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FOREWORD

Quality of governance is playing a larger role in achieving sustainability in conditions of permanent instability in the business environment. Quality of governance is closely connected with stable long-term government policy, which must be based on a solid theoretical background. Some of the articles in this issue of the Journal of Business Management are related to this topic. In Eastern Europe, one of the crucial factors in the development of innovative entrepreneurship is financing. Two articles in this issue are devoted to problems of innovative business.

One of this issue’s articles is based on the controversial statement that growing profitability in the banking sector is a factor of the sector’s sustainability.

Small business currently plays a dominant role as a factor in employment and the economies of Eastern European countries in general. Nowadays cooperation is becoming an important aspect of small business development in several branches, especially in agriculture. One of this issue’s articles is devoted to cooperatives’ value systems in Poland.

All the papers were double-blind peer reviewed. Following the necessary corrections and additions resulting from the review process, 10 accepted papers were included in the issue.

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Head of the Editorial Board,
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THE IMPACT OF GOVERNANCE ON THE EFFICIENCY OF THE BALTIC STATES’ MAJOR PORTS

Valters Bolevics

ABSTRACT
The purpose of the present research is to evaluate port governance models within the Baltic States at European Union-level trans-European core network ports (TEN-T) following the principle of commercially-oriented corporations in public ownership and with the overall direction of independent port management for landlord configuration ports, quantitatively assessing the impact of governance on port performance results, analysing and comparing seaports and determining the best performer within the region. In the course of the work, port performance results were analysed from both an operational and a financial perspective, port authorities were ranked according to the results, and recommendations for better performance were proposed. The results of this research may be of value to port authorities, policymakers and scholars.

Keywords: Baltic ports, port performance, port governance, port authority, impact

INTRODUCTION
The research subject constitutes port authorities in the Baltic States which perform the functions of landlords. The landlord port is a model characterized by a mixed public-private orientation. In this model, the port authority typically acts as a landlord and as a regulatory body, while port operations, especially cargo handling, are carried out by private companies. The model is appropriate for ports with the characteristics of Riga, Ventspils, Tallinn and Klaipeda. Similar to other landlord ports, the port authorities of all four Baltic States’ TEN-T ports manage real estate, carry out port development and planning, undertake marketing of the location, and provide maintenance and upkeep of port access and the waterside. The port authorities have retained responsibility for dredging and ice breaking, while the ports outsource some services, with regard to port security, safety of vessels and maintenance of infrastructure. A key responsibility of the landlord port is to manage the real estate, which includes economic exploitation/leasing out, long-term development, maintenance and improvement of basic infrastructure such as fairways, berths, access roads, and tunnels, and managing adjacent industrial areas as free zones. The terminal operators provide and maintain their own superstructure, including buildings (offices, sheds, warehouses, container freight stations, workshops). They acquire and install their own cranes and other equipment and arrange for stevedoring. Contemporary ports need to be efficiently managed and customer-oriented to compete successfully in an increasingly competitive market and in repositioning ports in becoming value-adders rather than value sub-contractors along the logistical supply chain (Koi et al., 2007). From the ports’ perspective, the goal is to reinforce sustainable development to meet the objectives of commercially effective management. From the port authorities’ perspective, the goal is to efficiently manage assets, land and infrastructure, by trusteeship, to cover port development costs. From the stakeholders’ perspective, the port authorities’ objective is to act in a socially responsible manner, pay dividends to shareholders, increase the regional
market share, increase passenger and operational cargo turnover figures, invest in new superstructure developments and increase operating profit. From the shareholders’ perspective, the port authorities’ objective is to increase net profit and total market share, invest in new development projects and increase operational and financial performance results.

The scientific concern of the researched agenda and research gap is to evaluate how the Baltic States’ landlord ports are governed and how governance models impact port performance and its efficiency and, following the key performance indicator (KPI) principle, determine the port authority which outperforms others and under which governance principle it is managed, comparing this to other port authorities’ performance results and governance models.

THEORIES AND CONCEPTS OF THE RESEARCH

A port is a land area with maritime and hinterland access that has developed into a logistics and industrial centre and plays an important role in global industrial and logistics networks (Notteboom et al., 2009). Port authorities tend to function as landlords, regulators, or operators (Baird, 1995), depending on their respective legal status (Brooks, 2006). The landlord function of port authorities has been defined in keeping with the literature on port governance models (Brooks, 2007). Strategically, the major seaports in the Baltic States and their port authorities (PA) act as triggers for national infrastructure development plans, such as railway and road network expansion, giving due consideration to social responsibility and the environment. Notteboom (2009) focuses on the logistics environment in ports and how port authorities should act in this challenging environment, stipulating that port authorities must be able to respond to fast-changing market needs and see networking as a central prerequisite for PA competitiveness. Chlomoudis and Pallis (2002) on the other hand have developed a “smart port authority” concept, in which the port authority takes responsibility for improving interconnectivity and interoperability among port users. Within the research, the author also followed the OECD (2004) guidelines for commercially-oriented corporations in public ownership and the World Bank (2001; 2010) port reform toolkit and guidelines for efficient port governance.

Governance is a historic term for the description, evaluation and comparison of state governance and was often used as a synonym for government in the political literature. In the 1970s, the concept of governance was revived in American business language in the concept of “corporate governance” with a focus on corporate responsibility. The World Bank introduced the term “good governance” and thus coined this phrase (Wouters and Ryngaert, 2005). Today, corporate governance defines the regulatory framework for the management and supervision of companies while the corporate governance framework is largely determined by legislators and owners (Spira, 2002) and the actual corporate governance design falls to the supervisory board of the board of directors. The company-specific corporate governance system consists of the totality of relevant laws, regulations, codes, letters of intent, mission statements, and habits of management and monitoring (OECD, 2010). The academic literature discusses “good corporate governance” and the improvement of existing corporate governance. Good corporate governance should ensure and guide a responsible, professional and transparent business administration in the interests of owners and also of external stakeholders such as creditors, debtors, society and employees (Felo, 2011; Rose, 2016). The characteristics of good corporate governance are
as follows: 1) appropriate risk management, 2) formal and transparent procedures for the proposal and election of board members, 3) a functional management organization, 4) management decisions focusing on long-term value creation, 5) transparency in internal and external corporate communications, 6) safeguarding mechanisms to secure the interests of different groups (stakeholders), and, overall, 7) a clearly defined management and control structure (Passenheim, 2010).

The corporate governance discourse aims at defining a self-regulating system of contracts to avoid agency problems resulting from distant or absent shareholders or owners who contract executives to act in their interests (Johnston, 2009). The problem of managerial self-interest is widely discussed in the framework of managerial power theory with its basic assumptions that management compensations are often excessive and do not correlate to performance and the increase of the company’s value and thus of the owner’s investment (Rappaport, 1981). Managerial power theory states that the executive will serve his interests rather than those of the owner or shareholder; to avoid such issues, the principal has to incur “agency costs” that arise from the necessity of creating incentives that align the executive’s interests with those of the shareholder and costs for monitoring the executive’s conduct to prevent the abuse of owner interests (Henry, 2010). Agency theorists do not explore the conduct, relationships and attitudes that generate board effectiveness; instead they examine the effectiveness of various mechanisms designed to canalize the executive’s self-interest so that he serves the shareholders’ interests (Firth and Rui, 2012). Agency theory is highly influential in shaping the corporate governance systems’ reform in terms of board-based mechanisms and external, market-based governance mechanisms (Solomon, 2007). Governance relies for its effectiveness on the transparency of financial information and the transparency of management decisions so that external market mechanisms can be effective through disciplinary effects on the company and thus on executive performance (Berghe, 2012). The executive’s self-interest must be aligned with the shareholders’ interests, by value-based key performance indicator systems rewarding an increase of the economic value added (Zarbafi, 2011); therefore, corporate governance is understood in the context of institutional economics, which is to bring a balance of interests between stakeholders.

RESEARCH METHODOLOGY

The research presents the results of a synthesis of the literature on port authority governance models, with the aim of making a comparative analysis of existing governance models and those models’ impact on the efficiency of trans-European core network ports in the Baltic States. Therefore, the scope of this research was eventually narrowed down to the governance and management of port authorities in the principal seaports of Tallinn, Estonia; Klaipeda, Lithuania; Riga, Latvia; and Ventspils, Latvia. The synthesis of the literature encompasses the governance, functions, and competitiveness of port authorities, and the results include an evaluation of the existing legislative framework in each of the Baltic States’ major seaports. The research is based on bibliometric tools and publicly available quantitative and qualitative information on the governance models of Baltic States’ port authorities and their efficiency and management, a legal framework analysis, yearly port statistics and an analysis of financial performance results.

The main methods used to achieve the research goals include theoretical and literary analyses, empirical observation, and monographic or descriptive methods; in order to
assess the impact of port governance on port authorities’ efficiency, the methodology of Bilodeau et al. (2006) is used, which specifies that, in addition to the formal status change, corporatisation almost always involves a portfolio of other changes, such as narrower task domains, explicit performance measures and targets, a greater focus on the chief executive to deliver on targets and greater discretion to manage budgets and employees. To assess changes in organisational behaviour and the performance of corporatised government agencies, Bilodeau et al. (2006) have developed a series of hypotheses that are translated into performance indicators.

ANALYSIS OF THE RESEARCH RESULTS

In the European Union, both the European Commission and the European Sea Ports Organization (ESPO) have, since 2007, shown interest in setting up a port industry performance management platform in order to increase knowledge and awareness of port industry performance (Dooms, 2014). According to ESPO, in 2016, most port authorities in Europe remain publicly owned; full ownership by the state or by the municipality remains predominant. Only a few port authorities combine ownership of different government levels (e.g. state- municipality, province-municipality). Mixed public-private ownership is still very rare and exists only in a few countries, in Piraeus and Thessaloniki (GR), Koper (SI), CMP (DK) and since 2011 in Constanza (RO). In April 2016, China’s Cosco Group acquired 67% of the shares of Piraeus Port Authority (PPA), a listed company that has a concession to operate the port until 2052. In these cases, the public sector owns the majority of shares and private shareholders’ participation is rather limited. Port authorities listed in the stock exchange remain the exception in 2016. Full private ownership, where the port authority is fully owned by one or more private parties, is characteristic of some ports in the UK. Ports are moving towards more independent private-like management and while some port authorities are structured as independent commercial entities and operate in a commercially oriented manner (ESPO, 2016), others are still independent public bodies with their own legal personality and different degrees of functional and financial dependence on the public administration. These two main categories, while operating under different legal forms, may share similar principles such as self-financing and commercial and entrepreneurial behaviour to increase market share and attract private investment. They may also share the same levels of influence from public authorities through participation in the governing board of the port.

Klaipeda is the only seaport in Lithuania besides the oil terminal in Butinge. The port is an important node in the Lithuanian and international transportation system. Its major traffic consists of oil and oil products, bulk products, fertilisers, ro-ro cargoes and containers. The port of Klaipeda is managed by the Klaipeda State Seaport Authority (KSSA), a 100% owned government enterprise under the direct control of the Ministry of Transport and Communications of the Republic of Lithuania. The board of the KSSA is made up of representatives of the Ministry of Transport and Communications of the Republic of Lithuania, the Klaipeda county administration, the city of Klaipeda, the port authority, port users, and their associations and institutions.

The Port of Tallinn operates according to the landlord port model and is the only port authority within the Baltic’s TEN-T ports which is governed according to good corporate governance guidelines. Since 1997 all superstructure and equipment are owned and operated by private companies, the supervisory board consists of six representatives of
the Estonian Ministries of Finance and of Transport and Communication, and the management board consists of three professional members. The supervisory board of the port of Tallinn formed an audit committee which is an advisory body to the supervisory body about exercising of supervision, including the management of the accounting function, the performance of the external auditors, the functioning of the internal audit system, the monitoring of the management of financial risks, the legality of activities, budget preparation, and approval of the annual report. The audit committee consists of three members of the supervisory board who are appointed for three years.

The port authorities of Ventspils and Riga are comprised of the board and the executive body (or administration). The executive is subordinated to the board and executes its decisions; it is headed by a CEO who is appointed by the board. In accordance with the 1994 Law on Ports, the boards of Riga and Ventspils are composed of eight members: four representatives of the government (of the Ministries of Transport, Finance, Economics, and Regional Development and the Environment respectively) and four representatives of the relevant municipal authorities. Ministry representatives are appointed by the Cabinet of Ministers, while municipal representatives are appointed by the city council. The boards do not have representatives from the business sector. Overall, the composition of the boards and the appointment system create a risk of political interference (while, paradoxically, there is limited accountability to the political oversight body, the Latvian Port, Transit and Logistics Council) and do not guarantee the independence of board members, which weakens the board’s ability to act as an effective supervision authority. The port governance model developed in Latvia is a system which creates risks of both political interference and political domination over daily port management and decisions made for assigned lease and service contracts. Similar issues are seen in KSSA port governance, where the enterprise is under the direct control of the Ministry of Transport and Communications of the Republic of Lithuania, and the state and municipality representatives are nominated directly from their supervisors. Thus, in alignment with clear corporate governance principles, it would be advisable for board members to be elected in an open process, where professionalism, industry experience and independence would stand as core elements for any representative appointed. The Tallinn Port Authority has made substantial progress towards the implementation of good corporate governance principles, though there is still room for improvement, as the supervisory board consists of six representatives of the Estonian Ministries of Finance and of Transport and Communication; thus, there is direct nomination from government-controlled ministries, which are controlled by politically elected persons. In order to increase transparency within this process, it would be advisable to organize a supervisory board nomination process through the defined criteria for board members and through an open board member election process, not direct nomination from government ministries. Thus, if the state feels that it needs to be represented within the supervisory board, it would be possible to adjust criteria for one or two supervisory board nominations for government-affiliated experience and also nominate a state representative for the audit committee, while the criteria of industry experience, professionalism and independence should stand above any short-term political needs. By applying such a methodology, the Tallinn Port Authority’s supervisory board member election process would be the most advanced in the region, and eventually this would add value through increased port competitiveness and greater returns to shareholders.
Port governance and its efficiency and effectiveness is widely measured using key performance indicators (KPIs), which are a critical tool for port management and for authorities in performing their oversight role. The government and municipalities assign objectives to ports as part of their overall strategy, which port management then needs to implement. The main tools used worldwide for the measurement of these objectives are KPIs. In order to measure the impact of governance on the performance of a port authority as an undertaking, a comparison of the evolution of output and revenue, profitability and productive efficiency has been made. In this study, the methodology of Bilodeau et al. (2006) is used, which specifies that, in addition to the formal status change, corporatisation almost always involves a portfolio of other changes, such as narrower task domains, explicit performance measures and targets, a greater focus on the chief executive to deliver on targets and greater discretion to manage budgets and employees. To assess changes in organisational behaviour and the performance of corporatised government agencies, Bilodeau et al. (2006) have developed a series of hypotheses that are translated into performance indicators.

Port management and ownership structures vary widely among countries, ranging from fully state-owned port authorities in Tallinn (Estonia) and Klaipeda (Lithuania) to port authorities established by the relevant municipality’s decree and jointly governed by the municipality and state representatives in Ventspils and Riga (Latvia). The port authorities researched here are proprietary-type organizations; in addition to building, maintaining, and managing port facilities, including navigation channels, breakwaters, quay walls and other basic facilities, the port authorities formulate policies for basic development plans with consideration of the development of the inland regions. The port’s functional facilities are leased to the private sector under the management of the port authority, and actual operations – port transport, storage, transport on land, etc. – are entrusted to the private sector in accordance with the relevant laws and regulations. Port authorities levy charges in the form of port dues and fees for use of port facilities and services provided. These fees are determined on a cost-accounting basis and fixed by the port authorities in regulations. Port dues are levied on all vessels in exchange for the use of the port as a whole; the port authorities levy these dues in accordance with enacted law. Port dues may be calculated and assessed based on the expenses necessary for managing the water area, the port’s land facilities, and port development facilities. Port dues vary both among the different Baltic States and among ports within a state.

Bilodeau et al. (2006) measure the impact of port management at the level of the port authority itself, and if corporatisation decreases political control without significantly increasing market controls, it might, in the absence of regulatory oversight, lead to worse performance. Reforming port management should not be a goal in itself. The ultimate aim should be to contribute to the competitiveness of the port (Verhoeven, 2015). Goss (1990) stated that the economic function of a seaport is to provide benefits to the original producers of the exports and the ultimate consumers of the imports passing through it. This definition of the port product rightly implies that a port is an element in a wider logistics chain (Suykens and Van de Voorde, 1998). Goss further holds that improving the economic efficiency of a port will enhance economic welfare by increasing the producer surplus of the originators of the goods exported and the consumer surplus for the final consumers of the goods imported. This means that the contribution of a port authority exists in creating an environment in which (a) the port remains competitive, (b) the user
has to pay “acceptable” prices (compared to competing ports) and (c) the overall benefits for society are maximised. The benefit of the quality improvement is the increase in user satisfaction with the port, which consists of the increase in total revenue for the port authority and other providers of the port product and the increase in consumer surplus. The quality of the port product itself will not fully explain the competitiveness of the port; as ports are part of a wider logistics chain, there are other elements which determine competitiveness on which the port authority has no or only very limited influence, e.g. geographical location, proximity and connectivity to cargo generating hinterlands, structural changes in markets, etc. Reducing the general costs of moving cargo or passengers through the port is therefore but one element that will in the end determine the competitiveness of a port. Through governance, a port authority can seek to maximise its influence on general costs that influence the quality of the port product.

Measuring the impact of port authority governance is a challenging task, given that several other internal and external factors influence the competitiveness of a port. To measure the impact of governance on the performance of port authorities, we compare the evolution of output and revenue, profitability and productive efficiency, using the previously discussed Bilodeau et al. (2006) methodology. Corporatised public agencies may be expected to seek an increase in output and revenue. As long as these are not related to input or costs, output and revenue tell us in fact very little about actual performance improvement. But both indicators have a high perceptive value towards principals and stakeholders. Improvement of output and revenue is often perceived as proof of more business-like behaviour, widely quoted in annual reports and other publications (Bilodeau et al., 2006). Taking into account port authorities’ diverse functions, it is difficult to identify one single output indicator for a port authority. Most port authorities appear to measure their output “successes” by the volume of cargo or passengers moving through the port. Attributing growth in cargo volume to the performance of a landlord port authority would first of all assume that the port authority has persuasive powers to influence the performance of terminal operators and service providers and that it is, by itself or in cooperation with the port community, able to attract more business to the port as such. Figure 1 shows the evolution of cargo volumes handled at the Baltic States’ TEN-T ports, demonstrating that the evolution of total volumes is to a large extent influenced by two tendencies; the ports of Ventspils and Tallinn have a rather negative cargo turnover tendency – the total volumes are declining on a year-on-year basis – whereas in the last decade the ports of Klaipeda and Riga have seen almost double-digit growth, which was powered by the increase in both liquid (oil and oil products) and bulk (coal) cargo.
The highest growth during the ten-year period took place in Klaipeda, from 23 million tonnes of cargo in 2006 to 40 million in 2016, which consisted primarily of liquid bulk (both crude oil and oil products), but also of dry bulk (mostly coal). Regarding the other ports, volumes grew considerably in Riga, from 25 million tonnes in 2006 to 37 million tonnes in 2016 on account of dry bulk (coal, fertilisers, grain, gritstone) and liquid bulk (oil products). In Tallinn, cargo volumes decreased mainly on account of liquid bulk, and in Ventspils, they decreased mainly on account of dry bulk (coal) and liquid bulk (oil products). Developments across the ports in recent years have come mainly through changes in dry and liquid bulk. Containerised cargo hasn’t been of major importance for any ports, as on the eastern coast of the Baltic Sea major container volumes are handled through the largest container ports of St. Petersburg and Gdansk. The ports of Tallinn and Ventspils have experienced significant cargo volume shifts, as in 2006 the port of Ventspils handled 28 million tonnes, compared to 18 million in 2016, while Tallinn handled 41 million tonnes in 2006 and only 20 million in 2016. In summary, the biggest effect on the volumes at ports came from liquid bulk, and also from dry bulk for several ports. Container volumes grew or remained the same at all ports. The ports of Primorsk and Ust-Luga, the largest ports of the region, are the main competitors for all four of the Baltic States’ TEN-T seaports, and are specialised in liquid bulk – oil and oil products – and coal; the growing volume tendency for both of these ports is explained by major Russian-origin cargo shifts to and from these ports.

The figure shown above offers a good view of Baltic ports’ historical achievements. Meanwhile, there is another angle; from the governance perspective, the port of Tallinn, which ranks in the top position of the World Bank’s Logistics Performance Index (LPI) and in the EU transport scoreboard, holds one of the last positions in the annual cargo turnover rankings of Baltic States’ ports, which might lead us to a false conclusion on the port’s governance. One should take into account the considerable governance and management efforts the port of Tallinn has made towards corporatization: it has established an independent professional board, elected a supervisory board, nominated an audit committee and transformed the port authority from a municipal office to a state-
owned company which was also listed on the Tallinn Stock Exchange. This is just one single element of the total logistics chain and proves that ports are more than piers; it is the entire logistics chain which is crucial for port users in choosing a port for their cargo operations. Meanwhile, considering merely cargo turnover and a port’s ranking according to its achievements could lead to poor decisions on the part of policymakers; in fact, the truth lies not in millions of tonnes moved, but in value-added activities and in cargo of greater market value, which is afterwards reflected in port authorities’ real operating income. A port authority should be treated as a business entity and managed like any other private company in a market; it should cancel all public functions and transfer these to relevant state or municipality entities, as has been done in the port of Rotterdam, where the port authority used to be a small department at the municipality level and today is an international corporation which manages ports on a global scale, including Oman, Brazil and several European countries.

