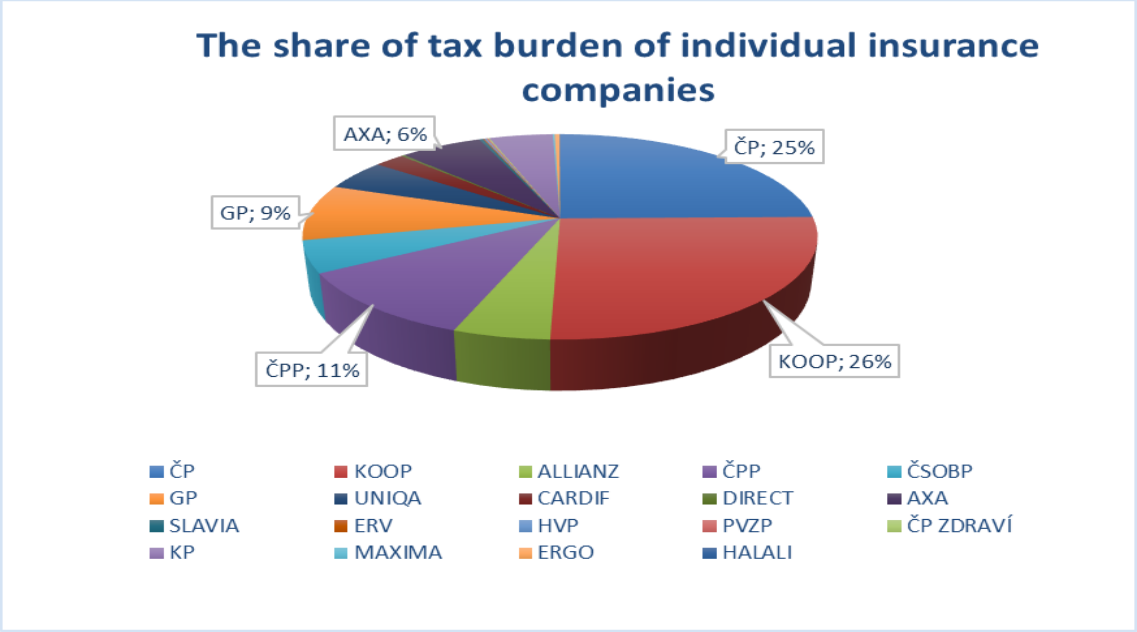

Figure 1: The share of tax burden of individual insurance companies
Source: Author

In the Figure 1 we can see that the two largest insurance companies – taken according to gross premium written) face the largest tax burden, which are Česká pojišťovna with 25% of the tax burden and Kooperativa with 26%. Together they cover 51% of the tax burden, approximately CZK 6 billion a thus they even pay their entire annual profit, as will be seen below.

It also can be noted that the relationship – larger insurance company faces larger tax burden – does not apply. In additional to the two insurance companies mentioned above into TOP 5 from tax burden´s point of view Česká podnikatelská pojišťovna, Generali a AXA. Together TOP 5 cover 76.43% of the tax burden, but for example AXA pojišťovna ranks among the small to medium-sized insurance companies in terms of gross premium written. Even in the case of TOP 5 insurance companies in terms of tax burden, the entities would pay almost their entire annual profit – 98%.

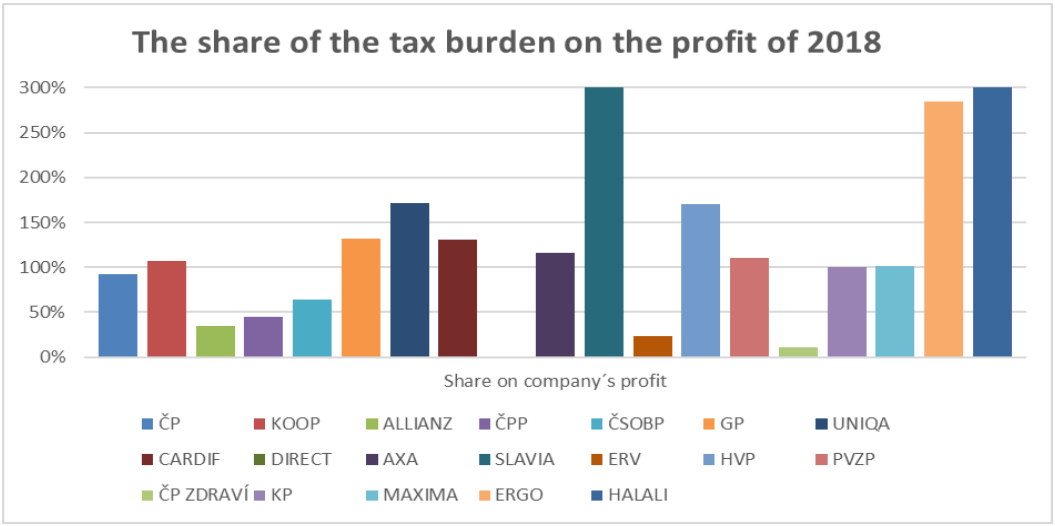

Figure 2. The share of the tax burden on the profit of 2018
Source: Author

Another view we are examining is the share of the tax burden in profit. In other words, how much % of the profit the insurance companies lose, how many entities fall from the profit to the loss and eventually how deep is the loss. The share in % is shown in the Figure 2.[22]

Out of 19 insurance companies, 12, which is 63%, cross the threshold 100%, which represents the liquidation of the entire profit and at the same time the point at which the insurance company falls onto a loss. Moreover, we have to say, that it is not a problem only of small insurance companies but large ones as well. of the TOP 5 from gross premium written´s point of view, the loss of the entire profit concern Kooperativa as the second largest insurance companies and a market leader Česká pojišťovna is very close to the mentioned threshold (91.85%). Of the remaining 6 insurance companies (Allianz, ČPP, ČSOBP, Direct, ERV a ČP Zdraví) only 5 record the profit also after paying the tax burden, Direct insurance company was the only one already in a loss in 2018.

There are even extremes in the insurance market, where some companies must pay their profit several times. ERGO insurance company need almost three of its profits (284%), Halali insurance company four of its profit (422%) and Slavia insurance company even over six profits (657%).

The above-mentioned figures confirm the insurance market´s argument that the amendment of the law may be a liquidation or will face new group policy, which can go in many directions. As probable scenario we state the large outflow of the capital abroad especially to mother companies, or transformation insurance companies to branches to avoid the full Solvency II regime. Moreover, without any doubt, such intervention in the market, where 63% of insurance companies face the liquidation of their profit, and as mentioned even large companies are not spared, destabilizes the insurance market and the minimum capital adequacy for extreme situations such as natural disasters or current pandemic situation with Co-Vid 19.

As the last topic we focused on the alternative proposal to exclude life insurance companies from the amendment of the law. Detailed calculations are available in the Appendix B.

If the tax burden would be paid only by non-life insurance, the state budget would be increase by less than CZK 4 billion (3 995 318 000 CZK), which is only 35% of the original CZK 11.5 billion.

It is important to point out, that the additional tax burden is calculated form the difference of accounting technical provision and solvency technical provisions, so the amount of gross premium written is not key factor. Thanks to this happens, that although the share of life insurance is smaller in comparison with the non-life insurance, tax burden is largely paid by life insurance companies. The key factors are the amounts of accounting and solvency technical provision, respectively their difference and life insurance has dramatically higher amounts of its technical provisions, especially accounting ones, so the difference is higher as well. Therefore, despite a smaller market share, the income to the state budget from additional tax burden would decrease by 65% on mentioned CZK 4 billion.