The revenue collected by a port authority may be more directly attributable to its own performance, although revenue from port dues in particular will also be influenced by overall evolution in cargo volume and the number and size of ships calling at the port, elements which are themselves influenced by trade and other factors. Next to revenue from port dues, revenue from land leasing to terminal operators, industrial companies and passenger fees forms the main source of revenue for the Baltic States’ major port authorities. Figure 2 shows the evolution of port authorities’ total operating income. In 2015, the Tallinn Port Authority’s turnover in cargo volumes reached 22.43 million tonnes, while the Freeport of Ventspils managed 22.53 million tonnes, almost exactly the same amount; in fact, both ports have experienced the same cargo volume decline tendencies throughout the analysed period, but the ports’ operating income reflects a very different situation. The port of Tallinn’s revenue exceeds twice the revenue of the port of Riga or Klaipeda, despite the fact that these ports’ cargo turnover is two times the size of Tallinn’s. The Freeport of Ventspils managed in 2015 to achieve exactly the same cargo turnover results as the Tallinn Port Authority, yet the latter’s income is 4.3 times greater for the year 2015 and 5.6 times greater for the year 2016. In 2016, port of Tallinn cargo flow decreased...
by 10 percent, the number of passengers increased by 4 percent, total revenue amounted to EUR 111 million and operating profit amounted to EUR 49 million, which is 11 percent more than a year earlier, and return on assets grew from 7.8 percent to 8.2 percent year-on-year (POT, 2016). Port of Tallinn revenue was also affected by cargo flow; the volume of containerised goods, ro-ro, dry bulk goods and mixed cargo increased, whereas the biggest cargo group – liquid bulk – decreased. The port of Tallinn is one of the ports that lost the most volume within the last decade, yet it is also the port that has managed to generate the most income compared to other major seaports of the Baltic States. According to Bilodeau et al. (2006), port authorities are demanding greater operating income results, which can be seen in Figure 2, whereas port authorities tend to not only increase their market share but also their operating revenue results. The port of Tallinn exhibits the greatest growth in this respect, as discussed above; meanwhile, the port authorities of Riga and Klaipeda deliver very similar operating revenue results: in 2015, the Riga Port Authority published 57.7 million euro, compared to Klaipeda’s 54.5 million euro, with a cargo turnover of 40.05 million tonnes for Riga and 38.51 million tonnes for Klaipeda. The Freeport of Ventspils generates the least amount of income: 21.6 million euro in 2015, with a cargo turnover of 22.53 million tonnes. The operating income results for the year 2011 for the port authorities of Klaipeda and Ventspils were not available and are therefore not included in Figure 2.

Port authorities’ operating efficiency is calculated by dividing operating income by yearly cargo turnover, which reflects the value in euros of each tonne shipped through the port, as shown in Figure 3.

![Figure 3. Port authorities’ operating efficiency, per tonne moved](image)

**Source:** Annual reports of the corresponding port authorities, the author’s research

The Freeport of Ventspils reports the lowest operating efficiency results of the researched authorities, while the Tallinn Port Authority is the most efficient, followed by Riga and Klaipeda. For instance, the efficiency ratio of the biggest European seaport, the Rotterdam Port Authority, ranges from 3.3 to 3.5 euros per tonne moved (POR, 2012; POR, 2013; POR, 2014; POR 2015) through its port, which is a solid figure; still, this lags behind the achievements of the Tallinn Port Authority. The author will explain the reasons for this in the following paragraph (Table 1). The ports of Riga and Klaipeda operate with similar
cargo turnover and revenue figures, and both ports rely on solid bulk and liquid cargo, as does Ventspils, but the Ventspils results are somehow surprising, as the port operates with almost the same cargo types as Riga and Klaipeda, yet the ability of the port authority to collect corresponding revenues raises the question of port authorities’ efficient management and ability to finance development projects in the near future. The efficiency figure in the range of 1.5 euro per tonne moved through the port is neither good nor bad; this reflects the ports’ actual cargo breakdown. Both ports, Klaipeda and Riga, rely on transit cargo, and the business model is very simple: ports receive cargo volumes and immediately transport these amounts further; only the liquid cargo terminal operators have the value-added activity of storing some amounts of oil and oil products. In order to increase port authorities’ revenues, cargo with greater market value should be attracted. Any extra operation with cargo within the port area would be highly beneficial, and cancellation of any duties which are not port authorities’ core business should be evaluated; for instance, the port authority of Riga is financing buoys’ and beacons’ setup, maintenance and operating expenses, which is a government responsibility, not the port authority’s business, and, as discussed before, containerized and general cargoes typically have the highest VAL potential and GLS and LCIS have the best opportunity to serve these cargoes. Therefore, logistics and integrated services along with the logistics chain should be of paramount importance for port authorities in facilitating the increase of their revenue and operating efficiency figures.

The net profit of the Baltic States’ major port authorities differs from states and within the state. The group is led by the Tallinn Port Authority, which reported a net profit of 37.53 million EUR in 2015 and 49 million EUR in 2016. Taking into account the significant investments the port authority is putting into infrastructure, the net profit ratio from the total revenue of 111 million EUR in 2016 represents the port authority’s heavy investments in its assets. The Klaipeda State Seaport Authority has also reported significant net profit results: 24.93 million EUR for the year 2015, with total operating revenue of 54.5 million EUR, which indicates that the port authority is rather cautious about investment initiatives or raising its net portfolio to raise capital for bold future investment projects. Figure 4 compares the net profit results of the Baltic States’ major port authorities.

![Figure 4. Net profit of the Baltic States major port authorities](image-url)

Source: Annual reports of the corresponding port authorities, the author’s research
The Riga Port Authority has reported moderate average net profit results in the range of 9.16 million EUR for the years 2013 to 2015, which is a rather marginal result, taking into account that in the years 2013 to 2015 the port was operating with very good cargo turnover results; financial statements show that in 2015 the port authority’s operating revenue reached 57.7 million EUR, administrative expenses reached 10.14 million EUR and costs of services reached 35.62 million EUR, with total liabilities of 148.62 million EUR as well as investments in investment property of 99.08 million EUR in 2015 alone. Taking into account that the Riga Port Authority’s reported yearly cargo turnover is similar to the Klaipeda State Seaport Authority’s results, while there is an average net profit of 9.16 million EUR compared to Klaipeda’s average of 23.64 million EUR in the years 2013 to 2015, the Riga Port Authority’s considerable weakness in the port’s governance, management and financial planning becomes evident. Ventspils Freeport’s net profit results of 6.26 million EUR in the years 2013 to 2015 can be considered as very low, taking into account that Ventspils port is a deep sea port with the considerable advantage – compared to any other seaports of the Baltic States – of a direct oil and oil product pipeline connection to Russia through the territory of Belorussia. According to a SWOT analysis, today the pipeline can be considered as an opportunity, not a strength of the port, as the pipeline hasn’t been used for oil and oil product shipments for years, and if slated to be opened any time soon, considerable investments would be needed in maintenance work and pumping buffer oil into the pipeline system. Ventspils port was a major oil and oil product transit point during Soviet times and also after Latvia restored its independence, until March 2003, when shipments of oil and oil products through the pipeline were closed. Port authorities’ operating and financial results are the direct reflection of ports’ management and governance; thus, there is still room for improvement in Latvia. In recent years, port authorities of the Baltic States have invested considerable funds in superstructure development, maintenance work, dredging work and technology; thus, the port authorities do hold a significant investment and liabilities portfolio. Therefore the financial performance of a port authority is of major importance, to cover investments already made and plan new projects in the future.

The Tallinn Port Authority has reported significant net profit and operating efficiency results, shown in Figures 3 and 4; therefore, there is a need for an additional analysis of financial performance phenomena and what the factor is behind such diverse performance results, taking into account that from the perspective of cargo handling volumes, the Tallinn Port Authority has reported very moderate results, slightly more than the achievements of Ventspils Freeport.
Table 1

<table>
<thead>
<tr>
<th>Year</th>
<th>Total cargo turnover in mill. tonnes</th>
<th>Number of passengers in mill.</th>
<th>EBITDA in mill. EUR</th>
<th>Net profit, in mill. EUR</th>
<th>Operating income, passengers in % of total</th>
<th>Operating income from passengers, in mill. EUR</th>
<th>Operating income without passengers, in mill. EUR</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>36.65</td>
<td>7.92</td>
<td>86.8</td>
<td>41.74</td>
<td>34%</td>
<td>29.51</td>
<td>57.29</td>
</tr>
<tr>
<td>2011</td>
<td>36.47</td>
<td>8.48</td>
<td>89.2</td>
<td>36.13</td>
<td>35%</td>
<td>31.22</td>
<td>57.98</td>
</tr>
<tr>
<td>2012</td>
<td>29.48</td>
<td>8.84</td>
<td>88.6</td>
<td>33.63</td>
<td>38%</td>
<td>33.67</td>
<td>54.93</td>
</tr>
<tr>
<td>2013</td>
<td>28.25</td>
<td>9.24</td>
<td>102.2</td>
<td>43.07</td>
<td>36%</td>
<td>36.79</td>
<td>65.41</td>
</tr>
<tr>
<td>2014</td>
<td>28.32</td>
<td>9.57</td>
<td>110.8</td>
<td>36.05</td>
<td>35%</td>
<td>38.78</td>
<td>72.02</td>
</tr>
<tr>
<td>2015</td>
<td>22.43</td>
<td>9.79</td>
<td>93.8</td>
<td>37.53</td>
<td>42%</td>
<td>39.40</td>
<td>54.40</td>
</tr>
</tbody>
</table>

*Source: Annual reports of the corresponding port authority, the author’s research*

Table 1 analyses the financial and operational performance results of the Tallinn Port Authority. Prior to reviewing this, some introductory remarks on the port’s management and governance will be useful. AS Tallinn Sadam (Tallinn Port Authority) was founded in 1992 and in 1996 it was reorganised into a limited company defined under Estonian legislation (AS). The core business of AS Tallinna Sadam is rendering port services in the capacity of a landlord port whose tasks involve managing and developing infrastructure as well as organising navigation in the port basin. The parent holds five harbours: the Old City Harbour in the centre of Tallinn, together with the Old City Marina for small vessels (opened in 2010); the cargo harbour in Paljassaare; Estonia's largest cargo harbour in Muuga; the cargo and passenger harbour in Paldiski (Paldiski South Harbour); and the harbour in Saaremaa, built mostly to receive cruise liners. Cargo flows at the ports are handled by cargo operators who own the buildings, structures and equipment necessary for cargo handling. However, the buildings and structures necessary for servicing passengers belong to AS Tallinna Sadam. The sole shareholder of AS Tallinna Sadam is the Republic of Estonia. Like any other limited company, AS Tallinna Sadam operates pursuant to its articles of association, the Commercial Code and other laws and regulations of the Republic of Estonia. At the end of 2012, AS Tallinna Sadam purchased a multifunctional icebreaking vessel, and since the beginning of 2013 the icebreaker Botnica has been used for rendering icebreaking services to the state of Estonia for Estonian ports in the Gulf of Finland under a 10-year contract. Outside icebreaking season, the multifunctional icebreaker is leased out for various maritime support operations (POT, 2013).

One of the reasons for the financial performance success of AS Tallina Sadam is the development of the passenger shipping route Tallinn-Helsinki, which today is one of the world’s busiest passenger traffic shipping lines; in addition to the passenger ship traffic with Finland, AS Tallinna Sadam also regularly services passenger ship traffic between Estonia and Sweden. But even aside from the fact that the Tallinn Port Authority is the leader among the Baltic eastern coast ports in passenger traffic volumes, the port authority
has managed to perform extremely well; for instance, from the years 2012 to 2015, it achieved a total operating income of 395.4 million EUR or 98.85 million EUR on average, and within those years the port handled 108.48 million tonnes of cargo or 27.12 million tonnes of cargo on average. The operating income without passengers amounted to 246.76 million EUR or 61.72 million EUR on average (Table 1), and net profit amounted to 150.28 million EUR or 37.57 million EUR on average from 2012 to 2015. The port of Riga achieved the record high cargo handling volume of 152.65 million tonnes, which is 44.17 million tonnes more than Tallinn; at the same time, net profit amounted to 41.14 million EUR, which is 109.14 million EUR less than Tallinn (Table 2). Table 2 compares the port authorities’ average performance results for a four-year period, from 2012 to 2015.

Table 2
Average operational and financial performance results analysis for the period of 2012-2015

<table>
<thead>
<tr>
<th></th>
<th>Tallinn</th>
<th>Klaipeda</th>
<th>Riga</th>
<th>Ventspils</th>
</tr>
</thead>
<tbody>
<tr>
<td>Handled volumes of cargo, in millions of tonnes</td>
<td>108.48</td>
<td>143.56</td>
<td>152.65</td>
<td>107.85</td>
</tr>
<tr>
<td>EBITDA, in millions of euro</td>
<td>395.4</td>
<td>183.48</td>
<td>211.5</td>
<td>90.9</td>
</tr>
<tr>
<td>Net profit, in millions of euro</td>
<td>150.28</td>
<td>90.63</td>
<td>41.14</td>
<td>24.74</td>
</tr>
<tr>
<td>Revenue-to-expenditure ratio</td>
<td>1.61</td>
<td>1.97</td>
<td>1.24</td>
<td>1.37</td>
</tr>
<tr>
<td>Revenue-to-employee ratio, in millions of euro</td>
<td>1.49</td>
<td>0.65</td>
<td>0.52</td>
<td>0.33</td>
</tr>
<tr>
<td>Net profit per employee, in millions of euro</td>
<td>0.56</td>
<td>0.32</td>
<td>0.10</td>
<td>0.09</td>
</tr>
<tr>
<td>Average turnaround time for ocean-going vessels, in hours</td>
<td>3.7</td>
<td>3.8</td>
<td>4.4</td>
<td>3.5</td>
</tr>
<tr>
<td>Average turnaround time for container vessels, in days</td>
<td>1.2</td>
<td>1.0</td>
<td>1.1</td>
<td>1.2</td>
</tr>
<tr>
<td>Average operating margin</td>
<td>3.64</td>
<td>1.27</td>
<td>1.38</td>
<td>0.84</td>
</tr>
<tr>
<td>Average profit margin</td>
<td>2.63</td>
<td>2.02</td>
<td>5.14</td>
<td>3.67</td>
</tr>
<tr>
<td>Number of dock strikers’ days</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

Source: Annual reports of the corresponding port authorities, Lloyd’s List Intelligence, the author’s research

The Tallinn Port Authority is a financial leader among the Baltic States’ major port authorities; within the researched period it handled similar amounts of cargo, 108.48 million tonnes of cargo compared to Ventspils Freeport’s 107.85 million tonnes, but at the same time the Tallinn Port Authority achieved a total operating income of 395.4 million EUR, while Ventspils achieved 90.9 million EUR. Total net profit was 150.28 million EUR for Tallinn and 24.74 million EUR for Ventspils Freeport, which reflects considerable financial performance differences between the port authorities. Table 1 offers a good view of Tallinn Port Authority’s operating income without passengers, which in the researched period of 2012 to 2015 amounts to 246.76 million EUR, while competitor Ventspils, with exactly the same cargo throughput amounts, achieved 90.9 million EUR.
and Riga, with 50% more cargo volumes than Tallinn, achieved 211.5 million EUR. The Klaipeda State Seaport Authority (KSSA) is the second-best performer among Baltic States’ seaports, not in cargo volumes, as the volumes compared to Riga are similar, but from a financial perspective; KSSA’s net profit compared to Riga was 49.49 million EUR greater, while it handled less cargo than Riga and operating income was also lower compared to Riga’s results. In the researched period, the Riga Port Authority delivered the highest cargo turnover volume: 152.65 million tonnes, with a total operating income of 211.5 million euro compared to KSSA’s 183.48 million euros and total handled volume of 143.56 million tonnes of cargo. The Riga Port Authority handled and earned more than KSSA did while lagging in net profit results: 41.14 million euro respectively for the researched period compared to KSSA’s 90.63 million euro.

The revenue-to-expenditure ratio compares total revenue to operational expenditure, which, from the productive efficiency perspective, is considered as the cost efficiency factor, which compares expenditure to output. The Klaipeda Port Authority has the highest cost efficiency factor of 1.97 on average, followed by Tallinn with 1.61, Ventspils with 1.37 and Riga with 1.24.

Productive efficiency has two components: technical efficiency, which compares output to input, and cost efficiency, which compares expenditure to output (Lypczinski et al., 2009). In this paragraph, the author will focus on technical efficiency, as cost efficiency was discussed in previous paragraphs. Port authorities traditionally have three input factors, their employees, the port land they own or administer and rent out to third parties, and the investments they make; in this paragraph the limits will be set to compare revenue to employees. The revenue-to-employee ratio is measured with the total revenue within the given period and the total number of people employed at the end of the year. In the researched port authorities, the corresponding employee figures for the given period of time were as follows: Tallinn, 265; Ventspils, 269; Riga, 405; and Klaipeda, 280 employees. The highest revenue-to-employee ratio, in millions of euro, was recorded at Tallinn Port Authority, leading the pack with an impressive 1.49 million, followed by Klaipeda with 0.65 million, Riga with 0.52 million and Ventspils with 0.33 million euro. De Langen and Heij (2014) also compare net profit per employee, where Tallinn leads with 0.56 million euro per employee net profit, followed by Klaipeda with 0.32, Riga with 0.10 and Ventspils with 0.09 million euro.

Average turnaround time for ocean-going vessels is measured for ships with a minimum length of 150 metres, while the average sailing time is measured in hours from sea to berth and vice versa. The average turnaround time (TAT) indicates the average time vessels need to access their destination inside the port (the berth) and return to sea and excludes the actual time spent at the berth. Ventspils has the best TAT of 3.5 hours, followed by Tallinn with 3.7 hours and Klaipeda with 3.8 hours, which is explained by the fact that compared to other seaports, Ventspils is specified as an open deep sea port, without any restrictions for approaching channel or mooring facilities. Ventspils possesses very clean and easy access from the Baltic Sea compared to Riga, which has the longest TAT of 4.4 hours, a result of the long approaching channel and the limited approaching speed and manoeuvrability.

Average turnaround time for container vessels is calculated in days, measuring the average date of departure and date of arrival among all container vessels calling at the port within one month of navigation, expressed in number of days per call. Average turnaround
time for container vessels includes the time spent at berth, which is contrary to standard TAT measurement. The final decisions in choosing a container terminal are based on the cost-revenue relationships of the possible permutations of vessel deployments and cargo generation of port calls, but time is a very important constraint (Notteboom, 2006). The data were drawn from Lloyd’s List Intelligence (LLI), which is considered to be among the most comprehensive databases of maritime information related to ports, companies and vessels. The database records over four million movements made by the world’s merchant fleet every year. LLI also reveals that the average vessel stay is 25.54 hours, which indicates a fairly high level of performance overall, and confirms the remarkable improvements in ship turnaround times achieved as a result of containerisation. Average turnaround time for container vessels in the Baltic States is 1.125 days, which, expressed in hours, amounts to 27 hours. The most efficient container handling is in the ports of Klaipeda and Riga, followed by Tallinn and Ventspils.

Average operating margin is calculated as the operating income divided by the net volume during a period. Tallinn Port Authority has the greatest average operating margin of 3.64, followed by Riga with 1.38, Klaipeda with 1.27 and Ventspils with 0.84. The average profit margin of the researched port authorities is calculated as the net income divided by the profit. Riga has the greatest profit margin with 5.14 points, followed by Ventspils with 3.67, Tallinn with 2.63 and Klaipeda with 2.02.

In this research, following the Bilodeau et al. (2006) methodology, the impact of port governance on ports’ efficiency was assessed, measuring ports’ performance from different perspectives and for different indicators, including port authorities’ financial performance and operational achievements with a set of different KPIs. The results have been outlined in a logical manner, comparing all four Baltic States’ TEN-T ports for a set of KPIs to measure and indicate the most and the least efficient port authorities within the region.

CONCLUSIONS
The following conclusions can be made from the research:

1. Port authorities governed according to good corporate governance principles report greater port performance results and perform better financially than those that do not follow the same objectives.

2. Ports governed through a landlord function are influenced by three factors: competitive pressure to invest in infrastructure, financial pressure and the competition for land use.

3. This research outlined the differences among port authorities’ governance models and board election and selection criteria. In all four major seaports of the Baltic States, the board election and selection criteria are solely managed by represented ministries and controlled by corresponding ministers (Tallinn, Klaipeda) as well as the corresponding municipality (Klaipeda) and a mix of both (Riga, Ventspils), which is considered as lack of independence of port boards due to political appointment processes, emphasis on the political accountability of each individual to its appointing authority, and uneven consideration of professional criteria in appointments.

4. The research also outlined that the port of Tallinn, compared to the other three ports of the Baltic States, has moved towards greater independence and financial
autonomy and is directly involved with its impact within the logistics chain. The Tallinn Port Authority is also governed according to good corporate governance guidelines and possesses the most transparent port governance and management model, with a very simple management hierarchy, supervisory board and audit committee.

5. The Baltic States’ TEN-T ports focus their services plans on servicing East–West transit flows and are operated as landlord ports. The ports are managed by port authorities, who have the right to rent out their land, piers and relevant infrastructure for a long-term period, and most of the revenues are collected from port dues and fees for the services the port authority offers. The port authorities’ income flows come from land rents, port dues and other services; a port authority that has more land in its trust gains financially by accommodating more companies and maximising its rent.

RECOMMENDATIONS

The theoretical and practical results obtained in this research contributed to establishing the following recommendations for policymakers, port management bodies, executive managers, regulators, port users and service providers, as well as scholars and researchers:

1. Introducing good corporate governance, financial transparency and autonomy of maritime port authorities will improve the quality and efficiency of the service provided to port users and contribute to a climate that is more favourable to investment in ports.

2. The governments of the Baltic States should amend the relevant bylaws to clarify the required qualifications for board members, which should encourage authorities to ensure that selected board members have adequate experience and skills to fulfil their mandate. The bylaws should provide a board member’s profile, including general attributes, for example, independence, accountability, integrity, leadership and specific professional qualifications for some of the board members such as port economics or port management. The governments should introduce term limits for board members, which should include a standard period of tenure as well as a maximum number of terms.

3. The Government of Latvia should consider changing the legal status of Latvian ports to public companies according to the law on public corporations. The change of legal status would not only allow for better alignment with the operations of a corporation, but also change the incentives structures for board and management members and bring port management and governance practices under the discipline of corporate law. It is strongly recommended that an oversight function be established to hold the boards of Latvian ports accountable and to carry out an annual evaluation of their performance.

4. The Government of Lithuania should revise the port board member selection and election process according to greater transparency, political independence and professional criteria. It is possible and advisable to have both state and municipality interests represented within the port authority, but it would be best to seal those interests within the port authority’s shareholding percentage and appoint a professional supervisory board and executive board to run the port.
5. The Government of Estonia should amend the relevant regulations to exclude the two ministries’ direct dominance in appointing supervisory board members; it would be better to have a professional supervisory board without any direct political nominee.

6. The governments of the Baltic States ought to secure board independence as a vital principle and evaluate board size, as large boards enhance inefficiencies in the decision-making process.

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OVERVALUATION THEORY AND THE WAVE EFFECT IN THE 1990S US MERGER WAVE

Natalja Purina

ABSTRACT

Purpose. There is a dispute about efficiency and sustainability of acquisitions. Shleifer and Vishny (2003), in their stock market driven acquisition theory, claim that managers are rational and use mergers as arbitrage if the firm is overvalued. The aim of the current study is to test the predictions of the overvaluation theory on a sample of high technology industry M&A transactions in the 90s.

Methodology. This paper has the form of an empirical study. The author employs event study analysis, the market adjusted approach with standard parametric tests, and the Fama-French 3-factor model to explore the wealth effects for amalgamating firms in different stages of the M&A wave.

Findings. The results reveal a distinct wave effect: abnormal returns to bidders are lower in the second half of the merger wave. Bidders' performance in the early and late stages of the M&A wave follows the predictions of the overvaluation theory. Bidders exhibit particularly poor performance if the bid is announced in the late wave and the method of payment is stock. The long-run negative abnormal returns to the bidders cast out the neoclassical explanations of the wave effect and indicate market inefficiencies.

Value. The present study serves as a complementary argument in the widespread dispute about merger wave explanation theories. The outcome confirms the behavioural characteristics of merger activity, particularly stock market driven acquisition theory. Misvaluation as an integral factor of merger activity may have a detrimental effect on the efficiency of acquisitions.

Keywords: merger wave, wave effect, overvaluation theory, stock market driven acquisitions

INTRODUCTION

There is a dispute about the efficiency and sustainability of acquisitions. The author of this paper concentrates on the work of Shleifer and Vishny (2003), who claim that most merger activity is observed in periods of overall stock market overvaluation. Managers are rational and use mergers as arbitrage if the firm is misvalued. The efficiency and synergy gains of mergers are not the main factor.

In particular, the author of this study focuses on the so-called "wave effect" as defined by Floegel et al. (2005). In their work, the bidder and rival abnormal returns at the beginning of the industry merger wave were confirmed as different from those at the end of the wave. The author of this paper maintains that the wave effect is well-explained by the overvaluation theory of Shleifer and Vishny (2003) and applies this theory to empirical data on US high technology industry M&A transactions in the 90s. The aim of the study is to test the predictions of the Shleifer and Vishny (2003) stock market driven acquisition theory (hereinafter SMDA or overvaluation theory) with the help of an empirical study.

MERGER WAVES

There have been six global merger waves so far. The first and second merger waves of 1890-1905 and the 1920s in the US have been characterized as merging for monopolistic and oligopolistic reasons respectively (Stigler G. J. (1950)). The third merger wave in the 60s is known as merging for growth with the creation of conglomerates (Du
Boff and Herman (1989)). As defined by Shleifer and Vishny (1990), the next merger wave of the 80s was a result of massive restructurings in order to get rid of inefficient multi-divisional conglomerate forms of business amplified by financial innovations such as junk bonds and LBO (leveraged buyout) techniques.

The merger wave of the nineties was the biggest of all the merger waves in both value and number of transactions. The wave peaked in the year 2000, with the value of MandA transactions amounting to $1.8 trillion compared to the previous peak of $324bn in 1989. (Sudarsanam S. (2003)). The proportion of deals where only stock was used as a method of payment was the highest in the preceding three decades (Andrade et al. (2001)). The wave was characterised by "extensive overpayment, mega-deals, overvaluation and significant value destruction" (Alexandridis et al. (2011)). Merger activity in the high technology industry was especially notorious in this respect. One of the largest deals in the history of MandAs was the AOL acquisition of Time Warner in 2001, worth $165bn and financed with stock. The aftermath shows that nearly $200bn in market value was destroyed in the months following the announcement of the bid (Sudarsanam S. (2003)).

The sixth merger wave started in the US in 2003 and reached its peak in 2007 with the volume of mergers totalling around $1.53 trillion (Ma H. (2016)). Alexandridis et al. (2011) suggest that the bidders were less overvalued and the source of financing was merely cash as a consequence of abundant liquidity available on the market. The merger wave subsided in late 2007. Some analysts suggest that 2015 and 2016 exhibit a global mega-wave caused by quantitative easing policies in the EU and the US. The wave allegedly is larger than ever, with $4.7 trillion merger deals announced worldwide. The US peaked at 1.55 trillion for 12 months ending in January 2016 (Ma H. (2016)).

Owen S. (2006) argues that a unique theory explaining all the merger waves does not exist. Rather, different theories are applicable to a certain wave. While there are always some motivating factors that remain important across all the merger waves, (regulation, taxation, competition and cost of liquidity, financial innovation, etc.) there are also particular factors that influence one wave and do not apply to another. The author of this paper agrees with this view.

The 90s merger wave and dot com boom

The specifics of the 90s merger wave led to the emergence of the overvaluation theory of Shleifer and Vishny.

The fifth merger wave in the US occurred in the following extremely impulsive conditions:

- **Stock markets were overheated:** Ross (1999) argues that the stock market boom of the late 1990s was primarily a technology boom. The NASDAQ Index went up 1456 percent from October 1990 to March 2000. In comparison, SandP grew only 432 percent from October 1990 till the peak of September 2000 (as reported by Tseng (undated)).

- **High technology stocks were overvalued:** Crutchley et al. (2005), Hirchley (2003), and Kaplan (2002) conclude that investors were overestimating the values of high technology companies in the 90s. The valuations of the tech stocks were much higher than the underlying fundamental values, implying extreme growth opportunities that were hardly realistic.

- **High technology firms were merging intensively in the late 1990s:** Inkpen et al. (2000) report that the number of acquisitions in the computer and telecommunications
sector alone in the period of 1990-1999 was over 11,000 transactions, constituting 21% of all M&As in the US. Of these, one third took place in 1998 and 1999.

- **Acquirers preferred stock financing in acquisitions at the peak of the Internet bubble:** Kohers and Kohers (2004), in their sample of high technology firms merging in the 1990s, found that almost 30% were stock offers, while nearly 40% involved mixed offers of cash and stock. Inkpen et al. (2000) find that 60% of acquisitions in 1998-1999 involved partial or total stock financing.

Taking into account the characteristics of the 90s merger wave, the author of this paper maintains that the Shleifer and Vishny overvaluation theory might be a reasonable explanation for the merger wave of the 1990s.

**RESEARCH DESIGN**

Floegel et al. (2005) identify a wave effect in merger activity that manifests itself as a variation in bidder and target abnormal returns depending on the stage of the merger wave. The authors offer two main explanations for the wave effect. First, the competitive advantage edge, which suggests that bidders rationally overpay for targets in the later wave, because it is costly to lose the target to the competitor. There is also evidence in favour of the management's overconfidence explanation or hubris theory of Roll (1986). Due to the success in previous M&As deals, managers of the acquiring firms become overly optimistic about the subsequent M&As and irrationally overpay for the target. However, the author of the present paper focuses on another finding of Floegel which is not emphasized: the average Tobin’s q ratio (market value of a company's tangible assets to its replacement costs) of the bidders in the study was higher in the second half of the wave than in the first half of the wave. In this context, the author tries to find an alternative explanation for the wave effect which is associated with relative valuations of bidders and targets in the industry by applying the overvaluation theory (stock market driven acquisition theory).

![Figure 1. The merger wave in the sample and S&P Technology index.](image)

The sample represents the acquisitions in US High Technology industry over the period between 1994 and 2004. The figure plots the 24 months number of acquisitions. The S&P Technology Index data starts at March 1998 and is no longer available after January 2002.

Source: DATASREAM 10.07/06 14:57 and Thomson’s One Banker June 2006
As can be seen in Figure 1, the merger wave preceded the peak in the stock market as measured by the SandP High Technology Index. The period of higher valuations is observable in the second half of the merger wave. Hence, the valuations of high technology firms are different in different stages of the merger wave. Shleifer and Vishny (2003), in their overvaluation theory, model the effect of disparity in target and bidder relative valuations in the takeover activity. They propose that managers use their inflated stocks to acquire less overvalued targets. The basic assumption of the theory is that capital markets are inefficient. The number of acquisitions increases when stock market valuations are high.

The overvaluation theory suggests that these discrepancies of valuations across the merger wave influence firms' decisions to undertake M&As, the choice of the method of payment and the post-acquisition performance of the acquirers. The author of this paper constructs a particular research design and defines a testable hypothesis to find empirical support for this proposition.

1) Bidders that undertake acquisitions in the second half of the wave are defined as more overvalued than those announcing acquisitions in the early wave. Targets are defined as undervalued or less overvalued in the first half of the wave. This discrepancy in stock market valuations in different stages of the merger wave serves as a basis for an overvaluation explanation of the wave effect.

2) More specifically, more overvalued bidders acquire less overvalued targets in stock offers in the later wave. Hence, they suffer from greater losses in the long run as prices converge to fair values. Bidders are less overvalued in the first half of the wave; hence, price corrections are lower. In cash offers, overvaluation of the bidder is not important. What is important is undervaluation of the target. Therefore, there are higher abnormal returns to targets in cash offers and in the first half of the wave.

3) In Shleifer and Vishny (2003) stock markets are inefficient. In this respect, one of the main hypotheses tested here is the market efficiency hypothesis. For this purpose, the author carries out a long-horizon event study. The presence of abnormal performance in the long run leads to rejection of the market efficiency hypothesis and serves as indirect evidence in favour of the overvaluation theory.

4) The next aspect of the analysis is based on the proposition that acquirers tend to use their overvalued stocks to acquire less overvalued targets. Based on the assumption that overvaluation is high in the later merger wave, one of the hypotheses tested in the present paper is whether there is a preponderance of equity-financed acquisitions in the later wave.

5) According to the predictions of the overvaluation theory, long-run abnormal returns to bidders in stock offers are negative for deals in both stages of the merger wave. Moreover, as overvaluation is higher in the later wave, stock acquirers should suffer from greater losses if the bid was announced in the later wave. Hence, the wave effect for bidders should be present in stock offers but not in cash offers.

6) The only rationale for use of cash in MandA financing is undervaluation of targets. Abnormal returns to targets in cash offers should be higher than in stock offers.

If these predictions are supported by the data in the present analysis, then these results rule out the hubris theory, the competitive advantage edge and the neoclassical
explanations of the wave effect. First of all, the presence of negative abnormal returns to bidders in the long run contradicts the market efficiency and profitability gains predicted by neoclassical theories. Secondly, if M&As are not successful, there is no basis for acquirer managers to be overconfident as in the hubris theory. And finally, the competitive advantage theory, hubris theory and Q-theory are not able to explain the absence of the wave effect for bidders in cash offers. This also relates to the higher abnormal returns to targets in cash offers. These theories do not predict any difference in merger profitability concerning the methods of payment.

METHODOLOGY

The announcement effect – short event window

Short-term event studies examine the immediate reaction of capital markets upon the announcement of a bid. It is assumed that financial markets are efficient. In this respect, the market should incorporate all the information relevant to the takeover by the end of the event window.

Brown and Warner, in their broadly cited 1980 work on using daily stock returns in event studies, examine the event period of +5 to -5 days relative to day 0 (the event date). Similarly, an 11-day event window around the announcement date is defined here as the event window.

The market-adjusted approach is used to calculate short-term abnormal returns to companies involved in merger activity. The short-term abnormal returns estimation, cumulating techniques and significance testing methodology is identical to Draper and Paudyal (1999). The market-adjusted excess returns are estimated with the following formula:

\[ AR_{it} = R_{it} - R_{mt}, \]

where \( R_{it} \) is return to the i-th company on day t, calculated as \( R_{it} = \ln(P_t) - \ln(P_{t-1}) \) and \( R_{mt} \) is the market return on day t measured as the first difference of the log of the market index (S&P 500 Technology Sector index daily values downloaded from DATASTREAM).

The average abnormal return across stocks on a particular day in the event period is calculated as follows:

\[ \overline{AR}_{it} = \frac{1}{N} \sum_{t=1}^{N} AR_{it}, \]

where N is the number of deals on day t.

In the present study, the average abnormal returns are cumulated over 3, 7, and 11 days around the event day, and across six days after the announcement including day 0. Schipper and Thompson (1983) and Jarrell and Poulson (1989) show that bids may be anticipated by the market. Therefore, the average abnormal returns are cumulated over the period of day -5 to day -1 to indicate the market anticipation of the takeover announcement. The cumulative abnormal returns over the testing period are calculated with the following formula:
The statistical significance of abnormal returns was examined under the null hypothesis that the average abnormal returns (AR) and cumulated abnormal returns (CAR) in the testing period are not significantly different from zero. Standard parametric tests are used to test the significance of estimates. Assuming that abnormal returns are independent random samples drawn from a normally distributed population, the t-statistics are used for the null hypothesis test. The t-statistics for average abnormal returns (AR) are estimated as:

\[ t = \frac{\overline{AR}_t}{S(AR_t)} \]

(4),

The t-statistics for the cumulative abnormal returns are defined as:

\[ t = \frac{\sum_{t=1}^{T} \overline{AR}_t}{\sqrt{\sum_{t=1}^{T} S^2(AR_t)}} \]

(5),

where \( S(AR_t) \) is defined as:

\[ S(AR_t) = \sqrt{\sum_{j=1}^{5} \left( \overline{AR}_j - \overline{AR} \right)^2} / 10 \]

(6),

and \( \overline{AR} \) is defined as:

\[ \overline{AR} = \frac{1}{10} \sum_{t=1}^{T} \overline{AR}_t \]

(7).

If the t-statistics indicate the rejection of the null hypothesis, announcement of the merger has a significant impact on the wealth of shareholders in the short run. The magnitude and sign (negative/positive) of abnormal returns has to be evaluated in relation to the wave effect. As stated in the research design, we expect the announcement effect to have more resonance for bids in a later merger wave. Thorough investigation of abnormal returns contingent on the phase of the wave, means of payment and the role of the company in the merger (target/bidder) will be conducted in the present paper.

**Long-horizon returns to bidders**

The stock return reaction upon the announcement of a bid in the long run tells us a lot about how efficient financial markets are. Shleifer and Vishny propose that market inefficiencies serve as stimuli for merger activity. Ideally, in informationally efficient markets the stocks of the bidder should not exhibit any post-acquisition abnormal performance in the long run.

The Fama and French three-factor model, which expands the classical CAPM model by including proxies for additional priced risk factors such as size and value
premium, is used for analysis. SMB is the factor which captures the size effect and is defined as return to small minus big capitalization portfolios. The HML factor controls for value premium or excess return of high minus low book-to-market portfolios.

The Fama-French 3-factor model employed in calculating the average abnormal return for bidders is defined as follows (Khotari and Warner 2006):

$$R_{pt} - R_{ft} = \alpha_p + \beta_p (R_{mt} - R_{ft}) + s_p SMB + h_p HML + \epsilon_{pt}$$  \hspace{1cm} (8),

where $R_{pt}$ is the equally-weighted return for calendar month $T$ of firms with an event in month $T$ or in the previous $t$ months ($t = 12, 24, 36$); $R_{ft}$ is the risk-free return in month $T$, $R_{mt}$ is the market return at time $T$, SMB is the "small minus big" return on month $T$, HML is the "high minus low" return on month $T$, $\beta_p$, $s_p$, $h_p$ are the sensitivities of the portfolio to the factors; $\alpha_p$ - Jensen’s alpha is the average abnormal return of event firms over the testing period $t$.

The equally weighted returns and excess returns are calculated for each month portfolio. These time series excess returns are then regressed on the Fama-French 3 factors. The intercept provides an estimate of average monthly post-event abnormal return of sample firms over the whole testing period.

For the purpose of analysis, monthly prices for 36 months following the announcement of each bid were downloaded from the DATASTREAM and COMPUSTAT databases. The one-month US Treasury bill interest rate is a proxy for risk-free rate of return. The data on one-month US Treasury bill returns is extracted from DATASTREAM.

The market return is calculated as a monthly return on the value-weighted SandP 1500 Super Composite index. This broad index covers over 85% of US stock market capitalization and includes large, small and medium-size companies. The SandP High Technology Index cannot be used as a market index in the present long-horizon study. This index ceased to exist in January 2002, while the testing period of the present long-horizon study covers the period up to June 2004.

The SandP 500 Composite index is used as a proxy for large companies and the SandP 600 Small Cap index is a proxy for small companies. The SandP 500 Composite index represents 500 companies with the highest capitalization, while the SandP 600 consists of the small capitalization companies that represent about 3% of the US equities market. Hence, the SMB factor in the Fama-French model is calculated as a difference in returns on the SandP 500 portfolio and SandP 600 Small Caps portfolio. The proxy for "high" in the HML factor is the SandP 500 CITIGROUP Value index, while SandP1000 CITIGROUP Growth is a proxy for "low". The "high minus low" factor is calculated as a difference in returns on the above-stated indices.

The estimated alpha is a direct estimate of average abnormal return to bidders over the whole testing period. The t-test statistics are formed from the coefficient standard error of the regression. The average abnormal returns to each bidder are calculated using the event period. The Fama-French 3-factor model is used to estimate the average abnormal returns as follows:

$$R_{jt} - R_{ft} = \alpha_j + \beta_j (R_{mt} - R_{ft}) + s_j SMB + h_j HML + \epsilon_{pt}$$  \hspace{1cm} (9),
where \( R_{jt} \) is the return to the bidder \( j \) in month \( t \); \( R_{R} \) is the risk-free return in month \( t \), \( R_{m} \) is the market return at time \( t \), SMB is the "small minus big" return in month \( t \), HML is the "high minus low" return in month \( t \), \( \beta_j, s_j, h_j \) are the sensitivities of the bidder \( j \) return to the factors; \( \alpha_j \) - is the average abnormal return of the bidder \( j \) over the testing period of 36 months.

Identically to the calendar time analysis, estimated standard errors from the regression are used to calculate the t-statistics for significance of the coefficients. If the t-statistics indicate significant abnormal returns, capital markets are inefficient and do not incorporate all the information relevant to the announcement of acquisition in the short term.

**DATA ANALYSIS AND RESULTS**

**Data analysis**

The Thomson One Banker database on mergers and acquisitions was used to obtain a sample of US high-tech takeovers within the investigated period of 1994-2004. The primary sample consisted of 1380 bids announced by 825 bidders (overall over the period, each bidder announced on average 1.67 bids).

A potential wave was identified using the methodology employed in previous similar studies, namely Mitchell and Mulherin (1996), Harford (2005), and Floegel (2005). This procedure shows a maximum concentration of 482 bids in the period of April 1999 to March 2001 with three spikes in merger activity: 30 bids a month in the 11th, 13th and 17th month after the potential beginning of the wave in April 1999 (Figure 2).