Higher difference between accounting and solvency technical provision for life insurance are mainly due to the above-mentioned fact that more variables (technical rate, inflation etc.) enter the calculation of life technical provisions. It is also a riskier, long-term and more complex insurance line and therefore amounts of technical provisions can differ more.

It does not make sense to calculate additional tax burden for individual companies because in absolute value they pay either less, or same. Because most of the insurance companies manage both portfolios (life and non-life) the first option is right. Moreover, there is only significant change in weights of two largest insurance companies Česká pojišťovna and Kooperativa, which will always bear – under otherwise unchanged conditions – the largest burden.

6. Conclusion and final discussion

6.1. Conclusion

The analysis of the insurance market has shown that the amendment to the law on the taxation of insurance provision has highly negative impact on the sector´s stability and will jeopardize its capital adequacy. 63% of insurance companies would lose their annual profit, in some cases several times. It is not clear how market will deny, or how mother companies will react on that, still little time has passed, on the other hand possible options are not optimal from long-term perspective.

In case of the exclusion of life insurance companies from the tax burden, it would mean a reduction by 65% and the income into the state budget will drop on CZK 4 billion. The biggest benefit of this option is the improvement of market´s stability and market´s capital adequacy, and also the fact, that liquidation of annual profit would not affect

[22] To read Figure 2, it is necessary to point out that Direct insurance company has a loss in 2018, so it figures with 0, Slavia insurance company reached 657% and Halali insurance company 422%. These points reach outside the graph, but for better reading the above variant was chosen

any insurance company from Top 10 in terms of gross premium written and in general their amount would decrease from 12 to 5.

In any case, the majority of the additional tax burden will pay two largest insurance companies (in terms of gross premium written) Česká pojišťovna and Generali.

6.2. Final discussion

Taxation of provisions is a topic which moved with the insurance market and not only it. The topic was quietly open by one government amendment to the law against which there were many arguments. The amendment cannot defend its basics, which is not tightened in terms of arguments and which, in my opinion, for many reasons, simply fits. There many arguments against it from various scale of experts, which have their quality, which were documented and submitted and whose list does not end. In addition, to these arguments nobody responded, discussions were stopped without explanation.

The deeper the reader deal with the topic, the more the foundation of the amendment to the law are shaken and arguments and proposals of experts are understood. Nothing is black and white, but the speed with which the amendment was enforced in the government, the absence of regular procedural steps, the reluctance to discuss and hide this crucial topic in the tax package were unmissable factors that cast at least a shadow on the main representatives of the government.

Unfortunately, the amendment to the law was accepted without any changes at the end of 2019, with the effect form 1 January 2020. The insurance market must pay the additional tax in two years. The first part has already paid, the second part fall into next tax period. A quarter after, as well as whole world, also insurance companies face pandemic Co-Vid 19 and its impacts. It is a good exam of financial stability of the market which was jeopardize with no reason by the government.

Acknowledgements

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[4] Commission Delegated Regulation (EU) 2015/35 of 10 October 2014 supplementing Directive of the European Parliament and of the Council 2009/138/ about the approach to insurance and reinsurance business (Solvency II), as amended
[5] Directive of the European Parliament and of the Council 2009/138/EC of 25 November 2009 about the approach to insurance and reinsurance business (Solvency II), as amended

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[10] www.opojisteni.cz
[11] www.ria.vlada.cz
[12] www.vlada.cz

Report:

[13] Annual reports
[14] Solvency and Financial Condition Reports

Appendix A. Tax Burden – Whole Insurance Market

	data 2018 / T CZK					19%		
	life/non-life	net profi/loss	Acocunting TP	Solvency (Pillar 1) TP	difference CAS-SII	additional tax	share tax on profit	tax share to market
ČP	life		39 230 000	33 299 216	5 930 784	1 126 849		
ČP	non-life		21 690 141	12 561 902	9 128 239	1 734 365		
	Help Total	3 115 000	60 920 141	45 861 118	15 059 023	2 861 214	91,85%	24,77%
KOOP	life		36 143 022	23 193 017	12 950 005	2 460 501		
KOOP	non-life		18 936 907	16 238 174	2 698 733	512 759		
	Help Total	2 788 578	55 079 929	39 431 191	15 648 738	2 973 260	106,62%	25,74%
ALLIANZ	life		14 094 000	12 110 000	1 984 000	376 960		
ALLIANZ	non-life		11 133 000	9 984 000	1 149 000	218 310		
	Help Total	1 719 061	25 227 000	22 094 000	3 133 000	595 270	34,63%	5,15%
ČPP	life		5 928 104	602 620	5 325 484	1 011 842		
ČPP	non-life		7 535 113	6 225 375	1 309 738	248 850		
	Help Total	2 790 000	13 463 217	6 827 995	6 635 222	1 260 692	45,19%	10,91%
ČSOBP	life		32 936 144	31 771 266	1 164 878	221 327		
ČSOBP	non-life		6 295 915	4 412 351	1 883 564	357 877		
	Help Total	904 000	39 232 059	36 183 617	3 048 442	579 204	64,07%	5,01%
GP	life		10 782 887	7 130 036	3 652 851	694 042		
GP	non-life		4 833 181	3 098 061	1 735 120	329 673		
	Help Total	773 778	15 616 068	10 228 097	5 387 971	1 023 714	132,30%	8,86%
UNIQA	life		5 336 271	3 749 982	1 586 289	301 395		
UNIQA	non-life		5 190 148	3 861 360	1 328 788	252 470		
	Help Total	323 942	10 526 419	7 611 342	2 915 077	553 865	170,98%	4,79%
CARDIF	life		553 000	-20 000	573 000	108 870		
CARDIF	non-life		557 000	-247 000	804 000	152 760		
	Help Total	199 419	1 110 000	-267 000	1 377 000	261 630	131,20%	2,26%
DIRECT	life	0	0	0	0	0		
DIRECT	non-life		859 643	699 959	159 684	30 340		
	Help Total	-43 058	859 643	699 959	159 684	30 340	-70,46%	0,26%
AXA	life		14 320 251	10 586 370	3 733 881	709 437		
AXA	non-life		0	0	0	0		
	Help Total	608 933	14 320 251	10 586 370	3 733 881	709 437	116,50%	6,14%
SLAVIA	life		0	0	0	0		
SLAVIA	non-life		896 439	719 933	176 506	33 536		
	Help Total	5 101	896 439	719 933	176 506	33 536	657,44%	0,29%
ERV	life		0	0	0	0		
ERV	non-life		177 721	114 614	63 107	11 990		
	Help Total	51 020	177 721	114 614	63 107	11 990	23,50%	0,10%
HVP	life		0	0	0	0		
HVP	non-life		510 602	417 212	93 390	17 744		
	Help Total	10 431	510 602	417 212	93 390	17 744	170,11%	0,15%
PVZP	life		0	0	0	0		
PVZP	non-life		371 343	292 653	78 690	14 951		
	Help Total	13 614	371 343	292 653	78 690	14 951	109,82%	0,13%
ČP ZDRAVÍ	life		69 415	-27	69 442	13 194		
ČP ZDRAVÍ	non-life		0	0	0	0		
	Help Total	126 561	69 415	-27	69 442	13 194	10,42%	0,11%
KP	life		47 260 000	44 470 000	2 790 000	530 100		
KP	non-life		193 000	99 000	94 000	17 860		
	Help Total	547 949	47 453 000	44 569 000	2 884 000	547 960	100,00%	4,74%
MAXIMA	life		44 334	40 373	3 961	753		
MAXIMA	non-life		208 725	122 384	86 341	16 405		
	Help Total	16 897	253 059	162 757	90 302	17 157	101,54%	0,15%
ERGO	life		135 687	132 188	3 499	665		
ERGO	non-life		1 623 952	1 402 787	221 165	42 021		
	Help Total	15 013	1 759 639	1 534 975	224 664	42 686	284,33%	0,37%
HALALI	life		0	0	0	0		
HALALI	non-life		40 161	22 234	17 927	3 406		
	Help Total	808	40 161	22 234	17 927	3 406	421,55%	0,03%
Total			**287 886 106**	**227 090 040**	**60 796 066**	**11 551 253**		**100%**
						96,26%		