![Figure 2. The merger activity in the sample, monthly number of deals](image)

The first 12 months are defined as an early wave and months 13-24 are defined as a late wave. The peaks of merger activity coincide with the highest stock market valuations
of the SandP High Technology index (Figure 1). The mean number of deals within the wave is more than twice the 10-year average, with 13 deals on average per month in the first half of the wave and 10.1 deals in the later wave. The maximum of 25 deals a month is observed on the twelfth month of the merger wave, which may be considered the peak of takeover activity. There was a sharp decline in the number of mergers in the following two months with 11 mergers per month. The takeover activity reached only a maximum of 16 in the second semi-wave. The deals appear to be much larger within the wave with an average deal value of more than 1,000 million dollars in the first half of the wave. In comparison, the average deal value for the whole 10-year period was 818 million dollars. The bidders were on average bigger than the targets, with the average market value of the bidder totalling more than 27,000 million dollars for the whole period of 10 years and more than 47,000 million dollars in the second half of the wave. The targets were smaller with an average market value of only 856.06 million for the period of 1994-2004.

Concerning the method of payment offered to the target, we differentiate in the given sample between three categories. A deal is attributed to the "stock" group if only common share swaps were used to finance the acquisition. The "cash" category includes deals financed purely by cash and defined by the Thomson One Banker database as CASH and CASHONLY. The third group consists of mergers using a mixed method of consideration such as a mixture of cash, common shares, stock, options, the assumption of targets’ liabilities, or earnouts, but not purely cash or stock.

**Testable hypotheses and results**

In line with the basic assumption of the SMDA theory that capital markets are inefficient the main hypothesis tested was the market efficiency hypothesis. Under the null hypothesis the long-run abnormal returns to the bidders are not significantly different from zero (Hypothesis 1). If the hypothesis is rejected, there is a possibility that some shares are not fairly priced. The market efficiency hypothesis (Hypothesis 1) is not supported by the data. There is considerable negative performance of bidders’ stocks after the acquisition (see Table 1). The 3-factor model adjusted average returns to the bidders are -3.46% 12 months after the merger, -2.80% two years after the merger and -2.69% 3 years after the merger. All estimates are significant at a 5% significance level.

<table>
<thead>
<tr>
<th>Means of payment</th>
<th>Total for the wave</th>
<th>early wave</th>
<th>late wave</th>
</tr>
</thead>
<tbody>
<tr>
<td>overall</td>
<td>-3.46% **</td>
<td>-4.08% **</td>
<td>-5.35% ***</td>
</tr>
<tr>
<td>stock</td>
<td>-4.29% ***</td>
<td>-4.18% *</td>
<td>-6.62% ***</td>
</tr>
<tr>
<td>cash</td>
<td>-0.23%</td>
<td>-1.11%</td>
<td>0.05%</td>
</tr>
<tr>
<td>mixed</td>
<td>-4.06% **</td>
<td>-4.16%</td>
<td>-5.62% ***</td>
</tr>
</tbody>
</table>

Table 1

The estimated long-run abnormal returns to the bidders

1
The average monthly abnormal returns estimated with the Fama-French 3-factor model. The t-statistics are given in italics under estimated variables (*, ** and *** stand for significance levels of 10%, 5% and 1%). The average abnormal returns are calculated for 36 calendar time portfolios of stocks; portfolios constructed for all deals, the whole period, early and late merger waves, stocks, cash and mixed offers for the testing period of 12, 24 and 36 months.

The crucial hypothesis of this study (Hypothesis 3) was that overvaluation in the later stages of merger waves would lead to an increased percentage of equity-financed mergers. As overvaluation only boosts stock swaps, the number of cash acquisitions is not likely to be influenced by overvaluation. The structural analysis in relation to means of payment reveals the predicted finding: stocks are the predominant means of consideration for acquisitions announced in the period of increased merger activity (See Table 2). The number of stock acquisitions within the wave accounts for more than half of all the stock acquisitions over the ten-year period from 1994 to 2004. The average number of monthly stock acquisitions is 7.8 in the wave, which is three and a half times bigger than outside the wave and twice bigger than on average over the ten-year period (2.2 and 3.6 respectively). However, the biggest concentration of monthly stock acquisitions is positioned in the first half of the wave: 58.8% of all stock acquisitions within the wave were announced in the first twelve months of the merger wave. This finding contradicts the hypothesized suggestion that stock is used as a method of payment more intensively at the end of the merger wave. Hypothesis 3 is not supported by the data in terms of the equity financing preponderance in the later merger wave. At the same time, as regards cash financing, Hypothesis 3 still holds. The average number of cash mergers per month is only 1.18 times higher within the wave than outside the wave. This is in line with Hypothesis 3,
which suggests that the number of cash acquisitions is not substantially altered by overvaluation.

The structural analysis of the sample

<table>
<thead>
<tr>
<th></th>
<th>within the merger wave</th>
<th>outside the merger wave</th>
<th>overall for the period</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>early wave</td>
<td>late wave</td>
<td>overall</td>
</tr>
<tr>
<td>Number of deals</td>
<td>145</td>
<td>132</td>
<td>277</td>
</tr>
<tr>
<td>Number of stock acquisitions</td>
<td>110</td>
<td>77</td>
<td>187</td>
</tr>
<tr>
<td>Average number of stock acquisitions, monthly</td>
<td>9.17</td>
<td>6.42</td>
<td>7.79</td>
</tr>
<tr>
<td>Average number of cash acquisitions, monthly</td>
<td>1.80</td>
<td>2.00</td>
<td>1.90</td>
</tr>
<tr>
<td>Average number of mixed acquisitions, monthly</td>
<td>2.80</td>
<td>2.67</td>
<td>2.74</td>
</tr>
<tr>
<td>Proportion of stock offers</td>
<td>69.12%</td>
<td>58.54%</td>
<td>63.60%</td>
</tr>
<tr>
<td>Proportion of cash offers</td>
<td>13.48%</td>
<td>20.21%</td>
<td>16.85%</td>
</tr>
<tr>
<td>Proportion of mixed offers</td>
<td>14.82%</td>
<td>21.26%</td>
<td>18.04%</td>
</tr>
</tbody>
</table>

Data throughout the whole period of 1994-2004, within the merger wave (24 months between April 1999 and March 2001, with the first 12 months as an early wave and the last 12 months as a late wave) and outside the merger wave. 100% cash as a method of payment defined as cash acquisitions and 100% stock as a stock deal. The deal is treated as mixed otherwise.

Hypothesis 2 was that in the short event window, market reaction upon the announcement of a bid would result in fluctuations in the value of equity for both targets and bidders. The null hypothesis for the short-term data was that announcement of takeover has no effect on stock returns. Rejection of the hypothesis indicates the presence of the announcement effect. The abnormal returns for target firms in the short event window are positive and significant (Table 3). The excess returns to the acquirers are not significantly different from zero in the eleven-day event window and significantly negative six days after the bid (Table 4). Thus, the null hypothesis (Hypothesis 2) of zero abnormal returns in the announcement period can be rejected. There is a significant announcement effect for both targets and bidders.
Table 3

**The estimated abnormal returns to the targets**

<table>
<thead>
<tr>
<th>Panel B1: Cumulated average abnormal returns (CAR) to the targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day relative to the announcement (day 0)</td>
</tr>
<tr>
<td>------------------------------------------------</td>
</tr>
<tr>
<td>3 days around day 0</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>5 days around day 0</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>7 days around day 0</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>11 days around day 0</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>-5 to -1</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>0 to 5</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

The daily average abnormal returns estimated using the market model with day 0 as the day of the announcement of the bid. The number in italics under the estimated variables is the t-statistics. The *, ** and *** stand for significance levels of 10%, 5% and 1% respectively. The average abnormal returns are cumulated throughout the 3, 5, 7, 11 days around event day 0, -5 to -1 and 0 to +5 days relative to the event day.

With regard to the announcement effect, Shleifer and Vishny propose that in the short term, the market does not infer any information about the real value of the bidder or target from the choice of method of payment. The market prices the potential synergies positively, disregarding the means of payment. In this respect, Prediction 2a was that short-term abnormal returns should be non-negative for targets and bidders in both cash and stock offers. However, this applies to dollar amounts of abnormal returns. Concerning percentage gains or losses, the announcement effect may be negative for the bidders in stock offers. The results show that overall in an eleven-day event window, the abnormal returns to the bidders are significantly negative for stock offers (Table 4). Consistent with Prediction 2a, the abnormal returns to the bidders in cash acquisitions are non-negative (not significantly different from zero) and negative (-3.36%) in stock offers in the short term (Table 4).

Table 4

**The estimated short-horizon abnormal returns to the bidders**

<table>
<thead>
<tr>
<th>Panel B2: Cumulated average abnormal returns (CAR) to the bidders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day relative to the announcement (day 0)</td>
</tr>
<tr>
<td>------------------------------------------------</td>
</tr>
<tr>
<td>3 days around day 0</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>5 days around day 0</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>7 days around day 0</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

38
The daily average abnormal returns are estimated with the market model. The numbers in italics under the estimated variables are the t-statistics and z-statistics under the estimates of the differences. The * , ** and *** stand for a Student’s t-distribution significance level of 10%, 5% and 1% respectively. The test for the difference of the means was conducted for the difference of the estimates in cash and stock offers. The critical value of Z-statistics at a 5% significance level is 1.96. * stands for a significance level of 5%. Average abnormal returns are cumulated throughout 3, 5, 7, 11 days around event day 0, -5 to -1 and 0 to +5 days relative to the event day.

Dong et al. (2006) report that higher valuations of targets are associated with lower announcement abnormal returns. Hence, the poorer short-term performance of targets at the later wave stages is an indirect indicator of targets’ overvaluation in the second half of the merger wave. Overall, we expected abnormal returns to the targets to be lower in the second half of the wave (Prediction 2c). Prediction 2c is confirmed by the data (Table 3). An insignificant wave effect was detected with targets’ abnormal returns being lower at the second half of the wave (Table 5).

With regard to the overvaluation theory explanation of the wave effect, Prediction 1a was that the acquirers’ post-bid abnormal returns in the long run will be higher if the bid was announced in the first part of the wave (low overvaluation) than at the end of the wave (wave effect). The results suggest that the wave effect is clearly distinct in the data. The estimated 36-month post-acquisition average abnormal returns to bidders are -3.55% in the late wave compared to -2.52% in the early wave with the difference being significant (Table 5).

<table>
<thead>
<tr>
<th>11 days around day 0</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-3.36%</td>
<td>*</td>
<td>-1.27%</td>
<td>0.74%</td>
<td>-2.22%</td>
</tr>
<tr>
<td></td>
<td>-1.73</td>
<td></td>
<td>-0.42</td>
<td>0.27</td>
<td>-1.13</td>
</tr>
<tr>
<td>-5 to -1</td>
<td>1.25%</td>
<td>0.95%</td>
<td>3.02%</td>
<td>*</td>
<td>1.53%</td>
</tr>
<tr>
<td></td>
<td>1.36</td>
<td>0.47</td>
<td>1.64</td>
<td>1.16</td>
<td>0.564</td>
</tr>
<tr>
<td>0 to 5</td>
<td>-4.61%</td>
<td>***</td>
<td>-2.22%</td>
<td>-2.28%</td>
<td>-3.75%</td>
</tr>
<tr>
<td></td>
<td>-2.69</td>
<td></td>
<td>-1.00</td>
<td>-1.13</td>
<td>-2.59</td>
</tr>
</tbody>
</table>

Table 5
The dynamics of abnormal returns to the targets and bidders across the merger wave and effects of financing method

| Panel A4: Average 36-month abnormal (AR) returns and 11-day CARs to the bidders |
|-----------------------------|------------|--------------|------------|
| late wave                  | early wave | difference late-early |
| AR36                       | -3.55%     | **           | -2.52%     | *          | -1.03% x |
|                            | -2.88      |              | -1.87      |            | -3.98     |
| CAR(-5 +5)                 | -3.94%     |              | -0.83%     |            | -3.11%    |
|                            | -1.00      |              | -0.55      |            | 0.67      |
| CAR(0 +5)                  | -6.63%     | **           | -1.42%     |            | -5.21% x  |
|                            | -2.28      |              | -1.26      |            | 2.30      |

<table>
<thead>
<tr>
<th>Panel B4: 11-day CARs to the targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAR(-5 +5)</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

The merger wave spans the period from April 1999 to March 2001 and is assumed to be 24 months long. The first and last 12 months of the wave are defined as the early wave and late wave respectively. The average monthly abnormal returns are estimated using the Fama-French 3-factor model. The average daily abnormal
returns are estimated using the market model. The number in italics under the estimated variables is the t-statistics. The *, ** and *** stand for a significance level of 10%, 5% and 1% respectively. A test for the difference of the means was conducted. The critical value of Z-statistics at a 5% significance level is 1.96. x stands for a significance level of 5%.

According to the Shleifer and Vishny overvaluation theory, bidders make cash offers when they are less overvalued and offer stock otherwise. Hence, the long-run abnormal returns to cash acquirers are non-negative. **Prediction 1b:** We expected non-negative long-run abnormal returns for bidders in cash deals. We observe insignificant abnormal returns to the acquiring firms in cash acquisitions one, two and three years after the bid (Table 1).

**Prediction 1c:** Overall, the long-run abnormal returns for the bidders should be negative in stock offers, with sharper declines for the announcements in the second half of the wave. The performance of bidders should be especially poor following the peak of the merger wave.

We find that bidders that finance their acquisitions with stock suffer substantial losses in the long horizon continuously three years after the acquisition (Table 1). The average monthly abnormal returns to the bidders are -3.21% three years after the bid. These losses are especially dramatic for the stock acquisitions announced in the second half of the wave. The 36-months average abnormal return to the bidders in stock acquisitions is -4.23% in the late wave, compared to the more moderate -2.6% abnormal return for the early wave bids. This suggests that bidders in the later stages of the merger wave were more overvalued. **Prediction 1c** is supported by the data. This result is strongly consistent with the SMDA theory. The presence of discrepancies between the long-run abnormal returns in cash and stock offers is due to market inefficiencies. The market does not incorporate all the relevant information from deal characteristics in the short term. Overvalued bidders offer stock as a method of payment for acquisitions.

The long-run negative abnormal returns to the bidders observed in this study cast out the neoclassical explanations of the wave effect. Although the Hubris hypothesis of mergers was not tested here explicitly, this hypothesis would have been rejected based on the finding that the mergers in the first half of the wave did not create value for bidders. The abnormal returns to the bidders were negative for acquisitions in the first half of the wave. Therefore, there was no basis for bidders to be overconfident about the success of the mergers. The competitive edge theory is also inconsistent with the findings of this paper. According to this theory, managers rationally overpay for targets in the second half of the wave, when the number of good targets is small. This overpayment leads to negative abnormal returns to the acquiring firms in the later wave. However, this pattern should be present in both cash and stock offers. This theory cannot explain the fact that there was no wave effect observed in cash offers.

**CONCLUSIONS**

This paper applied the overvaluation theory of Shleifer in Vishny (2003) in explaining the difference in returns available to targets and bidders over certain phases of a merger wave, i.e. the wave effect, previously detected in the study by Floegel et al. (2005). In the present sample of high-tech companies in the 90s merger wave, bidders’ share price fluctuations as a response to the announcement of bids proved to be contingent on the means of payment and phase of the merger wave when the merger was initiated.
There are three crucial aspects in the results that allow for confirmation that the wave effect is associated with overvaluation. First, the data provided clear empirical evidence of a significant wave effect. The wave effect was detected for merging firms in both the short term and long term. The abnormal returns to the bidders in the short event window were significantly lower for the bids announced in the second half of the wave. A difference in abnormal returns to bidders in the late and early wave was also observed in the long run post-acquisition. When looking at the method of financing, the wave effect could be detected only for stock deals. Second, the data supported the main predictions of the Shleifer and Vishny theory. The main predictions of the Shleifer and Vishny overvaluation theory are as follows:

1) The preponderance of stock as a method of payment within the merger wave and particularly in the later wave. Stock acquisitions were the dominant method of financing within the wave with 63.6% of deals being financed with equity. However, most of the stock acquisitions were concentrated in the first half of the merger wave.

2) The presence of abnormal returns to the bidders in the long run. The bidders suffered from significant losses in share prices in the long run – broadly consistent with previous findings in long-horizon event studies (as summarized by Bruner (2005)). Negative abnormal returns to the bidders were observed up to three years after the bid. This finding indicates capital market inefficiencies, the necessary element of overvaluation theory.

3) Bidders’ share prices converge to their fundamental values in the long run. More overvalued bidders suffer from sharper valuation correction. Consistent with the SMDA theory, there were lower negative abnormal returns to the bidders merging in the later phase of the merger wave.

4) The market prices potential synergies from mergers positively irrespective of the method of financing. The market reaction upon the announcement of a bid was not significantly affected by the method of payment. There were non-negative abnormal returns to the bidders and targets in the short run in the sample.

5) The long-horizon average abnormal returns to the acquirers in the sample were significantly lower when the stock was used as a method of payment. This was especially true for the bids announced in the second half of the merger wave.

6) Higher abnormal returns to the undervalued targets, that is, for the bids in the first half of the wave and in cash offers. The estimated abnormal returns were significantly higher for targets acquired for cash and those merging in the early wave.

Finally, the neoclassical theories are inconsistent with the market inefficiencies detected here (the long-run negative abnormal returns to the bidders). Besides this, the neoclassical theories are not able to explain the choice of stock financing in the majority of acquisitions in the sample and the contingency of stock behaviour on the means of payment.

In general, the analysis showed that the wave effect in the sample could be well explained by the overvaluation theory. The current study adds to the argument that merger activity may be amplified by misvaluations and therefore lead to potential value destruction on a systemic scale. The sample indicated value destruction for the bidders, thus conforming to the main characteristics of the merger wave of the 90s. Most merger waves have been followed by an economic recession (Rhodes-Kropf et al. (2004), Howard
Ma (2016)). Therefore, aggregate merger activity and its underlying factors will continue to be of scientific research interest going forward.

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MEASUREMENT OF LONG-LIVED NON-FINANCIAL ASSETS IN LATVIAN LISTED COMPANIES: THE COST MODEL VERSUS THE REVALUATION MODEL

Ieva Kozlovska

ABSTRACT
This paper deals with analysis of how Latvian companies listed on the Baltic Stock Exchange measure their long-lived non-financial assets. In the year 2014 the average proportion of these assets in their balance sheets was 48% and for some of the companies it was even up to 97%. Therefore, the information related to long-lived non-financial assets presented in financial statements plays a significant role in assisting its users to predict companies’ future cash flows and financial results. Often these assets are also related to significant capital investment decisions that should be performed in a strictly planned and wise manner. Decisions about these assets made by a company’s management are critical not only for the company’s efficient asset management, but also for its future value, stock price and shareholders’ wealth.

The objective of this study was to investigate which of the two models (cost model / revaluation model) are applied in Latvian companies listed on the Baltic Stock Exchange to measure their long-lived non-financial assets, and how the financial results and future market prices of these companies could be influenced based on the model selected. The author’s conclusions are based on a study of Western publications and analysis of practices at Latvian listed companies. The results of this research should be beneficial for academic researchers as well as educators and practitioners of financial statement analysis.

Keywords: long-lived non-financial assets, revaluation model, cost model, financial statements.

INTRODUCTION
Today, information reflected in a company’s financial statements plays a significant role in decision-making processes by its existing or potential investors. Financial information does have a significant influence on investors’ behaviour with respect to portfolio selection, affecting security prices and, therefore, also the terms on which a company is able to obtain additional financing (Palea, 2013).

In the process of decision-making about financing and possible future investments in a particular company, including its long-lived non-financial assets, it is important for information available to be transparent, fairly reflecting the real situation in the company with possible basic risks, especially in case a large proportion of the company’s balance sheet value has been located in these assets. Financial information should be free of material misstatements and faithfully represent a company’s financial performance per particular period. There is a significant relationship between financial transparency and efficiency of capital allocation. “Financial accounting information plays a critical role as a corporate governance device in disciplining managers to invest in profitable projects and refrain from investing initially in value-destroying projects” (Habib, 2008).

Since nowadays the measurement of a company’s long-lived non-financial assets are regarded as one of the most important areas of financial accounting, it is important for the recognition and measurement processes of these assets to be correct, transparent, and in accordance with respective accounting and reporting regulations. Although various
international financial accounting and reporting standards have been developed, many of them are not complete. For example, International Accounting Standard 16 “Property, Plant and Equipment” and International Accounting Standard 38 “Intangible Assets” allow a company to choose between two completely opposite models for measurement of long-lived non-financial assets right after initial measurement of its cost – the cost model or the revaluation model. The choice of model influences the company’s financial results per particular period in completely different ways. The issue of fair value versus historical cost has been and continues to be one of the most challenging problems in literature (Brinza, Bengescu, 2016). Furthermore, a comparability problem regarding companies’ financial statements arises. Both standards mentioned above allow a company to choose between two diametrically opposed models. One of the problems is that both of the suggested models, according to International Accounting Standard 16 “Property, Plant and Equipment”, are actually completely opposed. Companies applying the revaluation model will increase the value of their assets and equity and will improve their debt ratios. Companies applying the fair value model will decrease their profits legally, getting the possibility to pay lower dividends, receive a state subsidy, etc. (Talnagiova, Cerna, 2011). According to research by Rodriguez-Perez, Slof, Sola, Torrent and Vilarde (2011), there are significant differences in accounting numbers when applying one of the two possible models. Nevertheless, the change from historical-cost to fair-value accounting will change analysts’ perceptions only of some of the companies without any major impact on the appraisal of all companies.

In this paper, the author analysed application of these two models in Latvian companies listed on the Baltic Stock Exchange. The findings of this research paper should be beneficial for academic researchers as well as educators and practitioners of financial statement analysis. The results obtained will provide the author with the possibility to identify possible issues in the accounting practice of measuring long-lived non-financial assets and to formulate directions for further research.