Appendix B. Tax Burden – Non-life Insurance Market

	data 2018 / T CZK					19%		
	non-life	net profi/loss	Acocunting TP	Solvency (Pillar 1) TP	difference CAS-SII	additional tax	share tax on profit	tax share to market
ČP	non-life	3 115 000	21 690 141	12 561 902	9 128 239	1 734 365	55,68%	43,41%
KOOP	non-life	2 788 578	18 936 907	16 238 174	2 698 733	512 759	18,39%	12,83%
ALLIANZ	non-life	1 719 061	11 133 000	9 984 000	1 149 000	218 310	12,70%	5,46%
ČPP	non-life	2 790 000	7 535 113	6 225 375	1 309 738	248 850	8,92%	6,23%
ČSOBP	non-life	904 000	6 295 915	4 412 351	1 883 564	357 877	39,59%	8,96%
GP	non-life	773 778	4 833 181	3 098 061	1 735 120	329 673	42,61%	8,25%
UNIQA	non-life	323 942	5 190 148	3 861 360	1 328 788	252 470	77,94%	6,32%
CARDIF	non-life	199 419	557 000	-247 000	804 000	152 760	76,60%	3,82%
DIRECT	non-life	-43 058	859 643	699 959	159 684	30 340	-70,46%	0,76%
AXA	non-life	608 933	0	0	0	0	0,00%	0,00%
SLAVIA	non-life	5 101	896 439	719 933	176 506	33 536	657,44%	0,84%
ERV	non-life	51 020	177 721	114 614	63 107	11 990	23,50%	0,30%
HVP	non-life	10 431	510 602	417 212	93 390	17 744	170,11%	0,44%
PVZP	non-life	13 614	371 343	292 653	78 690	14 951	109,82%	0,37%
ČP ZDRAV	non-life	126 561	0	0	0	0	0,00%	0,00%
KP	non-life	547 949	193 000	99 000	94 000	17 860	3,26%	0,45%
MAXIMA	non-life	16 897	208 725	122 384	86 341	16 405	97,09%	0,41%
ERGO	non-life	15 013	1 623 952	1 402 787	221 165	42 021	279,90%	1,05%
HALALI	non-life	808	40 161	22 234	17 927	3 406	421,55%	0,09%
								0,00%
					Total	**3 995 318**		100,00%
						35%		0,00%

Capital Structure and Market Interest Rates - An Empirical Study in the German Utilities Sector

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Abstract

In the research field of corporate finance, there has been an ongoing theoretical and empirical debate on the capital structure of companies since the first essay by Modigliani and Miller in 1958. In the course of the relevant debate, many individual questions have been discussed in the meantime. On the one hand, it is controversial which factors influencing the capital structure of a company should be taken into account at all and, furthermore, what influence they can have. Then there is also the discussion of what influence the capital structure itself can have on the company and its management, other factors and finally also on the performance of a company. Finally, it is questionable whether there can even be a generally valid optimal capital structure for companies.

While at first glance it may appear that the debate on capital structure, which has been going on for more than six decades, can be resolved not least by consensus, in the practical discussion it becomes clear that the multitude of contributions each provide small pieces of the puzzle for the overall picture. However, due to the large number of partial questions, their final solution is - in principle - still not foreseeable. It is possible that the ongoing path of the corresponding research itself can already be understood as the desired success.

The present contribution aims to add another piece of the puzzle to the capital structure debate. This is classified as follows: Beyond the possible decision-making framework of corporate management and its interaction with investors and their product markets, the question of the influence of external factors on capital structure continues to arouse scientific interest. The present article ties in precisely with this current field of research in the capital structure debate. In this context, correlations between market interest rates and capital structure as well as other key figures of companies are examined.

The corresponding analyses are based on the observation of the market interest rate level and its changes over the 10-year period from 2009 to 2018 in Germany. The companies considered in the empirical analysis are 300 energy and utility companies in Germany. It should be noted that these companies have high and long-term fixed assets and correspondingly high capital requirements. The shareholders of the companies concerned are predominantly the respective municipalities. Against this background, a lower shareholder value orientation can be assumed than in the case of purely private companies. The following analysis is limited to an examination of the capital structure figures together with other key figures and the values of the market interest rate level.

It should be noted that the market interest rate level in Germany has fallen significantly in recent years, largely indirectly due to the monetary policy of the European Central Bank. Against this background, the present contribution examines the question of whether the companies examined here now make relatively greater use of - now cheaper - debt capital. As a result, it is found that the average debt financing ratio of the companies concerned has only risen slightly in 10 years. At the same time, however, the balance sheet equity ratio has also risen - even relatively more. A more intensive debt policy of the companies concerned can therefore not be confirmed. Finally, a significant increase in the key figures for the interest coverage ratio shows that the advantages of lower interest rates are primarily reflected in the acceptance of the associated savings in financing costs. As a result, the change in interest rates has no significant effect on the capital structure of the companies analysed.

Keywords: capital structure, corporate finance, finance strategy, financial leverage, monetary policy, interest rates, utility sector

1. INTRODUCTION

Due to the time lag between outgoing and incoming payments, companies need financing solutions to close this gap. In simple terms, equity instruments and free capital instruments can be considered for this purpose. The composition of the respective financing instruments is then called the capital structure. While at first glance the financing function is nothing more than the bridging of cash flow gaps over time, financial research nevertheless raises the question of whether the chosen form of financing can have an influence on, for example, the value of the company, its performance or its activity in the market.

Since the relevant initial contribution by Modigliani and Miller in 1958 (Modigliani / Miller 1958), there has been a very intensive discussion on the question of the effects of and implications for capital structure. For a solid introduction to this discussion, relevant aspects should be arranged in a first order (Bitz 2000):

1. Firstly, it must first be determined by what the capital structure can be adequately measured quantitatively.
2. Secondly, it must be determined by what the – possible – optimality of a certain capital structure can then be measured.
3. Thirdly, it must be established whether and – if so – what connection there is between the capital structure and the target figure in question.

This contribution to the discussion of capital structure should be based on these three steps shown above.

As a next step, the following chapter 2 of this contribution provides a basic overview of the course of the capital structure discussion. The irrelevance approach, the trade-off approach, the picking-order approach and then - in general - the other approaches are described roughly. The then following chapter 3 "Research Methodology" deals with the above-mentioned three-part initial order (Bitz 2000): First, it is agreed that the capital structure is to be measured using mean values for equity and debt capital of the selected company sample. In addition, further key figures from financial analysis are to be used, as they are deemed useful there. Secondly, it is stated that, against the background of falling interest rates on borrowed capital, it could in principle be advantageous to shift the capital structure more strongly in the direction of borrowed capital. Thirdly, it should then be examined whether the falling interest rate of the market is reflected in percentage terms in a shift in the capital structure – in the expected direction.

The empirical analysis that follows in the fourth chapter is based on an extensive sample of companies in the utilities sector in Germany. The special features of this sector are highlighted at the beginning. Then it is made clear that the focus of the analysis is on the external magnitude of the - recently significantly declining - interest costs of the market. This is followed by a descriptive examination of key financial figures of the sector - with a focus on the capital structure. Finally, correlations are derived in order to investigate possible correlations, which are finally interpreted.

The fifth chapter summarizes this contribution, places it in the context of current capital structure theory, and points the way to further deepening it. It should be made clear that the empirical analysis used in this study aims to gain initial insights into the possible correlation between market interest rates and capital structures in the respective utility sector. Against this background, the present contribution should be seen as introductory in itself.

2. THEORETICAL BACKGROUND – AN OVERVIEW

The intention of this chapter is to provide only a rough but nevertheless solid overview of the status and development of the most important capital structure approaches. These are mainly considered in their basic chronological order. The aim is to place the approach used in this paper into the puzzle of capital structure research.

2.1. Irrelevance approach

The initial contribution of Modigliani and Miller from 1958 (Modigliani / Miller 1958) on the postulated irrelevance of capital structure laid the foundation for the subsequent intensive research on the discussion of capital structure.

Their "theorem one" postulates that under the narrow neoclassical premises of a perfect capital market – without taxes, without insolvency costs, without asymmetric information (Bitz 1980) – the market value of a company is independent of the chosen capital structure. Modigliani and Miller define the capital structure simply as the ratio of debt to equity. Under the restrictive premises that have been set, the authors argue that the cost of capital does not change if companies use relatively more or less debt. To compensate, the cost of equity would almost automatically vary, so that the average cost of capital would not change. In concrete terms, an increase in debt with lower costs would be offset by an increase in the cost of equity – and vice versa ("theorem two"). Modigliani and Miller finally and consequently postulate that the weighted average cost of capital would be constant regardless of the chosen capital structure ("theorem three").

The paper by Modigliani and Miller was intensively discussed and criticized, especially because of its narrowly defined premises which hardly correspond to reality. As a result, the very lively debate on capital structure that is still going on today arose, which simplifies the question of which practical factors deviating from the narrow premises of the authors Modigliani and Miller can then have an influence on the relevance or even optimality of a certain capital structure – perhaps only in a certain case.

2.2. Trade-off approach

The variants of the trade-off approach are founded on the assumption that the conditions of a perfect financing market, as described above, do not exist in practice. In this context, it is fundamentally questionable whether the compensation of the leverage assumed by Modigliani and Miller via the cost rates of the capital positions can in reality be perfectly successfully. Based on a practical view, it is then argued that it should indeed be possible to increase or even maximize the value of a company by optimizing and thus minimizing the cost of capital. After all, it should be possible to achieve a good value contribution by designing the capital structure – in the form of the then optimal mix of equity and debt capital.

Advantages with respect to the cost of capital, according to the trade-off approach, arise in reality due to the non-validity of the strict assumptions of neoclassical finance theory according to the approach of Modigliani and Miller. Corresponding considerations and consequently also model analyses integrate, for example, the possible effects of taxes and insolvency risks.

In their 1963 contribution, Modigliani and Miller (Modigliani / Miller 1963) themselves state that their theorems are not valid when the effects of taxes are taken into account (Faulkender / Petersen 2006). In practice, interest payments are tax deductible, which makes them accordingly – after tax – more favourable than dividend payments, which are not tax deductible (Miller 1977). As a result, companies would tend to prefer debt financing, since this is cheaper in itself – provided that the compensation is not made directly through changes in the cost of equity – and is also tax deductible. A higher company value would result from the fact that a higher amount can be distributed to shareholders.

In practice, it should then also be borne in mind that the risk of insolvency and thus the loss of the company gradually goes hand in hand with higher debt (Merton 1974; Scott 1977). Against this background, Baumol and Malkiel (Baumol / Malkiel 1967) then show that there should be an optimal capital structure that takes into account the insolvency risk resulting from the trade-off between the cost advantage of debt capital and the insolvency risk, which increases with increasing indebtedness. According to the statement, on the one hand, the use of the – potentially, if not compensated – relatively cheaper and after taxes even more favourable debt capital leads to an increase in the value of the company with increased use. On the other hand, there is the risk of insolvency, which tends to be associated with higher indebtedness. As a result, the capital structure is precisely optimal in this case, with the marginal tax advantage corresponding to the marginal costs of insolvency.

2.3. Pecking-order approach

Pecking-order approaches differ from the perspective of the capital structure discussion held here above and do not assume that an important purpose of choosing a capital structure is to contribute to an increase in enterprise value by optimizing the cost of capital. The corresponding contributions of this research area are based on the consideration of an information asymmetry between internal management and external capital providers. In this case the initial contribution is mainly due to Myers and Majluf (Myers / Maljuf 1984; Brennan / Kraus 1987). Myers and Maljuf argue that internal management sends signals to external investors because of the choice of financial instruments. Their approach focuses on the question of what signal function an increase in equity capital has as opposed to borrowing and what interactions between investment and financing decisions can be derived from this.

For example, it is argued that a company that needs additional external capital will first take out low-risk loans. This is followed by higher-risk loans and only in the last place by equity. This view is justified as follows: It is assumed that financing by issuing new equity could be interpreted as a signal that the company in question is overvalued. As a result, financing with equity capital would then lead to a reduction in the share value. Similarly, debt financing would signal that the company in question has profitable projects and that share values are therefore more likely to be undervalued.

It seems obvious that the pecking order approaches – by their very conception – do not aim at a capital structure that maximizes the value of the company. Rather, it is argued that the capital structure merely reflects management preferences and the signal functions to the outside world (Shubita / Alsawalhah 2012; Antill / Grenadier 2019).

2.4. Other approaches

Against the background of the long duration of the capital structure debate, a number of other approaches have been pursued in addition to the three directions presented here. Some of these approaches complement each other, others contradict each other and yet others take completely different directions. One such further approach is, for example, the agency theory's view of capital structure (Jensen / Meckling 1976). Here it is argued that the choice of capital structure can be made strategically in order to build up – more or less – pressure from shareholders on management. Finally, the principal agent relationship between debt and equity capital providers must also be considered here (Bitz 2000). In addition, further contributions consider the interactions between the capital structure on corporate strategy and corporate performance and vice versa (Barton / Gordon 1987; Chevalier 1995). It is generally argued that the capital structure can influence the strategic activities of a company. It is understandably also observed that the success of a company in the marketplace can also influence its capital structure through improved earnings.