THEORETICAL FRAMEWORK OF THE RESEARCH

Importance of measuring long-lived non-financial assets’ value creation process

Today, in various businesses, long-lived non-financial assets are one of the most significant items in a company’s balance sheet – those used for more than one accounting period, ensuring a company’s basic business operations, and also those basically generating the profit. Accordingly, a significant part of a company’s value and also its stock price has been located in balance sheet positions of companies’ long-lived non-financial assets.

Empirical studies demonstrate that due to the current global economic situation many companies worldwide, in order to survive in the global marketplace, are forced to develop different strategies to create company value. Companies try to increase their value via income, market value, value added activities for their products and services, and even knowledge-based management. A company’s tangible and intangible assets are involved in this value creation process as very important elements (Poenaru, Halliburton, 2011; Woodruff, 1997; Garinina, 2009). As a logical result, the information reflected in the company’s financial statements plays a significant role in the value creation process for every company worldwide. A company’s value is strongly associated with information
contained in perceived quality measures. Usually companies’ stock prices increase or decrease right after announcements of favourable or unfavourable quarterly earnings. Plus, often companies’ management acts from the short-term perspective since the implication for managers is to get current-term earnings up or there will be a significant risk of losing investors’ confidence (Aaker, Jacobson, 1994). As Warren Buffet states: “Trust is like the air we breathe. When it’s present, nobody really notices. But when it’s absent, everybody notices” (Sandlund, 2002:70). Quite often there is a situation in which a company’s management is able to control the application processes of definite accounting standards and, further, how information has been reflected to the company’s shareholders and other stakeholders. This issue has been related to the accounting and reporting processes of a company’s long-lived non-financial assets as well. Furthermore, in some situations the proportion of these assets in the company’s total balance sheet value is quite significant (as it is for Latvian companies listed on the Baltic Stock Exchange, reflected in Table 1 below); there is not only a risk of purposeful manipulations in figures reflected in the company’s financial statements, but also a significant risk of the wrong decisions being taken by shareholders toward future activities with these assets in order to define value creation opportunities (investments, acquisitions). Therefore, the author believes that the model selected to measure a company’s long-lived non-financial assets after initial recognition does have a significant influence on the results and data reflected in a company’s financial statements. The same issues arise if we compare a company’s performance with that of its key competitors. It is important for the company’s shareholders to have access to all the information needed. Also, the quality of this information is critical.

Table 1
Long-lived non-financial assets of Latvian companies listed on the Baltic Stock Exchange (2007 to 2015)

<table>
<thead>
<tr>
<th>Industry (code)</th>
<th>Average total assets of Latvian companies listed on the Baltic Stock Exchange (2007 to 2015, EUR)</th>
<th>Ratio of long-lived non-financial assets to total assets of Latvian companies listed on the Baltic Stock Exchange (2007 to 2015, EUR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Utilities (code: 7000)</td>
<td>721,773,556</td>
<td>69.95%</td>
</tr>
<tr>
<td>Health care (code: 4000)</td>
<td>67,286,019</td>
<td>53.77%</td>
</tr>
<tr>
<td>Industrials (code: 2000)</td>
<td>41,029,116</td>
<td>38.36%</td>
</tr>
<tr>
<td>Basic materials (code: 1000)</td>
<td>40,021,234</td>
<td>59.51%</td>
</tr>
<tr>
<td>Consumer goods (code: 3000)</td>
<td>17,557,865</td>
<td>33.74%</td>
</tr>
<tr>
<td>Technology (code: 9000)</td>
<td>13,121,402</td>
<td>9.20%</td>
</tr>
<tr>
<td>Financials (code: 8000)</td>
<td>6,089,279</td>
<td>96.78%</td>
</tr>
<tr>
<td>Telecommunications (code: 6000)</td>
<td>2,329,164</td>
<td>0.00%</td>
</tr>
</tbody>
</table>

Source: Author’s own research on the basis of annual reports of Latvian companies listed on the Baltic Stock Exchange
Other studies show that the modern concept of measurement was introduced to accounting as early as the 1960s. It is a challenge that there are only a few definitions of the term “measurement” available in the literature. The term “measurement”, in the Conceptual Framework (IASB, 2010), is defined as follows: “the process of determining the monetary amounts at which the elements of the financial statements are to be recognized and carried in the balance sheet and income statement”. There are two theories of measurement – classical and modern. The classical theory was dominant till the late 1940s and the modern one was adopted in the 1960s. Today, the International Accounting Standard Board is slowly returning to the classical measurement theory (Vehmanen, 2013). There are many unresolved issues concerning the conceptual definition of accounting measurement and the concept guiding standard setters’ choice of measurement base (Barth, 2014).

After initial recognition, each long-lived non-financial asset a company owns should be measured based on two methods – the cost model and the revaluation model. Regarding intangible assets – usually they are measured using the cost model, except in cases where an active market for the particular intangible asset exists. In such cases it is also acceptable to apply a revaluation model. In the case of tangible assets, the company is allowed to choose which of the two models to apply – either the revaluation model or the cost model – and define it as its accounting policy for tangible assets. Comparing the effect on a company’s profit/loss, it was discovered that it is absolutely evident that if the company revaluates its assets to its fair value (increases the value of the particular asset to fair value), it has less profit/loss than in the application of the cost model (Talnagiova, Cerna, 2011). This issue is actually a question for accounting experts, business leaders, economists, and even politicians who state that the concept of fair value accounting is correct and even useful, but its application is problematic. There are even some experts who believe that fair value measurement is deepening the financial crisis. It is necessary to use both approaches – fair value and revaluation – in accounting to provide correct information to various users of financial information. Even an entity’s specific measurement for non-financial long-lived assets could be used rather than fair value measurement. Fair value measurement is more appropriate for financial assets (Dvořáková, 2009). Historical cost and fair value accounting should not be regarded as competitors because each serves different purposes. Historical cost provides investors with the cost of investment, while fair value provides a measure of what the management expects to get in return from the definite asset. Therefore, to ensure complete and useful information for investors, both historical cost and fair value should be applied only together (Betakova, Hrazdilova-Bockova and Skoda, 2014). Rodriguez-Perez et al. (2011) state that accounting numbers do differ significantly in case tangible long-lived non-financial assets have been accounted for at fair value instead of at historical cost. The amount of this difference depends on the type of company and particular long-lived non-financial asset.

**Cost model versus revaluation model**

According to International Accounting Standard 16 “Property, Plant and Equipment” and International Accounting Standard 38 “Intangible Assets”, a company possessing long-lived non-financial assets in its balance sheet permits these assets to be measured using either the cost model or the revaluation model. Applying the cost model, tangible assets, after recognition, have been carried at their cost minus subsequent
depreciation and impairment. Applying the revaluation model, the same assets should be carried at a revalued amount at their fair value on the date of revaluation less subsequent depreciation and impairment. Right after recognition, intangible assets should be revaluated in the same way, the only exception being if fair value can be determined by reference to an active market. Such active markets are expected to be uncommon for intangible assets.

The significant shift from accounting based on historical costs to accounting based on fair value is regarded as a conceptual revolution in accounting (Brinza, Bengescu, 2016). Rodriguez-Perez et al. (2011) state that historical costs are regarded as more objective and reliable than the fair value or revaluation model. Nevertheless, the literature on fair value accounting indicates that it provides more relevant information to investors than the historical cost model. In comparison with the cost model, this model is more relevant. Barth et al. (2001) and Wallison and Isaac (2008), cited in Siekkinen (2016), conclude that fair value accounting has been supported and also criticized by academics and practitioners. Some of them maintain that fair value accounting ensures that shareholders receive the most relevant information. At the same time, opponents blame fair value accounting in the recent financial crisis. Investors are ready to pay more for fair value assets than for historical values or non-fair values. A completely different view states that there is no mutual influence between fair-value accounting and the severity of the 2008 financial crisis (Laux, Leuz, 2010).

Because of the option to choose between two models, a significant risk of possible manipulative activities arises. Since companies’ managers are allowed to choose which of the various valuation methods for long-lived non-financial assets (historical, fair value, mixed) in order to evaluate a fund’s properties, it is possible to manipulate information and avoid possible declines in the company’s net asset value (Pinto, 2013). In situations where fair value accounting has been applied, more information has been provided to its users. This model does have a negative impact on a company’s profit/loss and its application process is more complex and more expensive in comparison with the cost model (Talnagiova, Cerna, 2011).

The overall concept of fair value accounting is correct and even useful. The problem is its application in practice. Therefore, a suggestion has even been made to implement an additional alternative reporting document providing information on the fair value measurement of long-term non-financial assets (Dvořáková, 2009). To ensure the highest quality of financial reporting, it is advisable to apply both of these models (Betakova, Hrazdilova-Bockova, Skoda, 2014). Mládek 2009, cited in Talnagiova and Cerna (2011). Implementing both models will also decrease the existing direct conflict with the concept of comparability between or among companies. The facts mentioned above lead to the idea that fair value accounting has a significant influence on companies’ values and their shareholders’ decisions (Roggi, Giannozzi, 2015).

**RESEARCH METHODOLOGY**

The review of theory conducted in the previous section of this research paper allowed the author to form a general idea of the interest in the topic “measurement of long-lived non-financial assets in Latvian listed companies: the cost model versus the revaluation model” as well as the extent of its development in the scientific literature and to formulate the following basic research questions (RQs):
• Which model has been selected – the cost model or the revaluation model – by Latvian companies listed on the Baltic Stock Exchange for measurement of their long-lived non-financial assets?
• What kind of issues should a company consider regarding the measurement of non-financial long-lived assets (the cost model and the revaluation model)?

In order to answer RQ1 and RQ2 the author analysed existing approaches and possible problems at Latvian companies listed on the Baltic Stock Exchange related to practical experience in measuring long-lived non-financial assets.

Methodology – the empirical sample consists of 25 Latvian companies listed on the Baltic Stock Exchange. The author developed a survey exploring the measurement practices for long-lived non-financial assets at Latvian companies listed on the Baltic Stock Exchange. Therefore, the author used real data (information) obtained from 25 out of 26 Latvian companies listed on the Baltic Stock Exchange in the period of the end of 2007 to 2015. Companies represent the following industries – basic materials (code: 1000), industrials (code: 2000), consumer goods (code: 3000), health care (code: 4000), telecommunications (code: 6000), utilities (code: 7000), financials (code: 8000), and technology (code: 9000).

The author has analysed financial statements and developed a questionnaire for Latvian companies listed on the Baltic Stock Exchange, obtaining answers to the following questions about measurement of long-lived non-financial assets:

1. What is the name of your company? (not mandatory)
2. What is the operating sector of your company?
3. Which of the two models – the cost model and/or the revaluation model – has been applied at the company to measure each group of tangible long-lived non-financial assets after initial recognition?
4. Which of the two models – the cost model and/or the revaluation model – has been applied at the company to measure each group of intangible long-lived non-financial assets after initial recognition?
5. Has the company ever changed the model for its long-lived non-financial asset measurement after initial recognition? What were the key reasons for this?
6. What are possible problems and your opinion / suggestions for implementation in the legislation regarding long-lived non-financial asset measurement after initial recognition?

**ANALYSIS OF THE RESEARCH RESULTS**

Based on results of this survey, the author came to the conclusion that most of the tangible and intangible assets of Latvian companies listed on the Baltic Stock Exchange are measured after their initial recognition by use of the cost model. Information reflected in Table 2 below shows that a minority of companies apply the revaluation model to tangible long-lived non-financial assets like land, property and plant or technological equipment and automobiles – 16% to 20%. Table 3 below shows that the situation with intangible assets is even worse – there are only a few companies evaluating some of their intangible assets with the revaluation model – 4% to 8%. The author therefore agrees with Betakova, Hrazdilova-Bockova, and Škoda, who state that historical cost and fair value accounting should not be regarded as competitors. They should be used for different purposes – historical cost provides investors with the cost of particular investments, while
fair value provides a measure of what a company’s management expects to get in return from this particular asset. Therefore, in order to ensure complete and useful information for investors, both the historical cost and fair value models should be applied only together (Betakova, J., Hrazdilova-Bockova, K., Skoda, 2014). This is even more important today, when the economic situation in the Republic of Latvia and the Baltic States and even on a global level is not stable and predictable.

The author also discovered a positive trend related to these two models. 28% of companies confirmed that they have changed their model during business activities. The key reasons were the planned economic benefits of this particular asset in the opinion of the company’s management – 12%; the technical condition of this asset – 7%; and credit policy or other reasons – 9%. In these cases, the risk of possible manipulative activities on the part of the management and earning management arises. Therefore, it is important for the company’s shareholders to be familiar with issues related to the two diametrically opposed models – the cost model and the revaluation model. One positive aspect in this situation is the fact that, actually, data among companies can be compared since almost all of them apply the same model to measure their long-lived non-financial assets – the cost model. For investors, this is not ideal since the revaluation model provides them with more relevant information.

Table 2
Measurement methods for tangible (fixed) assets of Latvian companies listed on the Baltic Stock Exchange (2015)

<table>
<thead>
<tr>
<th>Fixed assets</th>
<th>Cost model (%)</th>
<th>Revaluation model (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land</td>
<td>84</td>
<td>16</td>
</tr>
<tr>
<td>Property, plant</td>
<td>80</td>
<td>20</td>
</tr>
<tr>
<td>Technological equipment and automobiles</td>
<td>84</td>
<td>16</td>
</tr>
<tr>
<td>Ships</td>
<td>92</td>
<td>8</td>
</tr>
<tr>
<td>Airplanes</td>
<td>96</td>
<td>4</td>
</tr>
<tr>
<td>Vehicles</td>
<td>80</td>
<td>20</td>
</tr>
<tr>
<td>Furniture and equipment</td>
<td>96</td>
<td>4</td>
</tr>
<tr>
<td>Office equipment</td>
<td>100</td>
<td>0</td>
</tr>
</tbody>
</table>

Source: Author’s own research
Table 3
Measurement methods for intangible assets of Latvian companies listed on the Baltic Stock Exchange (2015)

<table>
<thead>
<tr>
<th>Intangible assets</th>
<th>Cost model (%)</th>
<th>Revaluation model (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patents</td>
<td>96</td>
<td>4</td>
</tr>
<tr>
<td>Licences</td>
<td>92</td>
<td>8</td>
</tr>
<tr>
<td>Concessions</td>
<td>96</td>
<td>4</td>
</tr>
<tr>
<td>&quot;Know-how&quot;</td>
<td>96</td>
<td>4</td>
</tr>
<tr>
<td>Copyrights</td>
<td>92</td>
<td>8</td>
</tr>
<tr>
<td>Trademarks</td>
<td>96</td>
<td>4</td>
</tr>
<tr>
<td>RandD</td>
<td>NA*</td>
<td>NA*</td>
</tr>
<tr>
<td>Goodwill</td>
<td>NA*</td>
<td>NA*</td>
</tr>
</tbody>
</table>

Source: Author’s own research

* not applicable (NA) because of the limited number of companies (less than 3%) and out of the research scope.

Based on the results of the survey conducted, there were no opinions or suggestions to be implemented in related legislation regarding measurement of companies’ long-lived non-financial assets after their initial recognition. This fact proves the author’s opinion that companies’ management and shareholders are not familiar with important and unresolved issues related to the measurement process for these assets.

CONCLUSIONS
The author found that most tangible and intangible assets owned by Latvian companies listed on the Baltic Stock Exchange are measured after their initial recognition by use of the cost model. This is not good for investors since another model – the revaluation model – provides them with more relevant information. Also, there are significant differences in accounting numbers when applying one of the two possible models. Due to these differences, the issue of the comparability of companies’ financial statements also arises. Therefore, to ensure comparability and transparency of financial information pertaining to these assets, it is advisable to use both of these models for measurement of long-lived non-financial assets after initial recognition. It is even advisable to introduce a new, additional alternative reporting document describing the measurement of companies’ long-lived non-financial assets after their initial recognition.

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STRUCTURE OF DEMAND AND SUPPLY OF INVESTMENTS OF STATE-SUBSIDIZED VENTURE CAPITAL FUNDS IN LATVIA

Anatolijs Prohorovs
Velta Jonina

ABSTRACT
One of the tools for financing young innovative companies is state-subsidized venture capital funds (VCF). The paper explores the issues of demand for investment and the structure of Latvian state-subsidized VCF investments. We found that of the total number of applications for investment received by state-subsidized VCFs, only 42.5% come from innovative companies. The number of innovative companies that received investment from state-subsidized VCFs is even lower and amounts to 32.9%; moreover, of the total number of investments, 28.2% were made in young and innovative companies. The volume of VCF investments in innovative companies amounts to 29.6% of the total amount of investments made. The reason for such a low share of financing for innovative companies from state-subsidized VCFs may be a low demand for VCF investment from innovative Latvian companies and VCFs’ unwillingness to invest funds in companies with a high level of information asymmetry or to have more than 15-20 companies in the portfolio of small funds, since this increases the administrative costs of managing VCFs.

Keywords: venture capital; state and hybrid venture capital fund investment; start-up financing; innovative company financing; demand for the investment of venture capital funds

JEL code: G11, G24, G 31, G 38, M13

INTRODUCTION
Innovative development of the economy is one of the major priorities of the EU and its member states (European Commission, 2014). Venture capital (VC) investment is becoming an important source of financing for innovative and high-tech companies (European Commission, 2011). An innovative company is a company with a significant proportion of sales and profits derived from products or services that have recently been introduced to the market (McFarthing, 2010). The characteristics used to identify young innovative companies (YICs) are therefore a combination of age, size and innovation profile (Schneider and Veugelers, 2008). Based on these definitions, YICs are small, young and intensely involved in innovation (Carnitski and Delanote, 2012). The EU uses various tools to support innovative companies, including the EIF, acting as a fund of funds and subsidizing venture capital funds (VCFs) (Kraemer-Eis, Signore and Prencipe, 2016). It can be expected that the share of various projects and EU funding programs for subsidizing VCFs in CEE countries in the next programming period (2021-2027) will be significantly reduced. (Among the possible reasons for the reduction of VCF-subsidizing programs: a potential reduction in the EU budget due to Brexit, the need to channel financing to programs addressing the migration crisis, and changes in the EU development strategy, including in the context of discussions about a two-speed Europe). Accordingly, the role of economic efficiency of VCF state support will increase.
In our opinion, one of the most effective measures to increase the efficiency of state support for innovative companies may be an increase in concentration of state-subsidized VCFs on investment in young innovative companies. In the analysis of the scientific literature, we were not able to find data on the quantitative indicators of the structure of demand for investments by state-subsidized VCFs or on the quantitative indicators of the structure of VCF investments in the context of the division of applications and investments in innovative/non-innovative companies. A number of researchers note that one of the biggest problems in researching the supply and demand of VC is the collection of primary data (Jagwani, 2000, Tykvova, Borell and Kroencke, 2012).

In our opinion, the acquisition of such data is critical for conducting an analysis of the possibility to improve the efficiency of state-subsidized VCFs in the context of increasing the number and volume of financing for innovative companies. In the research on VC supply and demand, accurate data are also important for determining the optimal support tools for innovative companies. The availability of such data will allow us not only to more accurately determine incentive tools, but also to distribute support budgets among stimulating demand for VC, generating more qualitative demand for VC, and increasing supply volumes and quality of VC delivery. Therefore, the purpose of our research is to identify the indicators (and structure) of the demand and supply of investments of state-subsidized VCFs in Latvia.

On that premise, in the research we will consider what proportion of applications from innovative/non-innovative companies for funding are received by state-subsidized VCFs in Latvia out of the total number of applications for financing, and what share of investments in the portfolio of these VCFs are held by innovative companies. We will also determine what share of innovative companies applying to state-subsidized VCFs is less than three years old and what the average investment amount of the VCFs is. In addition, the research will determine the average number of portfolio companies in state-subsidized VCFs and the type of financing provided to portfolio companies (equity/convertible loan).

We hypothesize that most of the investments made by state-subsidized VCFs in Latvia are not investments in young innovative companies. We justify our assumption with two arguments. First, guided by the theory of information asymmetry, state-subsidized VCFs whose investment memorandum does not envisage investing only in young innovative companies will avoid funding such companies whenever possible. The reason for VCFs' reluctance to finance such companies is that the latter have a higher level of information asymmetry compared to innovative companies of later development/financing stages or companies that are not innovative. Second, young innovative companies do not require significant amounts of funding at the initial stage of financing. Meanwhile, small (in terms of attracted capital) state-subsidized VCFs prefer to finance transactions of a larger size, in order to have no more than 15-20 companies in the fund’s portfolio. When the number of portfolio companies significantly exceeds 15-20, the administrative costs of private management companies increase (General Partner, GP), which, with a small fund size, becomes unprofitable for the VCF managing company.

The issues we consider are particularly relevant for the development of financing programs for innovative companies in the Republic of Latvia for the following reasons. In the European Innovation Scoreboard, Latvia ranked 25th out of 28 countries (European Commission, 2016). In addition, in Europe, the share of financing of small and medium-sized enterprises by venture capital is 2%, while in the US it is 14% (Barnier, 2012). In
Latvia, this share is only 0.35% (Prohorovs and Beizitere, 2015). This is almost 6 times less than the average European figure and 40 times less than in the US.