Within the framework of theoretical and also empirical approaches, very different factors are identified in the course of the study which can be related to or have an impact on the capital structure of companies.These include industry affiliation, size, growth, strategy, risk, rating, capital market environment, economic situation, profitability, age, legal framework and some others (Titman / Wessels 1988; Rams 2019). It should also be noted that the effect and direction of action of the various factors are also confirmed in quite different ways over the course of time.

Recent studies have focused on the possible impact of macroeconomic factors on the capital structure of companies. Here, it is primarily assumed and examined whether certain macroeconomic factors have an effect on capital structures and to what extent this can be observed and justified (Chen 2010; Grosse-Rueschkamp / Steffen / Streitz 2019, Levy / Hennessy 2007). This research approach is also followed by the present study, which empirically examines the possible influence of changes in market interest rates on the capital structure of companies.

3. RESEARCH APPROACH

3.1. Research question

The following analysis focuses on the question of whether and to what extent the decline in market interest rates, which has persisted for many years, has affected the capital structures or other relevant key figures of the utilities under consideration. In connection with the presentation of the trade-off approach described above, it should be made clear that company managements may seek the advantage of relatively cheaper borrowed capital by tending to use credit financing more often. The trade-off approach argues essentially on the basis of the effect of taxes. In particular, the trade-off approach argues that companies will continue to use relatively more of the relatively cheaper debt capital after taxes until the advantage of the cheaper credit is outweighed by the disadvantage of the higher leverage risk.

The following analysis focuses solely on the reduction in the cost of borrowed capital due to the decline in market interest rates. It is assumed that the utilities under consideration could use relatively more loan financing, since the market interest rate level translates into a reduction in their price.

3.2. Data approach

The following analysis is based on the key figures for the earnings and financial situation – including capital structure – of a sample of 300 utilities companies in Germany. The focus of the analysis is not on one company, but

on the average for the entire sample of the industry. The basis of the analyses carried out are the annual financial statements published in the "Bundesanzeiger" (“public database for annual accounts”; Source: PwC Research) of the relevant – mainly municipal – energy supply companies. All considered data are presented and evaluated over a period of 10 years (2011 to 2018).

The analyses conducted in this study mainly use basic approaches of descriptive statistics. In particular, mean values and scatters around them are worked out - graphically. Unless otherwise stated, the median is the chosen mean value in the focus of the analysis. In contrast to the arithmetic mean, the median cannot be distorted by possible extreme values in both directions. Accordingly, this key figure is well suited for the analysis and interpretation of mean values in a non-normally distributed sample. To illustrate the dispersion around the median, a dispersion of 50% around the median is shown. This represents the key figure range of the second and third quartile of the considered sample. Their width then illustrates the existing scatter range of the sample values.

In the next step, the calculated key figures for the capital structure and other financial values in the sector are then compared with the values of the market interest rate development by means of regression analysis. The aim of this procedure is to show the possible effects of interest rate levels on the companies concerned and their capital structure. Although interest rate policy can react - at least indirectly - to key figures in the corporate sector, this study focuses exclusively on the possible effects of interest rate levels on companies.

With reference to the first classifications of Bitz (Bitz 2000) presented above in this paper, this analysis (1) quantifies the capital structure as the ratio of equity and the ratio of debt to balance sheet total, (2) understands a possible improvement in the capital structure as a movement towards or on average lower cost of capital - in this case by the use of relatively more debt due to lower interest rates - and (3) confirms the possible correlation between the decline in market interest rates and the capital structure.

3.3. Industry characteristics

Regarding the sector of mainly municipal utilities, the following special features should be taken into account or assumptions made:

Firstly, the sector is very capital-intensive due to the investments in infrastructure (primarily electricity grids and generation, gas supply, water and sewage management and others) that are maintained and must be made on an ongoing basis. Accordingly, substantial financial resources are required to finance them.

Secondly, in the utility industry the capital is tied up comparatively long. In some cases, periods of more than 30 years must be considered. Solid calculability can favour the use of debt financing. In this context, it should also be noted that the main utilities business segments are relatively stable despite ongoing upheavals.

Thirdly, public sector regulations in the industry must often be considered. This applies, for example, in certain cases to the determination of investment requirements or pricing. Likewise, financing solutions with a certain portion of equity capital are specified here for individual investments - which can, however, be indirectly offset again with borrowed capital and are mostly compensated for (Ganster / Welling / Koch 2014).

Fourthly, the municipal utilities sector is - understandably - characterised by predominantly municipal shareholder structures. As a result of this shareholder structure, the requirements for increasing company value and profitability may be relatively lower. Nevertheless, high pay-out ratios are often expected. Sometimes the companies are also expected to take over less profitable activities of the municipalities. Finally, the municipalities sometimes "lend" their utilities their public credit rating indirectly.

In summary, it should be emphasised here that, on the one hand, the high financing requirements in particular make the municipal utilities sector very interesting for capital structure analyses in connection with changes in interest rates. On the other hand, a possibly reduced primary focus on profitability as well as the regulation and municipal involvement mentioned above limit the sector's suitability for the investigations to be carried out here partly.

4. EMPIRICAL ANALYSIS – AND RESULTS

4.1. Preliminary remarks

This chapter first of all shows the development of the market interest rate level in Germany. In the next step, the key figures of the capital structure – equity ratio and debt ratio – are presented from the employed data sample from

the utilities sector in Germany. Furthermore, the interest coverage ratio in the form of the ratio of EBITDA (earnings before interest depreciation and amortisation) to interest expense is also considered. Selected individual regressions are then performed.

Since the present study considers empirical data from the real world, the irrelevance theorem presented above will not be considered further here. Likewise, it will not be pursued further whether the management of the companies under consideration wishes to send signals to the shareholders or the lenders by choosing the capital structure; accordingly, the pecking-order approach will not be considered further. Finally, however, the trade-off approach will be applied, since the effects of a change in the interest rate level will be examined. The trade-off between cost savings and risk may play a role here. The present study focuses on a few variables. The intention is to open up the issue of the possible impact of a – after all important – macroeconomic variable on the capital structure and to show the way to further questions.

4.2. Capital market interest rate

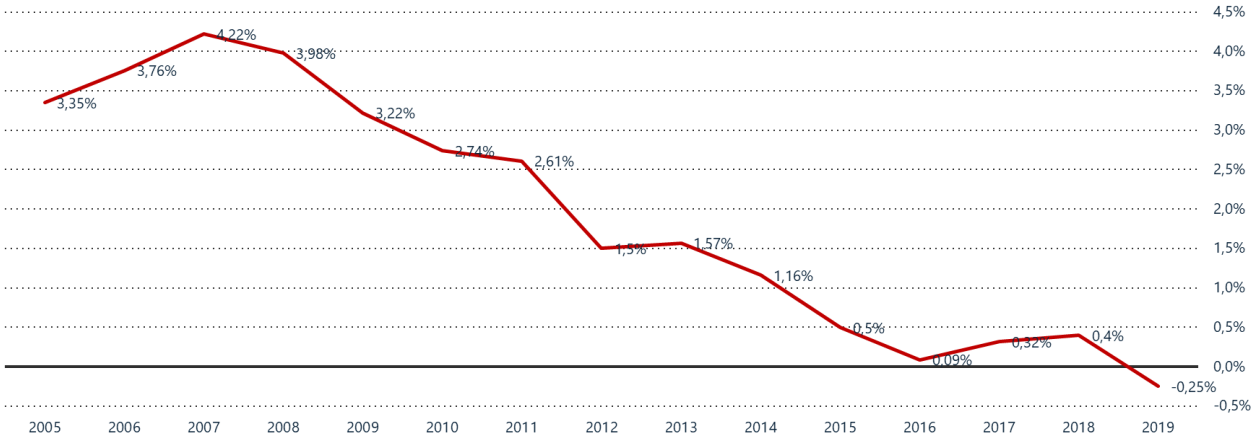

Fig. 1. Capital market interest rate in Germany from 2005 to 2019 (Source: European Central Bank)

The chart shows the decline in capital market interest rates in Germany in the period from 2005 to 2019. The capital market interest rate is - generally and here - defined as the market interest rate of government bonds with a remaining term of 9 to 10 years.It can be seen that the capital market interest rate has fallen significantly since 2007 from over 4.0% to below 0.0% in 2019.

Depending on their own credit rating and due to some other factors, borrowers have to pay premiums on the market interest rates shown here. On average, the companies considered in this study have good credit ratings. The following analyses are based on the changes in the interest rate level - and do not include the aforementioned premiums. The period from 2009 to 2018 is particularly relevant in this study, as it corresponds to the available data basis of the utilities' key figures.

4.3. Selected financial and capital indicators

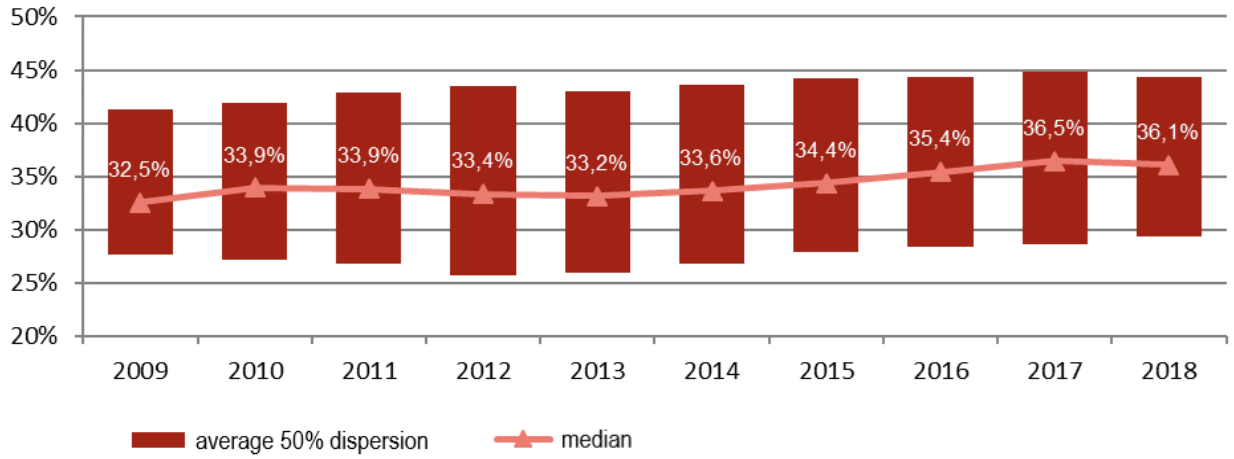

Fig. 2. Equity ratio of – mainly – municipal utilities from 2009 to 2018

The chart shows that the median equity ratio rose by a total of 3.6% in the period from 2009 to 2019 after fluctuations. A - basically expected - relative reduction of the relevant ratio has apparently not occurred. Behind the picture presented - not shown here - it is clear that the capital structure ratios in the market are continuing to spread. There are more companies with stronger equity and more companies with weaker equity.

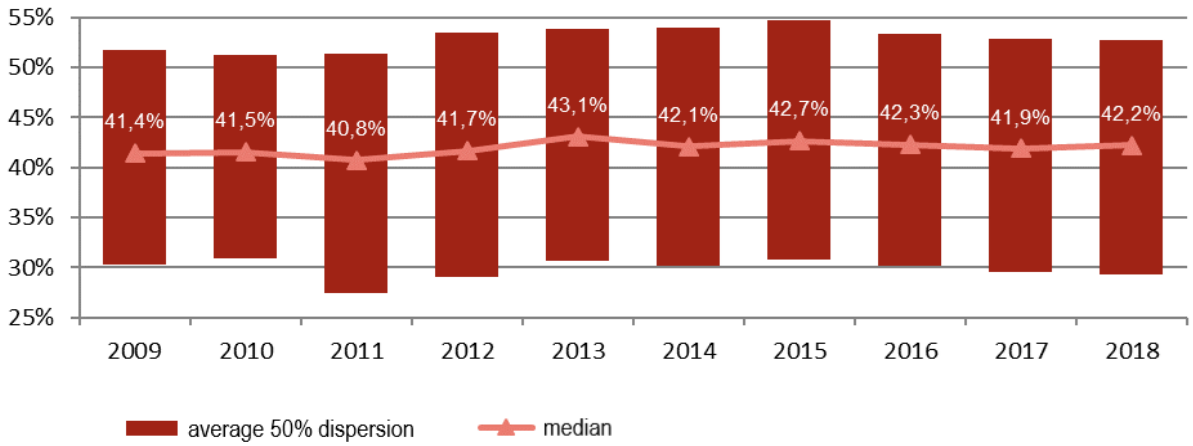

Fig. 3. Debt ratio of - mainly - municipal utilities from 2009 to 2018

The chart shows that the median debt ratio rose by – only – 0.8% in the period from 2009 to 2019. The relative increase shown here is lower than that shown for equity. A – basically expected – relative increase in the relevant ratio has apparently not occurred.

As both the equity and debt ratios have risen, this has apparently been at the expense of the other positions on the liabilities side. These are in particular other items allocated to the so-called economic equity – specific so-called "grants".

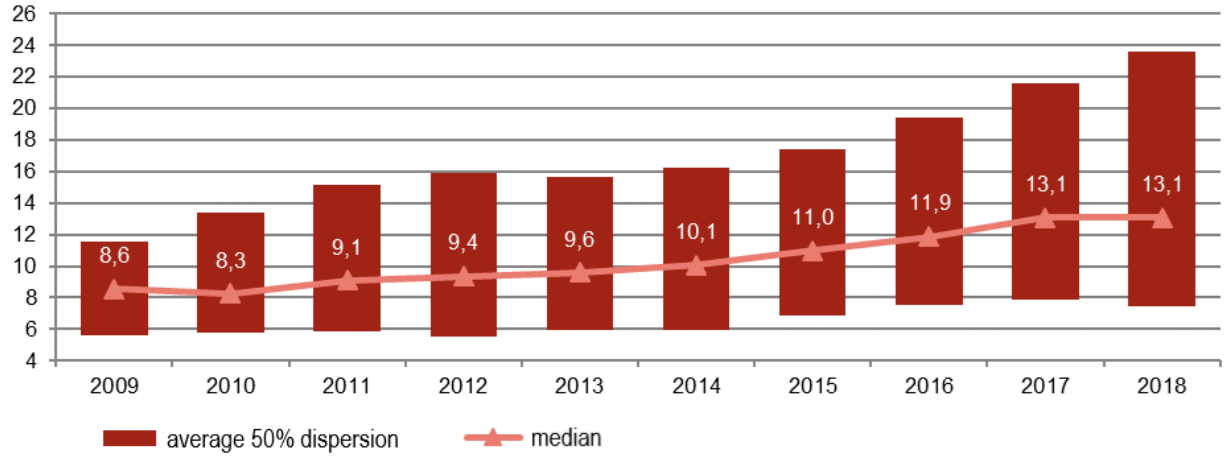

Fig. 4. Interest coverage ratio (EBITDA / interest expense) of – mainly – municipal utilities from 2009 to 2018

The chart shows that the average interest coverage ratio rose from 8.6 to 13.1 in the period from 2009 to 2019.This increase is significant, as it shows a total of 52.2% more revenue - measured in EBITDA - in relation to interest expense. If the analysis is put into context with the increase in the equity ratio shown and the only slight increase in the debt ratio, the picture is interesting. It can be seen that in the phase of falling market interest rates there has been no significant shift towards an increase in the debt ratio. The companies considered leave the interest rate reduction effect primarily simply "standing" as a saving, which becomes clear in the improvement in the interest coverage ratio.