The paper is organized as follows: at the beginning of the research a review of the scientific literature is conducted; the methodology and data on which the research is based are then presented. The next section (research and discussion) presents indicators of the number and structure of applications (innovative / non-innovative companies) for investments by state-subsidized VCFs in Latvia for 2015-2016 and the amount of investments made by Latvian VCFs in 2015-2016 (innovative/non-innovative companies). Further on, we consider the proportion of investments in innovative companies in the total volume of investments made by funds and the share of young innovative companies that received investments from VCFs. After that, the size (amount) of state-subsidized VCF investments, the number of portfolio companies in VCFs and the methods of investing are examined. Based on the results of the research, we make conclusions and recommendations for future studies.

LITERATURE REVIEW

A study by Invest Europe (formerly EVCA) presents the structure of VCF investments by industry (Invest Europe, 2015). However, this study does not separate data on state-subsidized VCFs. In addition, belonging to innovative industries may not always mean that the VCF-funded companies are innovative. The abovementioned study by Invest Europe also does not consider the age of the companies receiving investments. Therefore, this study does not offer an idea of whether the companies invested in by VCFs belong to the category of young innovative companies. In our opinion, both the age of the companies and their innovativeness are necessary estimates for the development of state policies and EU policies in the scope of stimulating young innovative companies and supplying VC. An active venture capital market can promote economic growth (Lerner, 2009). However, VC activity in Europe is very low, especially in the seed financing stage and in high-tech industries (Tykvova et al., 2012). In their opinion, VC investments are most needed in the seed stage of financing and in high-tech industries. They believe that VC investments are less necessary at later stages and in low technology industries where there are other sources of capital. Participation in solving the problem of supplying VC in the context of a supply gap is a natural step on the part of government agencies (Brander, Du and Hellmann, 2015).

In addition to creating conditions conducive to investment in RandD and innovation, governments use various tools, such as tax incentives and government support for VC (OECD, 2013). Rigby and Ramlogan find that in cases of government support for VC, insufficient attention is paid to financing truly innovative companies and the impact of these investments on long-term innovation development (Rigby and Ramlogan, 2013). This can be explained by the fact that it is young innovative companies that cannot receive bank financing (Veugelers, 2011; Reid and Nightingale, 2011; Snieska and Venckuviene, 2011; Prohorovs and Jakusonoka, 2012).

American start-up companies rely more on financing from family and friends, while Swedish companies rely more on funding from state sources (Soderblom, Samuelsson, Martensson, 2013). The participation of governments in developed countries is becoming an increasingly prevalent model for securing VC investment (Baldock, North, Bhaird, 2016). Positive examples, such as Australian VCFs, contrast with the lack of
success of similar programs in other countries (Colombo, Cumming, Vismara, 2016). They find that the negative aspects of state-subsidized VCFs can be expressed in the absence of skills in the selection and upbringing of portfolio companies as well as in the negative impact on private VC. There are certain types of companies that are unattractive to private VCFs, for example, enterprises that are at a very early stage of development (Bertoni et al., 2015). State-subsidized VCFs must invest in competitive clusters and at the beginning of the life cycle of young enterprises (Alperovych, Groh, Quas, 2016). Based on a study of the experience of advanced Western economies, Murray et al. (2012) find that measures only on the part of VC supplies cannot create a viable VC industry. They find that, in addition to the VC proposal, there should be major changes in entrepreneurial activity as well as a significant improvement in the quality and prospects of development of firms seeking VC funding. In other words, not just demand, but the quality of demand for VC is important. According to Tykvova et al. (2012), in Europe there are problems both with the amount of VC supply from private and institutional investors and with the quality of supply (quality of investment management). They find that in Europe there are few promising high-tech enterprises with a prospect of rapid growth (low quality of demand). The results of their research indicate that demand and supply do not match (Tykvova et al., 2012). The low quality of demand for VC is confirmed by the results of a survey of VCF GPs in Latvia (Prohorovs, 2013b). According to the GPs of Latvian VCFs, this factor is the fourth (out of twenty-seven) in importance, negatively affecting fundraising (Prohorovs, 2013b). There is a positive relationship between the dynamic sectors of high-tech enterprises and an effective VC industry (Tykvova et al., 2012). Dessi and Yin (2010) also find that there is a correlation between the level of VC development and innovation. In addition, there is a correlation between the level of R&D development in specific countries and their attractiveness for VC investors (Lerner and Tag, 2013; Prohorovs and Pavlyuk, 2013). According to Tykvova et al. (2012), to create conditions for an active VC industry with a large number of successful innovative portfolio companies, it is necessary to take into account both demand and supply. It is important to pinpoint that companies are innovative and have the potential for rapid growth to become a project that will be financed by state-subsidized VCFs (Snieszka and Venckuvienė, 2012). The Estonian government invests VC directly in some promising innovative companies (Kitting, 2013; Estonian Development Fund, 2013). However, according to Lerner (2010), instead of direct financing of VCFs, the state should take measures that would increase the demand for VC. Jaaskelainen, Maula and Murray (2007) consider that state-subsidized VCFs are only able to supply the missing VC temporarily. In their opinion, with this method of supplying VC, the quality of supply does not increase. They find that the state should apply other forms and methods of promoting investors, experienced venture capitalists and entrepreneurs in key technology sectors. According to Groh (2010), state subsidies do not play a positive role where decisions about VC investments are made by institutional investors, since public money does not attract private VC. He believes that VC investors pay more attention to the skills of venture capitalists (GPs). Prohorovs et al. (2015) and Groh (2010) also find that VC delivery can be limited due to an insufficient flow of transactions. The lack of a balance between the demand and supply of VC may be due to the low number of VC-ready companies as well as the small number of VCFs specializing in the early stages of financing (with a sufficient number of VCFs specializing in the late stages of VC investment) (Prohorovs, 2013a).
DATA AND METHODOLOGY

There are methodological problems in calculating VC supply and demand. For example, when calculating supply and demand for venture capital in Latvia, Dijokas and Vanags (2004) and Vanags et al. (2010) study the demand for VC investment without dividing investments with demand and supply data of later financing stages specific to the investments of private equity funds (PE). In the above studies, there is also no binding of potential volumes of VC demand or supply to the time period. The method of expert assessment or the method of comparison with other countries (Hungary and Finland) used in these studies and the introduction of adjustment factors also significantly reduces the accuracy of the results. Data obtained in research on VC supply and demand in most cases are used in the development of government programs to stimulate VC demand and supply. Therefore, developing the right methodology for researching supply and demand for VCF investment is very important. Based on this, in our research we analysed data on investment applications (number thereof) and investments made (number and amount) only for VCFs (rather than PE funds).

For more information, and to identify the structure of the demand for investments and VCF offers, we considered the number of applications from innovative and non-innovative companies separately. When studying the structure of investment among innovative companies, we also singled out the category "young innovative companies".

In order to identify the number of VCFs operating in Latvia and in the investment cycle in 2015-2016, interviews were conducted with representatives of the state institution ALTUM, responsible for the development and financing of venture capital in Latvia, and with the Members of the Board and the Executive Director of the Latvian Venture Capital Association (LVCA).

It was found that in 2015-2016 there were five VCFs in Latvia in the investment cycle. All of these VCFs were subsidized by the state. (VCFs with private capital were not registered and did not operate in Latvia during the considered period). One of these funds, founded in 2010 and specializing in the late stages of investment, was 66.7% subsidized by state capital. Another VCF, 100% subsidized by state capital and also founded in 2010, specialized in investments for the seed financing stage. In accordance with their investment memoranda, three more VCFs (founded in 2013) planned to invest in all stages of VC financing; therefore, in our research we refer to them as universal VCFs. The general partners (GPs) of these three VCFs, who claimed to manage universal VCFs subsidized by state capital under the terms of the tender for management, had to invest in the fund 5% of the amount of fund capital. That is, the share of state capital of these three funds was about 95%. All five of the VCFs in our research are managed by private companies. They had three types of specialization (by funding stages – seed stage, all venture capital, later-stage venture), which allowed us to identify both the overall picture of the indicators considered in the research and the differences in VC demand and investment preferences for each of the types of VCFs considered in the research.

To obtain (create) primary data on the number of applications of entrepreneurs for VCF investments, investments and other issues considered in the research, a questionnaire was developed and a survey of all five VCFs in the investment cycle in 2015-2016 was conducted. The number of applications for investment, investments made, and other indicators considered in the research were analysed in each of the VCFs for 2015 and
2016. The number of applications for investment and the number of VCF investments were calculated separately for innovative companies and non-innovative companies.

Belonging to the categories of innovative and non-innovative in this research was determined on the basis of whether the VCF referred to specific companies as innovative or non-innovative. The research also determined how many innovative companies funded by VCFs were under three years old. Innovative companies whose age was less than three years were identified in our research as young innovative companies. In addition, the research determined which type of investment in portfolio companies was used by VCFs (in the form of a contribution to equity or as a convertible loan). The average amount of VCF investment was also calculated. The survey and questionnaires were conducted in March 2016. The condition for VCF questioning was to ensure the confidentiality of the information obtained; therefore, all the data in the research are presented in a generalized form. Our research did not consider the investments of private equity (PE) funds, as such investments are made in more mature companies usually not subject to VCF investments.

RESEARCH AND DISCUSSION
Quantitative indicators and the structure of demand for VCF investments subsidized by the state

One of the problems of the VC industry is the demand for VCF investment (and from other venture investors) and its stimulation (Lerner, 2010). Table 1 shows the indicators of demand for VCF investment in Latvia subsidized by the state.

Table 1
The number of applications for investment considered by VCFs in 2015-2016

<table>
<thead>
<tr>
<th>Year/Number of applications considered</th>
<th>2015 (Number)</th>
<th>2015 (%)</th>
<th>2016 (Number)</th>
<th>2016 (%)</th>
<th>Total in 2015-2016</th>
<th>2015-2016 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of applications considered</td>
<td>769</td>
<td>-</td>
<td>568</td>
<td>-</td>
<td>1337</td>
<td>-</td>
</tr>
<tr>
<td>Number of applications from innovative companies</td>
<td>317</td>
<td>41.2</td>
<td>251</td>
<td>44.2</td>
<td>568</td>
<td>42.5</td>
</tr>
<tr>
<td>Number of applications from non-innovative companies</td>
<td>452</td>
<td>58.8</td>
<td>317</td>
<td>55.8</td>
<td>769</td>
<td>57.5</td>
</tr>
</tbody>
</table>

Source: Authors’ data (based on a survey of VCFs in Latvia)

In 2015-2016, VCFs received 1337 applications for investment. Of these applications, 568 were from innovative companies (42.5%) and 769 (57.5%) were from non-innovative companies. (VCFs with private capital were not registered and did not operate in Latvia during the considered period of time.) If we take the average data on the number of applications per year and per VCF, it turns out that a state-subsidized VCF received an average of 134 applications per year, of which 57 applications were from innovative companies. According to the National Venture Capital Association (NVCA) and the British Venture Capital Association (BVCA), VCFs most often fund young innovative companies with a potential for rapid growth (NVCA, 2017; BVCA, 2017). In the rating of the Venture Capital and Private Equity Country Attractiveness Index, the United States is the most attractive country in the world for venture capital investment, and
the United Kingdom ranks second (Groh, Liechtenstein, Lieser, 2016). Based on the information that the main investment target of VCFs in the US and the UK are young innovative companies, we can conclude that the bulk of applications for VCF investment come from young innovative companies. Consequently, the structure of the investment applications (innovative/non-innovative companies) received by VCFs in Latvia differs significantly from the structure of the investment applications received by VCFs in the US and the UK.

**Correlation of the quantitative indicators of the demand for investment and the supply of investment by VCFs**

Rose (2012) notes that a VCF usually considers about 400 companies, of which it invests in only one. That is, in the US VCF investment is received by 0.25% of companies that apply for it. Mason and Harrison (2003) state that some VCFs in Europe even have to return funds to investors because they cannot find suitable investment opportunities. They note that according to the EVCA, only 3–4 out of 600-700 business plans in Europe are funded every year (an average of 0.54%). Murray (2008) finds that regional VCFs in the UK have selected 48 out of 2,680 applications for investment received (1.79%). If we apply the above data on the share of applications received for VCF investment in the US, Europe and the UK for the selection of companies to Latvian VCFs, then each VCF, for the two considered years, should have invested in one or several companies. If we consider only the applications Latvian VCFs have received from innovative companies, the indicator of the amount of investments should be even lower; that is, altogether, five Latvian VCFs in two years should have invested in 2-3 innovative companies. The data we obtained testifies that there is a very low demand for VC in Latvia. In the first place, there is a lack of demand for VCF investment from innovative companies. It seems logical that the low demand for VCF investment should have a negative impact on the quality of selection of companies for investment. This, in turn, has a negative impact on the results of VCF investment subsidized by the state.

Let us compare the number of applications received from enterprises in 2016 and the number of companies registered annually in Latvia. In 2016, only 11,206 new companies were registered in Latvia (Lursoft, 2017). Accordingly, in 2016, applications for VCF investment were submitted by 568 companies or about 5% of the total number of annually registered companies. 0.33% of the number of annually registered companies obtained VCF investment. The data on the number of investments made by VCFs in Latvia for 2016 practically coincide with the data for 2015 – 0.35%, which is almost 6 times less than the average European indicator and 40 times less than in the US (Prohorovs and Beizitere, 2015).

Table 2 presents data on the amount of investments made by state-subsidized VCFs in Latvia. In total, 85 investments were made in 2015-2016. Let us compare the number of investments made with the number of applications received for VCF investment.
Table 2

The number of investments made by VCFs in 2015-2016
(including 21 investments made in the form of soft loans).

<table>
<thead>
<tr>
<th>Year/Number of applications considered and investments made</th>
<th>2015 (Q-ty)</th>
<th>2015 (%)</th>
<th>2016 (Q-ty)</th>
<th>2016 (%)</th>
<th>Total in 2015-2016</th>
<th>2015-2016 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of investments made</td>
<td>47</td>
<td>-</td>
<td>38</td>
<td>-</td>
<td>85</td>
<td>-</td>
</tr>
<tr>
<td>Number of investments made in innovative companies</td>
<td>19</td>
<td>40.4</td>
<td>9</td>
<td>23.7</td>
<td>28</td>
<td>32.9</td>
</tr>
<tr>
<td>Number of investments made in non-innovative companies</td>
<td>28</td>
<td>59.6</td>
<td>29</td>
<td>76.3</td>
<td>57</td>
<td>67.1</td>
</tr>
</tbody>
</table>

Source: Authors’ data (based on a survey of VCFs in Latvia)

In 2015-2016 state-subsidized VCFs in Latvia made investments in 6.3% of companies that submitted applications. Based on the data presented in this section on the ratio of companies filing applications and receiving VCF investments in the US, Europe and the UK, it can be concluded that the share of investments made in relation to the number of applications received was 25 times more than in the US. And it was almost 12 times more than in Europe and 3.5 times more than in the UK's regional VCFs. These data may indicate either a very high quality of applications for investment or a low quality of the selection of investment projects. According to the available data, as of 1 September 2017, none of the projects reviewed in our research received investment of the A round. Of the previous two VCF generation programs (the Programs of 2007 and 2010), only one portfolio investment provided a successful exit (sale of the company Naco Technologies to a strategic investor). Therefore, we suppose that the project selection ratio of 6.3% is the result not of a high quality of investment projects, but of a low demand for VCF investment in Latvia and not enough stringent criteria for selecting projects from the VCF side.

Applications for financing from young innovative companies and VCF investments in young innovative companies

Table 2 shows the number of investments that have been made in innovative companies. The share of VCF investment in innovative companies was 32.9%, which is lower than the share of applications from innovative companies (42.5%). Meanwhile, VCF investment in innovative companies was even less – 29.6% (Table 3.) For comparison, in the Estonian Development Fund, which invested in new technologies jointly with private investors, the share of innovative companies was 2/3 of the number of investments (Kitsing, 2013; Estonian Development Fund, 2013). That is, the share of investments of Estonian state VC with the participation of private investors in innovative companies was 2 times more than that of the VCFs of Latvia. If we deduct from the investment of all five VCFs examined in the research the investments of one fund, which, in accordance with the investment memorandum of the fund, finances only young technology companies, it turns out that the share of investments of the remaining four VCFs in innovative companies will only be about 24%. However, according to Cumming and Johan (2009), pre-seed VCFs subsidized by the government invest in high-tech companies no more than private VCFs.
The fact that VCFs subsidized by state capital avoid financing young innovative companies and seek to finance the activities of non-innovative companies is confirmed by earlier data that, despite the fact that state-subsidized VCFs are the first investors in 66.7% of cases, they made 55.3% of the investment in expanding the activities of non-innovative companies (Prohorovs and Jonina, 2017).

We also calculated that the share of investments given to innovative Latvian companies (in relation to the applications received from them) was 4.9%. (The share of financing of non-innovative companies by Latvian VCFs in relation to the number of applications received was 7.4%). That is, the criterion of "stringency" of selection of innovative companies from VCFs in Latvia was only 1.5 higher in relation to non-innovative companies that received investments from state-subsidized VCFs.

We also estimated that, of the investments made by VCFs in innovative companies, 89.8% was made in companies whose age does not exceed three years. Of 28 innovative companies that obtained VCF investment, 24 companies were under three years old. These facts show that among innovative companies it is the young innovative companies that are applying for investment from state-subsidized VCFs.

It could be assumed that one of the goals of state-subsidized VCFs is to finance young innovative companies. RandD and innovativeness are key to a (potential) company / national champion (Schlepphorst, 2016). Moreover, the ability to turn ideas into new products and services that people need is a source of prosperity for any developed country, since economic growth is due to new technologies and their creative applications (Sappin, 2016).

It is VC investment that provides financing for young innovative companies with the potential for rapid growth (Prohorovs and Pavlyuk, 2013). In this light, the beneficiaries of VCF investment should be young innovative companies. To some extent, financing of young innovative companies could justify the not-so-stringent selection criteria for portfolio companies on the part of VCFs subsidized by the state. That is, state-subsidized VCFs could concentrate on financing only young innovative companies, as such companies cannot obtain bank financing (Veugelers, 2011; Reid and Nightingale, 2011; Snieska and Venckuvienė, 2011; Prohorovs and Jakusonoka, 2012).

The data we obtained testify that state-subsidized VCFs in Latvia do not seek to finance young innovative companies. In our opinion, the main reason for this is the highest level of information asymmetry in the financing of young innovative companies.

**The amount of VCF investment, the number of portfolio companies and forms (types) of investment**

In the process of researching the quantitative indicators of supply of state-subsidized VCFs in Latvia, we revealed that, of investment made by VCFs in innovative companies, 41.7% was made in the form of equity investments and 58.3% in the form of convertible loans. That is, of 28 innovative companies that received state-subsidized VCF investments, 16 received not equity investments, but a convertible loan. This fact may indicate that VCFs subsidized by state capital widely apply methods of financing of private VCFs and are also cautious about investing in innovative companies, despite their small share among portfolio companies. Table 3 shows other quantitative indicators of state-subsidized VCFs.
Table 3

Investment in innovative and non-innovative companies made by VCFs in 2015-2016

<table>
<thead>
<tr>
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</tr>
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<tbody>
<tr>
<td>Total investment made</td>
<td>18,496</td>
<td>-</td>
<td>13,882</td>
<td>-</td>
<td>32,378</td>
<td>-</td>
</tr>
<tr>
<td>Investment made in innovative companies</td>
<td>5,951</td>
<td>32.2</td>
<td>3,620</td>
<td>26.1</td>
<td>9,571</td>
<td>29.6</td>
</tr>
<tr>
<td>Investment made in non-innovative companies</td>
<td>12,545</td>
<td>67.8</td>
<td>10,262</td>
<td>73.9</td>
<td>22,807</td>
<td>70.4</td>
</tr>
</tbody>
</table>

Source: Authors' data (based on a survey of VCFs in Latvia)

The average investment of the five VCFs in portfolio companies was 381 thousand EUR. However, if the number and volume of investment of VCFs specializing in seed financing and the fund that specializes in investing in later stages of financing is deducted from the total number and volume of investment of all VCFs, the average investment of "universal" VCFs with state capital will be 509 thousand EUR. Let us compare the investment of "universal" VCFs with the investment of VCFs specializing in seed financing of high-tech innovation companies. The average investment made by these seed VCFs in the form of soft loans amounted to 50 thousand EUR. Meanwhile, the amount of investment made in the form of convertible loans and/or equity amounted to 108 thousand EUR. Hence, the volume of average investment by “universal” VCFs was 4.7 times higher than in VCFs that focused on seed-stage financing.

On average, the portfolio of universal VCFs had about 20 companies. Since the average investment of universal funds was 5 or more times higher than the investment of seed VCFs, it can be assumed that the second reason for the lack of desire to finance innovative companies (except for a higher level of information asymmetry) is the relatively small amount of investment in young innovative companies. Each of the universal VCFs we considered had an average capital of about 10 million EUR. Therefore, a decrease in the average investment from 509 thousand EUR to, say, 200-300 thousand EUR doubles the administrative burden on VCF managers. It seems logical that with a fixed commission fee for managing VCFs, it would not be beneficial for managers of small-sized VCFs (GPs) to reduce the indicator of the average investment amount.