4.4. Regression analysis - Capital market interest rate vs. key financial figures

In this section, the regressions are carried out, which relate the trends shown in the financial ratios of the sample of utilities to the changes in the market interest rate shown. It is intended to quantitatively deepen the results already presented under 4.3.

The three previously considered medians of the financial ratios equity ratio, debt ratio and interest coverage ratio are considered. In all three cases, two calculations are carried out. While the first is straightforward, the second is intended to take into account the possible time lag of the effect of interest rate changes in practice due to already existing financing in the companies. The first calculation shows the ratio of the respective financial ratio to the market interest rate of the same year ("same year"); the second shows the same ratio to the market interest rate of respectively staggered two years before ("interest rate two years before").

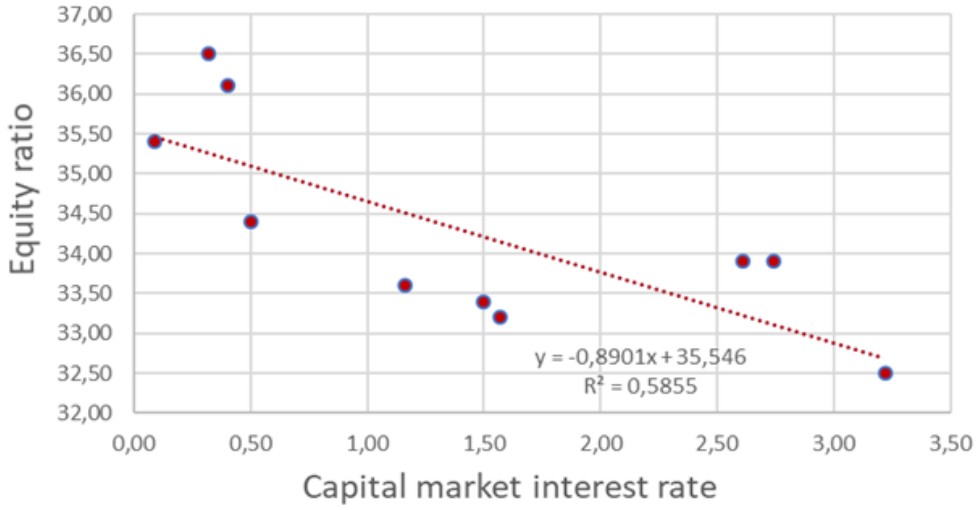

Fig. 5. Regression of median equity ratio and capital market interest rate - same year

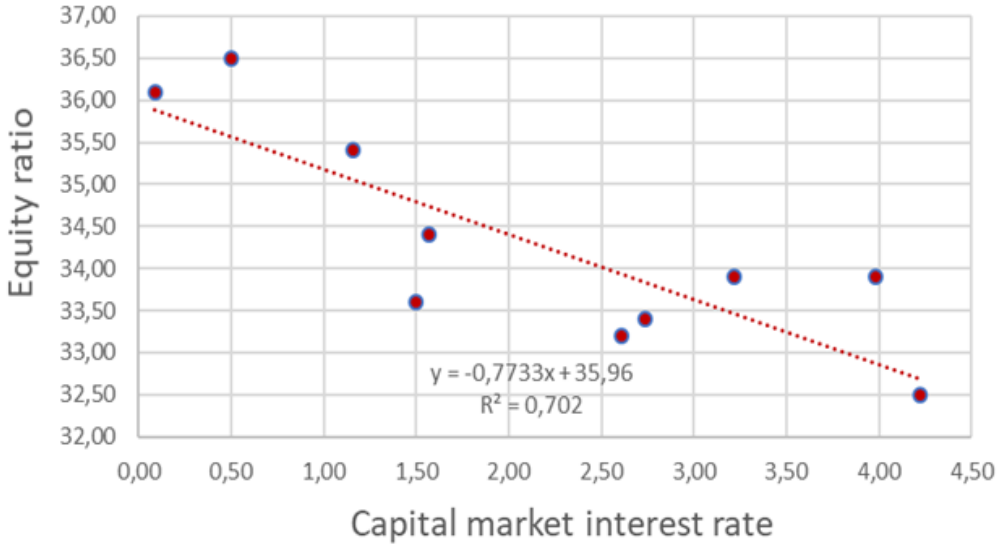

Fig. 6. Regression of median equity ratio and capital market interest rate - interest rate two years before

The regression analysis concerning the relationship between market interest rate and equity ratio shows an inverse relationship. The decline in the market interest rate level is accompanied by an increase in the equity ratio. The increase factor is lower – 0.77 to 0.89 – if the market interest rate is viewed with a time lag. However, the coefficient of determination of the correlation is then stronger – 0.70 to 0.59.

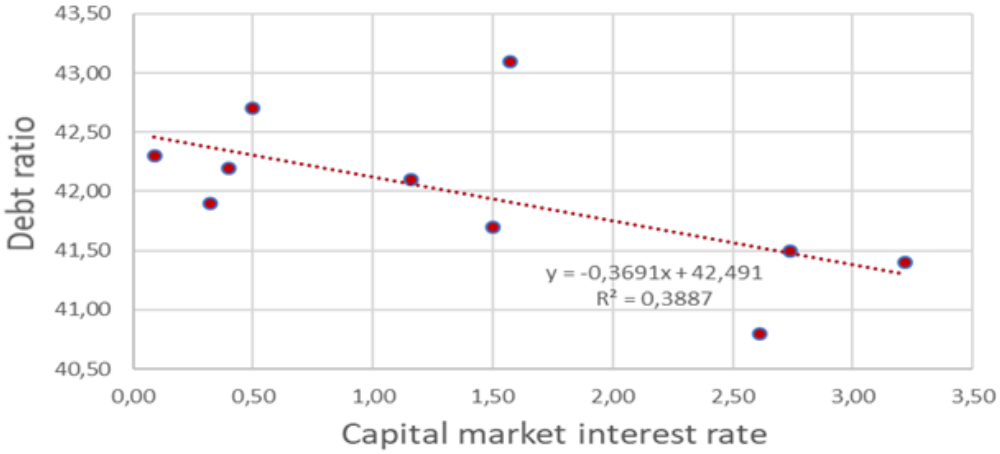

Fig. 7. Regression of median debt ratio and capital market interest rate - same year

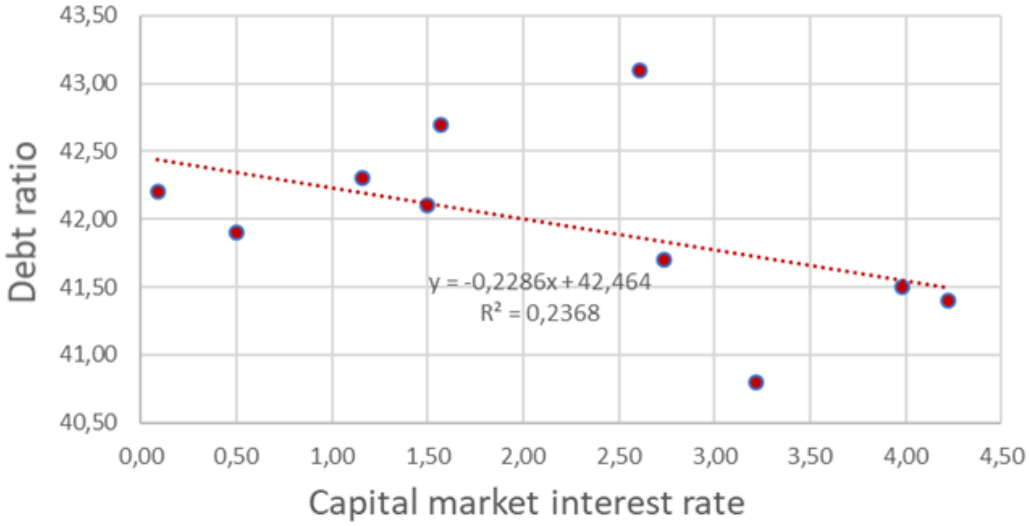

Fig. 8. Regression of median debt ratio and capital market interest rate - interest rate two years before

The regression analysis concerning the relationship between market interest rate and debt ratio shows an inverse relationship. The decline in the market interest rate level is accompanied by an increase in the debt ratio. The increase factor is lower – 0.23 to 0.37 – if the market interest rate is viewed with a time lag. The coefficient of determination of the correlation is then simultaneously smaller – 0.24 to 0.39.

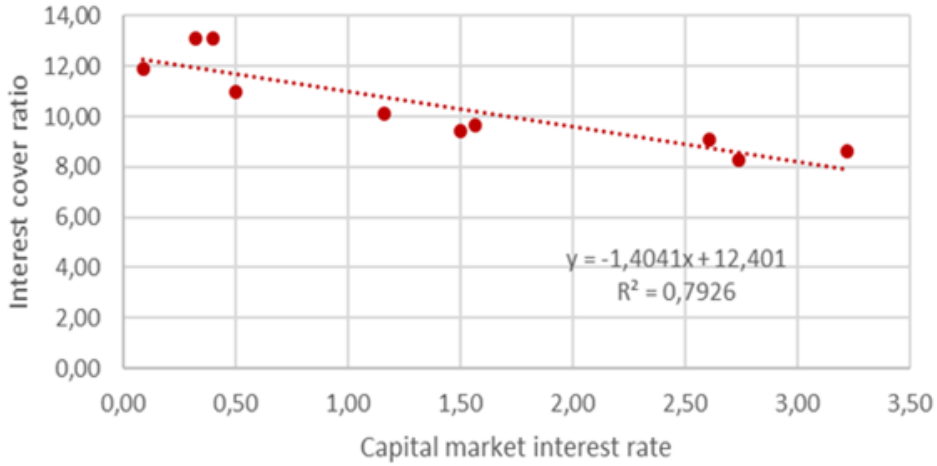

Fig. 9. Regression of median interest cover ratio and capital market interest rate - same year

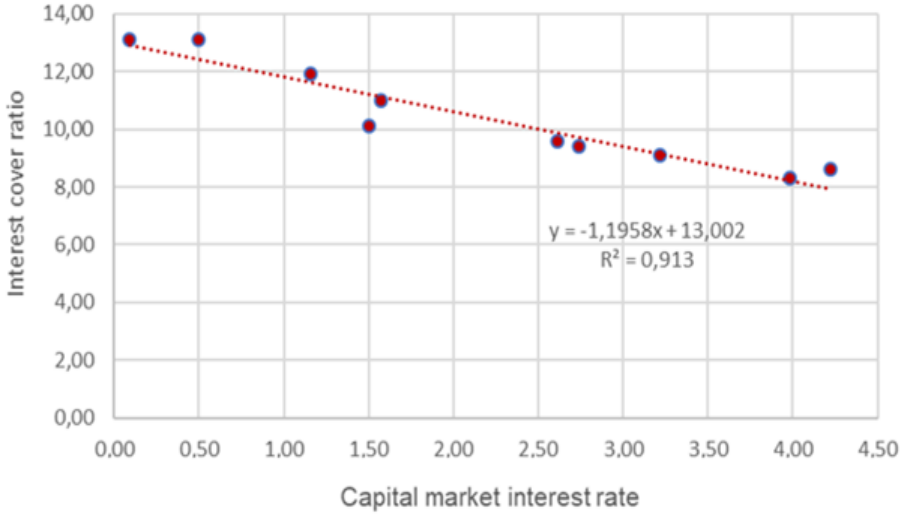

Fig. 10. Regression of median interest cover ratio and capital market interest rate - interest rate two years before

The regression analysis concerning the relationship between the market interest rate and the interest coverage ratio shows an inverse relationship. A decline in the market interest rate level is accompanied by an increase in the interest coverage ratio. The increase factor is lower – 1.20 to 1.40 – if the market interest rate is viewed with a time lag. However, the coefficient of determination of the correlation is then greater – 0.91 to 0.79.

5. CONCLUSION

The present study is part of the debate on capital structure that has been underway since the initial contribution by Modigliani and Miller in 1958. Following the trade-off approach, it considers a possible relationship between the market interest rate level and the capital structure of companies. Specifically, it is examined whether the empirically visible decline in the market interest rate level in Germany has an impact on the development of the capital structure and other related financial ratios. The equity ratio, the debt ratio and the interest coverage ratio are considered. The study is conducted empirically using a sample of mainly municipal utilities. The methodology is limited to descriptive statistics including the derivation of correlations.

Against the background of the trade-off approach, it would have been expected that the equity ratio would have fallen under certain circumstances and a shift towards a rising debt ratio would have become apparent. The analysis then shows that the equity ratio rises more strongly than the debt ratio over time. In fact, the debt ratio increases only very slightly. Consequently, further shifts on the liabilities side of the companies considered must be taken into account. In the following regression analysis, it becomes clear that inverse correlations can be established for the relationship between the market interest rate and the equity ratio, debt ratio and also the interest coverage ratio under consideration. However, the strongest correlations are found for the interest coverage ratio also considered.

The present study provides a surprising result for the empirical study under consideration. A decrease in the market interest rate level leads here only to a slight increase in the debt ratio. This increase is overlaid by other key figures.

The present study also provides an outlook for further deepening the analysis. It is also possible to look at the concrete effects of the sector concerned, the actual decision-making calculations of company management and finally the progression of an extended set of key figures that may need to be considered in the capital structure debate beyond the equity and debt ratios. One of these is already the analyzed interest coverage ratio.

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