CONCLUSIONS

Having conducted research on the structure of the demand and supply of state-subsidized VCFs, we fully confirmed our hypothesis that most of the investments made by state-subsidized VCFs in Latvia are not investments in young innovative companies. The share of young innovative companies that received VCF investments was 28.2%. It should be noted that among all innovative companies that received investments from VCFs, young innovative companies received 89.8% of it. This fact shows that when investing in innovative companies, state-subsidized VCFs prefer to invest in young innovative companies.
We found out that the share of applications for VCF investments from innovative companies was 42.5% and the quantitative share of VCF investments among innovative companies was 32.9%. That is, the share of applications that received state-subsidized VCF investments among innovative companies was 1.5 times less than that of non-innovative companies. The volume of VCF investments made by VCFs in innovative companies was even less – 29.6%. The share of investments in innovative companies of the three universal VCFs and one VCF specializing in the late stages of VC investments was only 24% of the amount of investments made by these funds.

The data we obtained show that, unlike VCFs of the US and the UK, Latvian VCFs subsidized by the state and not specializing in financing innovative companies in the initial stage of financing do not seek to finance young innovative companies (and innovative companies).

Firstly, it is likely that VCFs face the fact that innovative companies that seek investment not only have a higher level of information asymmetry, but also correspond less to the funds’ investment criteria compared to non-innovative companies. Secondly, however, comparing the size of VCFs, their specialization in financing stages and the amount of investment they made, it can be concluded that it is not economically profitable for VC funds to fund innovative companies in the initial stages of financing with a fixed commission for managing the fund. This is confirmed by the fact that the average investment amount of a Latvian universal VCF is 4.7 times higher than the average investment amount of a VCF specializing in financing young innovative companies. This means that with a small fund (in our research – three funds of 10 million EUR each), each of these funds would have to make not ~20 investments, but ~90, which would significantly increase the administrative expenses of the fund. The results of our research show that the third reason for VCFs’ unwillingness to invest in young innovative companies is the small demand for VCF investment from innovative companies (only 42.5% of the total number of applications). Herewith the demand indicators for VC investments are low not only among innovative companies but also among all companies in Latvia. In 2016, only 568 companies submitted applications for investments to VCFs, or about 5% of the number of annually registered companies. VCFs invested in 0.33% of the number of companies registered annually in Latvia. We also compared the data we obtained on the ratio of demand for VC and the supply of VCF venture capital in Latvia, with similar data on demand and supply of VC in the US, Europe and the United Kingdom.

State-subsidized VCFs in Latvia made investments in 6.3% of companies that submitted applications. The share of investments made in relation to the number of applications received was 25 times more than in the US. And it was almost 12 times more than in Europe and 3.5 times more than in the UK’s regional VCFs. These data may indicate the low quality of the selection of the companies to invest in, due in part to the low demand for VC investment.

It is possible that Latvian VCFs subsidized by the state, in order not to lose some of the state financial resources allocated for investment (as this will reduce the commission income for the management company), finance lower quality companies and companies that are not suitable for VC investments. That, in turn, can have a negative impact on the results of the investment from state-subsidized VCFs.

It is obvious that applications for VCF investments of poor quality should be rejected. It follows from this that there cannot be an equilibrium between supply and
demand for VC investment. Therefore, the goal of government incentives for VC, along with ensuring the financing of innovative projects, should be to balance the quality supply and demand of VC, instead of supply and demand in general.

The data of our research show that in Latvia, the major bottleneck in this balance is the lack of quality demand for VC.

The availability of supply from local universal state-subsidized VCFs is not the primary factor hindering the financing of innovative Latvian companies. VCFs of Latvia subsidized spent 67.8% of VCF investments for 2015-2016 (EUR 22.8 million) on financing non-innovative companies. In our opinion, this amount of financing could be aimed at developing and improving the quality of demand for VC among innovative companies and, possibly, improving the quality of VC supply.

There are at least three reasons for such a proposal. Firstly, in recent years the probability of promising companies obtaining investments has increased due to the fact that VC has become very internationalized (Lerner, 2010). Secondly, the likelihood of promising young innovative companies obtaining VC investment in recent years has increased due to a very significant growth in crowdfunding. (The volume of the equity crowdfunding market in 2015 amounted to 2.5 billion US$. In 2015, the total investment from crowdfunding exceeded the investment of business angels and is about 70% of VC and PE investment (Crowdfunding Industry Statistics 2015-2016)).

Thirdly, as the Latvian economy develops, the number of private VC investors, including business angels, investment companies and regional VCFs ready to finance promising companies, is increasing. On the basis of the data we obtained, we believe that the calculation of the qualitative demand (the necessary volume of venture investments), the number of quantitative and volumetric indicators of VC demand, could be applied based on the number of young innovative companies applying for VC investment. For this, the proportions of the number of applications and the number of investments could be applied, for example, 2% (slightly higher than in regional funds of the UK and 4 times higher than in Europe in general). This value should be multiplied by the average amount of investments received by a similar category of companies for the previous year. As there are changes in the indicators of the country's economic growth and fluctuations in investment cycles for venture investors, it is necessary to adjust the indicator obtained taking into account possible changes in these two parameters.

**RECOMMENDATIONS FOR FURTHER RESEARCH**

One of the relevant issues for state support of VC is the criteria for selecting companies for investment from state-subsidized VCFs (or other forms of state support of VC investment in innovative companies). The scientific literature applies the term "young innovative company", often adding "with the potential for rapid growth". However, to some extent almost every company is innovative. Therefore, a certain classification or a scale of levels of innovativeness and criteria of “youth” for companies is required. Of course, one could be guided by whether the company developed a disruptive innovation in accordance with the theory of disruptive innovations by Clayton Christensen (Christensen, 1997). However, a very small number of young innovative companies can create disruptive innovations. Probably, it is possible to consider the criteria for assessing the innovativeness of companies, such as referring to the company's products as high-tech or identifying the level of added value in the company’s product. Determining the criteria for companies’
belonging to the categories of innovative and young so that state-subsidized VCFs can select them for financing may have both theoretical and practical significance.

REFERENCES


FACTORS OF PROFITABILITY GROWTH AS A SUSTAINABILITY DRIVER IN THE BANKING SECTOR

Kamilya Mustafina
Andrejs Limanskis

ABSTRACT
The Global Financial Crisis clearly demonstrated the dependence of the global economy on the banking sector’s stability. Thus, the main question which arises is sustainability of the banking industry.

The purpose of this paper is to research the factors that ensure sustainable growth in the banking industry. The main reason why sustainability of banks is crucial to the economy is the decision-making process implemented by financial institutions, universal and investment banks in particular, in relation to attraction and distribution of investments among clients and provision of risk management services, for profit.

The methodology used in this paper was a literature review on sustainability of banks and comprehensive analysis of a representative bank in the form of Danske Bank from the point of view of the drivers of profitability and capitalization. Several factors which contribute to the ability to withstand the current turbulent business and economic conditions are: mergers and acquisitions, governance, and pursuit of innovation. The research was mainly conducted through the literature review. Both quantitative and qualitative methods were used to conduct the analysis. The originality lies in an analysis based on the financial statements of the bank for the last 3 years with a focus on the profitability and capitalization dynamics under sustainable growth factors. The fair price of the share will be derived based on the given data and analysed against the current market price.

Keywords: sustainability, banking, dividend discount model, Danske Bank, profitability growth

INTRODUCTION
After the 2008 financial crisis, the financial system all over the world was unstable. In fact, the Global Financial Crisis clearly demonstrated the dependence of the world economy on the banking sector’s stability. The relevance of this research is reflected in the fact that nowadays, financial institutions significantly contribute to the overall economy of a country as banks serve significant functions such as ensuring an efficient system of payments, and they play the role of intermediary between lenders and depositors. Thus, the main question that arises is the sustainability of banks and the factors along with the reasons that ensure the sustainability of the financial sector. Given the definition of the banking sector in its traditional meaning as a complex system of acting as an intermediary between lenders and borrowers, the institutions included in this definition are not only investment and commercial banks, but also leasing companies, finance institutions and so on. The contribution of this research is presented in a context of limited availability of the analysis of the effects of sustainability issues on banking’s profitability. The financial sector serves 3 main functions: provision of credit, liquidity and risk management (BailyandEliott, 2013). The banking sector is the main source of cash for businesses and households when making investments, as banks are the ultimate providers of loans and mortgages, whereas at the same time, the financial sector provides risk management
services through the usage of such financial instruments as derivatives. There is no clear
classification of types of the banks, as many banks can offer several types of services
simultaneously; however, the main types recognized are the following: commercial
banking, investment banking, Islamic banking, offshore banks, universal banking, etc.

The aim of this research paper is to analyse the reasons and factors for sustainability
in the banking sector as well as the drivers of profitability growth on the example of
Danske Bank and to apply the Dividend Discount Model in evaluating the share price of
Danske Bank in order to make recommendations for potential investors.

The following tasks will be completed for achievement of the aim:
1. Analysis of Danske Bank financial statements for the last 3 years will be
   conducted;
2. Certain profitability factors will be highlighted;
3. The necessary assumptions for application of the Dividend Discount Model
   (DDM) will be justified;
4. The theoretical fair price of the share will be calculated and compared with the real
   market price.

The hypothesis of the paper is mainly based on the comparison of the calculated
theoretical value of the share with the real quoted market price and its deviation.

In order to write the research paper, both qualitative and quantitative methods were
applied. The qualitative part is mainly based on the literature review, whereas the
quantitative methods include the calculation of the theoretical value of the share price,
design of the graph and analysis of the financial statements of Danske Bank by calculating
the absolute/relative changes between the consequent periods and relevant ratios. The
paper is designed in the following way: Section 1 provides a general analysis of the
sustainability factors in the banking sector based on the analysis of the literature, whereas
Section 2 specifically concentrates on Danske Bank as a representative and applies the
theoretical model from Section 1. Throughout the paper, all necessary definitions and
explanations will be provided.

ANALYSIS OF SUSTAINABILITY FACTORS

To start with, the sustainability concept should be defined. Hiojtink (2005, p.7), in
her paper, summarizes the following definitions of the sustainability concept: ‘Creating
long-term shareholder value by embracing opportunities and managing risks derived from
economic, environmental and social development’ and ‘Evaluating business from a triple
bottom line perspective, incorporating economic, environmental and social value issues
into decision-making’. Overall, the main idea of sustainability revolves around 3 main
dimensions: economic, environmental and social. The sustainability of organizations is
closely connected with their core functions. As regards banks, the core function of which is
the provision of financial services, several important factors which contribute to the ability
to withstand the current turbulent business and economic conditions are: mergers and
acquisitions, the regulation and contagion effect, and disruptive technologies. These factors
directly affect profitability in banks’ income statements, either positively or negatively. In
fact, the process of introducing and integrating new technologies or being in compliance
with regulatory measures is costly, whereas in the long term the indirect benefits in terms
of customer loyalty and reduced costs, which is actually hard to directly attribute to the
abovementioned factors, can be enjoyed by institutions. For instance, the effectiveness of risk management cannot be measured: the losses from unethical behaviour can be measured and traced (in terms of lawsuit costs and related fines), whereas the most challenging part is to link the effect on revenues of employees’ compliance with risk management policies and the contribution of trainings.

The challenging factor is to assess the risks associated with establishing a sustainably responsible organization in order to decide on the strategic moves to balance 3 factors: the size of the bank, ensuring transparency and at the same time being innovative. The tricky part is that the first thing which always suffers when an organization pursues a cost-cutting policy is corporate sustainability, as ethics and use of environmentally friendly materials/products are substituted with cheaper alternatives which bring short-term benefits at the cost of long-term ones.

Mergers and Acquisitions
Over the past decade, the banking sector all over the world has been characterized by an increased number of mergers and acquisitions (MandA) processes which increase the market share of banks as a result of mergers of several banks (Hoskins and Labonte, 2015: p. 5). Size matters when it comes to the banking industry; however, it also imposes potential threats. MandA practices are one of the main reasons for banking sector sustainability and stability in terms of not only the provision of MandA services, but also being involved in the merger itself. Nevertheless, there are two sides of the coin. Increased market share leads to risk diversification and economies of scale benefits while, at the same time, being involved in a merger is a costly process which results in an increased complexity of the processes (Accenture, 2012). MandA, particularly international mergers, also involve the cross-border activities performed, enabling entry into foreign markets (Deloitte, 2014).

In fact, the increased MandA activities can be explained by the number of bank failures after the Global Crisis. According to Ellison (2014), in the United States 150 banks stopped their operations, whereas approximately 140 banks were significantly weakened by the mortgage loans position in the assets side over the period of 2009-2010. The quantity of banks with capitalization of less than 100 mln. USD dropped over the period of 1984 to 2014, whereas the market share of banks with capitalization of over 10 bln. USD increased over the same period of time (Hoskins and Labote, 2015: p. 5).

One of the main advantages of larger banks is benefits associated with costs based on lower fees and better efficiency in terms of economies of scale, whereas the main disadvantage is systematic risk. Another strength of larger banks is their ability to generate revenue from the provision of various types of financial services, including investment banking and securities trading. As a result of the financial crises, small or medium-sized banks either merged their activities with other banks or were ‘swallowed’ by larger banks, leading to a decreased number of banks in the financial world. Additionally, PWC (2012) emphasizes the fact that economic, social and governance factors affect the valuation of the acquiring company in a number of ways, both direct and indirect. The direct ways are basically savings and revenue growth, whereas indirect factors include brand recognition, customer loyalty and better risk management. The interesting fact is that according to research performed by the PWC team (2012), the majority of acquired companies with poor ESG (economic, social and governance) factors are expected to be sold at a discount,
while acquirers are not willing to pay a premium for good ESG results as they assume that the performance is already reflected in the valuation numbers.

**Governance**

Sustainability of the banking sector is closely related to regulatory measures which aim at ensuring banks’ ability to withstand the changing economic and political environment and ensure the transparency of operations. In fact, the main distinguishing factor of the banking industry is the regulatory factor, which is banks’ blessing and curse at the same time. Why? We all remember the 2008 crisis, which proved the neglectful attitude of financial institutions’ employees towards society for the sake of their own profit. There are many disputes concerning the effectiveness of regulatory measures aimed at risk management practices, yet recent scandals such as the LIBOR and FOREX benchmark manipulation that occurred in 2013 clearly demonstrate that even though so many lessons were learnt, and actions were taken, fraud still exists in the financial world. The economic situation of entire countries is highly connected with the smoothness of banking systems’ operations. That is why banks are among the heavily regulated institutions that have to follow various requirements. One of the main goals of policymakers is to protect consumers (which constitutes the social part of the sustainability concept) and to ensure a stable situation in financial markets (Labonte, 2015). In fact, bank size and regulatory measures are connected with each other as size determines the level of regulation of the financial institution (Deloitte, 2014). In addition, Deutsche Bank, in its sustainability concepts, promotes the following approach: risk management, opportunity and transparency (Borysova and Stobbe, 2015).

One thing that needs to be defined in this part of the paper is ‘contagion’, which can refer to the systematic risk of the spill-over effect of the shock of one bank on other banks (OECD, 2012). The global financial crisis was in fact characterized by strong contagion, as illustrated in Plate 2 (Ahrend and Goujard (2011) as cited by OECD (2012: p. 5)). The contagion effect is directly linked with resilience as it measures a bank’s ability to withstand the failure of a connected bank. In fact, 3 main types of contagion are recognized, including ‘direct financial connections, exposure to the common sources of risk and informational contagion’ (Wyman, 2015). ‘Direct financial connections’ refer to the transactions between banks in the form of lending and borrowing, derivatives trading and so on. Under conditions of uncertainty in the market, ‘information contagion’ appears to be especially harmful due to the panic in the market and lack of reliable information (Wyman, 2015).

Bank crashes are basically linked to liquidity and insolvency problems when depositors simultaneously withdraw their deposits from banks and banks cannot fulfil all the requests. The main point is that this contagion affects banks not just domestically, but on the international level as well (which was actually proven by the 2008 crisis) (OECD, 2012).
Apart from this, after the 2008-2009 crisis, a number of policies were established to minimize the risks of insolvency, bank runs and contagion in order to promote stability in the financial sector (Wyman, 2015: p. 5). Plate 3 (Wyman, 2015: p. 5) summarizes the regulatory changes since the crisis; to reduce the risk of insolvency, Basel III was introduced along with stress-testing and modified leverage ratios, while to reduce the risk of runs, minimum liquidity ratios and funding ratios for banks to follow were set. As regards contagion, much of the effort was put into decreasing the counterparty risk and risk of default.

<table>
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<tr>
<th>Financial stability policy lever</th>
<th>Regulatory changes</th>
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| Reducing solvency risk          | • Revised risk-based capital standards (e.g. Basel 2.5, Basel 3)  
• Establishment of Comprehensive Capital Adequacy and Review (CCAR) stress testing exercise  
• Modifications to the Supplementary Leverage Ratio (SLR) and adoption of a stricter enhanced SLR for larger banks  
• Proposed introduction of TLAC and GSIB capital surcharges  |
| Reducing risk of runs           | • Adoption of Liquidity Coverage Ratio (LCR) standards for minimum levels of cash and liquid assets  
• Net Stable Funding Ratio (NSFR) standards (proposed by BCBS)  |
| Reducing risk of contagion      | • Requirement to clear most swaps using a central counterparty  
• Margin requirements for all uncleared swaps (proposed)  
• Changes in tri-party repo market clearing to reduce intraday credit  
• Single Counterparty Credit Limits (to be re-proposed)  
• Introduction of the assumption in CCAR stress test for larger banks that each firm’s largest counterparty defaults  
• Increased capital surcharge for firms reliant on short-term wholesale funding (proposed)  
• Publication of firm-level stress testing results  |

Plate 2. Post-crisis regulation requirements adopted mainly in the US (Wyman, 2015: p. 5)

To sum up, the regulations imposed on banks are in fact costly and actually have
significantly reduced banks’ flexibility. Nevertheless, in the changing political environment, the future is ambiguous. For example, people expect deregulation in the banking industry due to Trump’s campaign in the US (Spierdijk, Shaffer and Considine, 2016).

**Fintech companies as the stimulus for innovation in the banking industry**

The changing economic and political environment is forcing banks toward continuous change and improvement. Currently, organizations are gradually starting to shift their focus to being innovative due to the increased competitiveness in the market. Introducing innovative products and services is the key factor in these social and economic conditions, which constitute two of the three main pillars of the sustainability concept. For banks, the stimulus for changing their traditionally established operations is the appearance of new entrants and strong competitors on the market in the form of fintech companies, which started to gain popularity several years ago. So, what is a fintech? Fintech companies are technology-driven companies that contribute to a more efficient and effective way of using IT (information technologies) in the provision of financial services. According to McKinsey (2016), fintechs are ‘start-ups and other companies that use technology to conduct the fundamental functions provided by financial services, impacting how consumers store, save, borrow, invest, move, pay, and protect money’. Stephens (2016) states that over the last 5 years over 12 billion USD has been invested in fintech companies that demonstrated considerable growth. There is a lot of optimism regarding the future of fintech companies and this is clearly evidenced in the amount of investment, shown in Plate 4 (Dietz, Khanna and Olanrewaju et al., 2016: p. 1). Currently, the fintech companies that can be viewed as competitors for traditional banking systems are in fact forcing banks to become more open to innovations and adopt more technological advances.

**Plate 3.** Global investment in financial technology in billions of USD over the period of 2008-2014 (Dietz, Khanna and Olanrewaju et al., 2016: p. 1)
The era of physical provision of financial services by banks is coming to an end; now virtual experience is becoming increasingly valuable as it provides higher value for the customer in terms of time saved. Interests and preferences are shifting through the technological progress that allows fintech companies to offer comparatively better services for customers, considering their time and money. Fintech companies such as Apple and Google also use their brand loyalty to offer and promote their financial service provision. Their access to data through constructing a ‘comprehensive data ecosystem’ combined with innovative analytical technologies will allow these giants to offer better services which will be more customer-oriented (McKinsey, 2016). The potential opportunity for banks is their relative strength on the market, which will allow them to move towards technological efficiency in the near future.

It also appears that regulators treat fintechs positively, as recently the Office of the Comptroller of the Currency (OCC) (2016) announced a proposal to grant limited banking licenses to financial technological firms. Adrienne Harris, the Assistant to the President for Economic Policy in the USA, called fintechs ‘the engine of transformation' due to the fact that technological progress may significantly affect the relevance of banks, whereas at the same time it is the main cause of moving towards the provision of financial services in a more efficient and effective manner. This is why introduction of disruptive technologies by banks to stay competitive and further growth in the market is just a matter of time.

THEORETICAL FRAMEWORK

In light of Section 1, we suggest the following framework for factors driving banks’ profitability based on the following dimensions: MandA, governance and innovation.

![Figure 1. Framework for sustainability factors driving profitability growth](image)

CASE ANALYSIS

PwC has stated that ‘sustainability issues have business implications for business’ (PwC, 2012). Potential risks caused by sustainability issues include fines, litigations, reputation, scarce materials, and increased regulation. In fact, ethical behaviour and
involvement in sustainability programmes allow for improved reputation and customer loyalty, improved risk management, less regulation, operational efficiency, etc. According to the PwC report (2012), 14 companies that were involved in the ‘Green Portfolio Program’ ended up saving more than 365 mln. USD.

We decided to choose Danske Bank as a representative for analysis on the basis of the framework generated in Chapter 1. Danske Bank is a representative of universal banking in the Nordic region, founded in 1871 and listed on the Copenhagen Stock Exchange, with its headquarters in Copenhagen, Denmark (danskebank.com, 2017). In fact, it is difficult to measure the benefits of corporate sustainability on the profits of a bank; nevertheless, the positive dynamics on the example of Danske Bank are clearly evidenced in the dynamics of the market price. The first Corporate Responsibility Report produced by Danske Bank is dated 2010.


Plate 4 demonstrates the increase in price for Danske Co over the last 5 years. The lowest point was in May 2012 with a closing price of less than 80, while a peak of approximately 243 was reached in March 2017 (yahoofinance.com).

About Danske Bank and its governance

We have read the official published reports on Danske Bank’s corporate responsibility over the last 3 years. Corporate responsibility starts with setting the right vision, mission and strategic cores. The Wells Fargo ethical case of 'Eight is Great' clearly demonstrated the importance of setting the right motto in the banking industry. Danske Bank supports initiatives and adopts sustainable practices by claiming to stick to the following features: expertise, integrity, value creation, agility and collaboration (Plate 5).
In its corporate sustainability report of 2016, Danske Bank emphasizes the following goals outlined by the UN that they intend to pursue: quality education and decent work and economic growth (Danske Bank, 2016). To achieve quality education, in 2017 they will provide their support to 10 thousand young people in order to improve financial knowledge, while to reach the second goal Danske Bank will support around 2 thousand start-up businesses and guide 800 thousand visitors (Danske Bank, 2016). According to the corporate responsibility report, in 2016 Danske Bank helped 7,408 representatives of the younger generation to improve their financial literacy by organizing such events as Money Week, the SMART money programme and Young Dreams workshops (Danske Bank, 2016). Also, according to Danske Bank’s official website, Danske Group has been investing in green bonds since the year 2014 (danskebank.com, 2017). A green bond is a bond issued by organizations qualified on a federal level aimed at financing 'green projects' for the promotion of sustainable development (climatebonds.net, n.d.)
Danske Bank also actively promotes one of the fintech technologies – a mobile payment system called ‘MobilePay’. Balocco et al. (2010) as cited by Oliveira et al. (2016) define m-payment as ‘a process in which at least one phase of the transaction is conducted using a mobile device (such as a mobile phone, smartphone, PDA, or any wireless enabled device) capable of securely processing a financial transaction over a mobile network, or via various wireless technologies (NFC, Bluetooth, RFID, etc.’) (p. 405). The main idea behind mobile payment is that instead of using cash or cards, a person pays with a mobile phone, usually a smartphone; nevertheless, this specification can be extended to tablets, a PDA (personal digital assistant) or even laptops (Dennehy and Sammon, 2015). Some authors mistakenly claim that m-payments constitute mobile banking and vice-versa, as if the two terms describe the same thing; in fact, these are two different concepts that need to be clarified and distinguished from each other. It is true that in some circumstances mobile banking and mobile payments possess similar characteristics; nevertheless, these are two different systems. Even though it is possible to pay through mobile banking, m-payment is a more general term in this context and includes mobile banking services as well (Karnouskos and Fokus, 2009).

MobilePay enables Danske Bank to increase simplicity and accessibility in the provision of financial services. It also allows for donations to charity organizations. In the year 2016, there were more than 3 million users and 171 million transfers conducted via MobilePay in Denmark (Plate 6, Danske Bank, 2016).

Income Statement and Balance Sheet Analysis

Based on the income statement data over the period of 2014-2016, an Excel graph (Figure 1) was constructed. As can be observed, the bank’s net interest income gradually decreased, whereas net profit increased. Thus, it can be inferred that the bank’s net profit actually comes not from the core activities of commercial banking, lending and borrowing, but from investment banking activities such as trading and net premiums from insurance contracts, particularly the subsidiary Danica Pension, which positions itself as ‘the largest pensions provider in Denmark’ (Danica Pension official website, 2017). Moreover, absolute and relative changes between the two consequent years and the profitability ratios for each year were calculated based on the given income statement.
Absolute and relative changes for 2014-2015 and 2015-2016

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<tbody>
<tr>
<td>Interest income</td>
<td>(1,265)</td>
<td>(6,068)</td>
<td>-2.1%</td>
<td>-9.1%</td>
</tr>
<tr>
<td>Interest expense</td>
<td>(261)</td>
<td>(4,794)</td>
<td>-0.9%</td>
<td>-14.8%</td>
</tr>
<tr>
<td>Net interest income</td>
<td>(1,004)</td>
<td>(1,274)</td>
<td>-3.0%</td>
<td>-3.7%</td>
</tr>
<tr>
<td>Fee income</td>
<td>317</td>
<td>981</td>
<td>2.0%</td>
<td>6.7%</td>
</tr>
<tr>
<td>Fee expenses</td>
<td>849</td>
<td>116</td>
<td>17.4%</td>
<td>2.4%</td>
</tr>
<tr>
<td>Net trading income</td>
<td>6,488</td>
<td>(2,946)</td>
<td>93.9%</td>
<td>-29.9%</td>
</tr>
<tr>
<td>Other income</td>
<td>1,222</td>
<td>238</td>
<td>25.5%</td>
<td>5.2%</td>
</tr>
<tr>
<td>Income from holdings in associates</td>
<td>450</td>
<td>491</td>
<td>91.6%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Net premiums</td>
<td>3,327</td>
<td>728</td>
<td>15.6%</td>
<td>3.5%</td>
</tr>
<tr>
<td>Net insurance benefits</td>
<td>7,201</td>
<td>(2,556)</td>
<td>23.6%</td>
<td>-7.7%</td>
</tr>
<tr>
<td>Operating expenses</td>
<td>(138)</td>
<td>(857)</td>
<td>-0.6%</td>
<td>-3.3%</td>
</tr>
<tr>
<td>Impairment charges on goodwill and customer relations</td>
<td>(4,601)</td>
<td>(4,498)</td>
<td>-100.0%</td>
<td>-49.4%</td>
</tr>
<tr>
<td>Profit before loan impairment charges</td>
<td>7,488</td>
<td>6,014</td>
<td>42.3%</td>
<td>51.5%</td>
</tr>
<tr>
<td>Loan impairment charges</td>
<td>(107)</td>
<td>(3,779)</td>
<td>175.8%</td>
<td>-101.6%</td>
</tr>
<tr>
<td>Profit before tax</td>
<td>7,595</td>
<td>9,793</td>
<td>42.8%</td>
<td>122.9%</td>
</tr>
<tr>
<td>Tax</td>
<td>861</td>
<td>619</td>
<td>18.6%</td>
<td>15.4%</td>
</tr>
<tr>
<td>Net profit for the year</td>
<td>6,735</td>
<td>9,175</td>
<td>51.3%</td>
<td>232.4%</td>
</tr>
</tbody>
</table>

Profitability ratios (Excel, 2017)

<table>
<thead>
<tr>
<th></th>
<th>2016</th>
<th>2015</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross profit margin</td>
<td>54.23%</td>
<td>54.75%</td>
<td>51.69%</td>
</tr>
<tr>
<td>Profit before loan impairment margin</td>
<td>42.25%</td>
<td>29.07%</td>
<td>17.46%</td>
</tr>
<tr>
<td>Net profit margin</td>
<td>33.31%</td>
<td>21.55%</td>
<td>5.90%</td>
</tr>
</tbody>
</table>

The income statement shows that over the period of 2015-2016, the net trading income increased significantly, by almost 94% (by 6,488 mln. DKK), resulting in a higher net income, which increased by 6,735 mln. DKK in 2016. Nevertheless, 36% of the net trading income in 2016 was mainly due to the reclassified amount. The net trading income increased mainly due to the services provided to corporates and institutions, which was 61% and 70% of the total net trading income, excluding the reclassified amount, in 2016 and 2015 respectively. The net profit margin in relation to the interest income increased...
significantly, from approximately 6% in 2014 to 33% in 2016, mainly due to the increase in the net trading income.

Table 3

| Net trading income by business unit (notes to the financial statements, 2014-2016) |
|---------------------------------|--------|--------|--------|
| (millions of DKK)               | 2016   | 2015   | % of total |
|                                 |        |        | 2016 | 2015 |
| Personal Banking                | 562    | 517    | 6.53%| 7.55%|
| Business Banking                | 568    | 606    | 6.60%| 8.85%|
| Corporates and Institutions     | 5,263  | 4,799  | 61.15%| 70.08%|
| Wealth Management               | 591    | 316    | 6.87%| 4.61%|
| Northern Ireland                | 127    | 118    | 1.48%| 1.72%|
| Other Activities                | 1,496  | 492    | 17.38%| 7.18%|
| Hereof Group Treasury           | 1,634  | 276    |       |       |
| Total                           | 8,606  | 6,848  | 100.00%| 100.00%|

The analysis of the balance sheet is mainly connected with the total assets. The significant changes to pay attention to are the loans provided to the credit institutions and central banks, which rose significantly in the last 2 years (2015-2016), represented by 141,620 mln. DKK, which is 136% larger than in 2015. This was the main reason for the increase in total assets during this period. The main reason for the decrease in total assets in 2014-2015 was the decrease in trading portfolio assets.

Table 4

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<tbody>
<tr>
<td>(millions of DKK)</td>
<td>Absolute change</td>
<td>Relative change</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash in hand and demand deposits with central banks</td>
<td>(23,626)</td>
<td>42,961</td>
<td>-31%</td>
<td>127%</td>
<td></td>
</tr>
<tr>
<td>Due from credit institutions and central banks</td>
<td>141,620</td>
<td>(8,901)</td>
<td>136%</td>
<td>-8%</td>
<td></td>
</tr>
<tr>
<td>Trading portfolio assets</td>
<td>(37,340)</td>
<td>(195,494)</td>
<td>-7%</td>
<td>-26%</td>
<td></td>
</tr>
<tr>
<td>Investment securities</td>
<td>33</td>
<td>12,310</td>
<td>0%</td>
<td>4%</td>
<td></td>
</tr>
<tr>
<td>Loans at amortised cost</td>
<td>62,310</td>
<td>(13,645)</td>
<td>6%</td>
<td>-1%</td>
<td></td>
</tr>
<tr>
<td>Loans at fair value</td>
<td>24,343</td>
<td>51</td>
<td>3%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Assets under pooled schemes and unit-linked investment contracts</td>
<td>7,955</td>
<td>11,745</td>
<td>9%</td>
<td>15%</td>
<td></td>
</tr>
<tr>
<td>Assets under insurance contracts</td>
<td>19,826</td>
<td>(2,878)</td>
<td>7%</td>
<td>-1%</td>
<td></td>
</tr>
<tr>
<td>Intangible assets</td>
<td>285</td>
<td>(4,748)</td>
<td>4%</td>
<td>-42%</td>
<td></td>
</tr>
<tr>
<td>Tax assets</td>
<td>(267)</td>
<td>7</td>
<td>-17%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Other assets</td>
<td>(4,347)</td>
<td>(1,544)</td>
<td>-12%</td>
<td>-4%</td>
<td></td>
</tr>
<tr>
<td>Total assets</td>
<td>190,792</td>
<td>(160,137)</td>
<td>6%</td>
<td>-5%</td>
<td></td>
</tr>
</tbody>
</table>

80
THEORETICAL FAIR VALUE USING GORDON’S GROWTH MODEL

The theoretical fair value of the Danske Bank share (Table 5) was calculated using the Gordon Growth Model (Dividend Discount Model) and the following assumptions were made:

1. The risk-free rate is equal to the 10-year government bond yield in Denmark=0.52%;
2. Annual market return was calculated using the SandP 500 monthly returns for the last year (over the period of 1.03.2016 to 1.02.2017) and is equal to 13.04%;
3. Beta is equal to 0.81, obtained from Reuters.com for Danske Bank.
4. Dividends in 2016 were equal to 9 DKK per share.

The growth rate was calculated with 3 different methods and in the end, the final estimated fair value was equal to the average price using 3 different growth rates under the Dividend Discount Model. The cost of equity for Danske Bank was measured using the CAPM formula with the assumptions stated above and is equal to 10.66%. The theoretical fair value was derived using the DDM as of 07.04.2017.

<table>
<thead>
<tr>
<th>Growth rate</th>
<th>Summary of the results</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.14%</td>
<td>6.47%</td>
</tr>
<tr>
<td>Theoretical fair value using the DDM</td>
<td>211.32</td>
</tr>
</tbody>
</table>

At the same time, analysts’ forecasts for Danske Bank were obtained from the Financial Times Website (2017), as can be seen in Plate 8.

![Share price forecast](Image)

**Plate 8.** Danske Co share price forecast (ft.com, 2017)
Based on the given data, the expected return and expected price of the share were calculated as 250.83 DKK (in Table 6) and compared with the theoretical fair value obtained.

### Average price calculation (Excel, 2017)

<table>
<thead>
<tr>
<th>Description</th>
<th>Calculated average price</th>
<th>Analysts’ forecasted price</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price</td>
<td>231.60</td>
<td>250.83</td>
<td>241.22</td>
</tr>
</tbody>
</table>

As a result, the average expected price of 241.22 DKK per share was derived (Table 7). The market price on 7.04.2017 was 235.10 DKK (yahoofinance.com, 2017) and the difference between the calculated and real values was 6.12 DKK (241.22 DKK-235.10DKK). Thus, the recommendation as of 7.04.2017 was to buy the shares.

### CONCLUSION

Taking all these points into consideration, it can be inferred that the main reason why banks are a key to the economy’s growth is the decision-making process implemented by financial institutions, universal and investment banks in particular, in relation to the distribution of investments among the population and institutions, which is directly linked, as proven by the crisis, with a stable and healthy economy, which in return provides a pillar for banks for further sustainable growth. The main drivers of banks’ sustainability are mergers and acquisitions in terms of size, regulatory measures for ensuring transparency, and pursuit of innovation stimulated by fintech companies. As regards Danske Bank, the share price dramatically increased over the last 5 years from approximately 90DKK to nearly 235DKK. It is hard to evaluate how the commitment to sustainability development and corporate responsibility affects share price; nevertheless, positive dynamics in terms of share price can be observed clearly. Potential risks that are caused by sustainability issues include fines, litigations, reputation, scarce materials, and increased regulation. In fact, ethical behaviour and involvement in sustainability programmes allow for improved reputation and customer loyalty, improved risk management, less regulation, operational efficiency, etc. The PwC report (2012) states that 14 companies involved in the ‘Green Portfolio Program’ ended up saving more than 365 mln. USD. The main limitation of this paper is the analysis of the sample and the use of the Dividend Discount Model only to evaluate the share price. Even though this limitation may
apply, the paper is still valid. Additional methods of analysis can be applied to the object of research in the future.

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Received: 30th May 2017

ESG INVESTING: NEW CHALLENGES AND NEW OPPORTUNITIES

Jekaterina Kuzmina
Marija Lindemane

ABSTRACT
Purpose. Environmental, social and governance (ESG) investing has gained substantial force over the past few years. Worldwide, 21 trillion USD have been spent on sustainable strategies according to Deutsche Bank estimates. The latest data from the industry suggest that ESG investing is growing, and this means new challenges and opportunities for financial market participants, for example thematic investing within ESG, which should be considered as an innovative approach. The goal of this paper is to study the historical development of ESG investing, identifying potential problems in recent years. Furthermore, it is necessary to forecast potential developments on the ESG investing horizon, and to propose and test an ESG investment strategy which could outperform the market.

Design/methodology/approach. A study of the historical development of ESG investing, identifying potential problems such as lower profitability, is performed based on a literature review. Moreover, a thematic ESG portfolio adjusted to the “silver economy” trend was constructed, and its performance and spread was tested over 5 years.

Findings. The research proves that the performance of the thematic ESG portfolio adjusted to the “silver economy” trend over the past 5 years includes the positive trend of the senior population and performs better than its benchmark – the SandP 500.

Originality/value. The paper contributes to development of investment strategy in the currently popular ESG environment, providing a reference point for both institutional asset managers and private financial market investors.

Keywords: ESG investing, healthcare and wellness, “silver economy”, investment strategy

INTRODUCTION
In recent years, society’s and investors’ expectations for industry and the business world have grown significantly. As a result, in the framework of high levels of insecurity, negative reactions to globalization, and suspicion of corporations, there is increasing pressure on the business and financial world to deliver not only added value to shareholders, but also social value to society. In response to these modifications of the rules on the “playing field”, there has been a significant increase in interest for so-called ESG investing in the past few decades, and now it represents an important topic for research, receiving academic and industry attention.

At this point, it is necessary to clarify that the abbreviation ESG stands for environmental, social and governance standards. ESG can be understood as a set of principles for a company’s operations that investors hoping to demonstrate social responsibility apply to screen investment opportunities.

It should be noted that scientific and professional literature uses several terms to describe investors’ social behaviour, so that as the first goal of the current research paper, the authors wish to clarify these terms, as there might otherwise be confusion and
misinterpretation. This goal will be achieved through a study of the scientific and professional literature, and the authors intend to contribute to a better understanding and awareness of the terminology used in the eyes of all the interested parties in both academic research and the business and financial world.

Regarding usage of the ESG investing approach, there are conflicting views – on the one hand, the approach is criticized for lack of stable performance; on the other hand, it is praised for delivering added value. Moreover, representatives of the financial market are showing increasing interest in the topic. As an example, the authors would like to remember the words of Michael Baldinger, who is the head of sustainable investing at UBS Asset Management: “Incorporating sustainability metrics is no longer just a nice-to-have, or something to help you sleep at night. It’s sound investment sense”.

Paying attention to the existing debate between supporters and non-supporters, the authors intend to study the development of ESG investing, identifying potential problems, and to develop an ESG investment strategy, creating a thematic ESG portfolio adjusted to the “silver economy” trend with the intention of testing its performance in the middle term. The second goal will be achieved through a study of scientific and professional literature, proposing an analytical combination of professional and scientific views and interpretations. However, in order to achieve the third goal and in this way to contribute to the discussion on the field, the authors will develop an investment strategy and, using fundamental analysis, create an investment portfolio, testing its performance over different periods following the buy and hold strategy.

LITERATURE REVIEW AND CLARIFICATION OF TERMINOLOGY

Currently, the leading view on the financial market could be formulated as follows: a company’s management, as well as potential investors and shareholders, should look beyond traditional financial metrics, but include ESG-related factors in the management, evaluation and, in particular, investment process. Scientific research supports this view. Several examples can be found in the literature and some of the latest research papers in the field are mentioned below. De and Clayman (2015) claim that integration of ESG into the portfolio management approach should add value as it allows one to decrease volatility and increase the risk-adjusted return of the investment portfolio in the post-crisis period. Cooper et al. (2016) propose to portfolio managers a simple approach for implementation of other forms of well-being in the context of portfolio goals addressing the issues of socially responsible return. Chong and Phillips (2016) have concentrated on ESG mutual fund performance and proved that ESG stock mutual funds outperformed the SandP 500 index in the period of time when the study was conducted. Kocmanová et al. (2016) claim that the ESG approach contributes to a company’s added value; moreover, the authors propose a model for measuring sustainable value which assesses the environmental, social, and corporate governance contribution to the value creation process. Fatemi et al. (2017) show in their research paper that ESG strengths increase firm value.

Nevertheless, due to the fact that several groups, led by different motivations and expectations, are engaged in the process, the number of different terms used in the context is increasing, each highlighting a specific direction, but with substantial correspondence to one another. The first goal of the current article is to clarify the different terms used in the academic and professional literature, as this could lead to potential confusion and misinterpretation. Moreover, the overview should contribute to a better understanding and
awareness in the eyes of all the interested parties in both academic research and the business and financial world. Table 1 includes the most often mentioned terminology and proposes definitions according to the objectives of investment.

### Table 1

<table>
<thead>
<tr>
<th>Terminology</th>
<th>Objective of Investment</th>
<th>Some Authors Contributing to the Research on the Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporate Social Investment (CSI) = Responsible Investment (RI)</td>
<td>X</td>
<td>Haigh and Hazelton (2004); Scholtens (2014); Van Dyk and Fourie (2015)</td>
</tr>
<tr>
<td>Socially Responsible Investing (SRI) = Ethical Investing (EI)</td>
<td>X</td>
<td>Bauer et al. (2006); Mollet and Ziegler (2014); Seele (2015); Charfeddine et al. (2016); Revelli (2017)</td>
</tr>
<tr>
<td>ESG Investing = Sustainable Investing (SI)</td>
<td>X</td>
<td>Himick (2011); Halbritter and Dorfleiter (2015); Schramade (2016); Sherwood and Pollard (2017)</td>
</tr>
<tr>
<td>Sustainable and Responsible Investing (SRI)</td>
<td>X</td>
<td>Eurosif and some international investment banks</td>
</tr>
</tbody>
</table>

Source: created by the authors

It is worth considering that “Financial Objective (1)” should be interpreted as follows: the financial objective in the investment and management process is less emphasized even though it exists, meaning that both companies and investors tend to refrain from chasing unfairly high profit. “Financial Objective (2)” describes the situation when an increase in shareholders’ and stakeholders’ value is seen as a priority.

Under “Commitment to Social and Environmental Issues (1)”, one should understand a company’s willingness to contribute to and develop these issues, while under “Commitment to Social and Environmental Issues (2)” – the pressure to avoid particular industries or “sinners” predominates.

Studies suggest that broadly used terms include socially responsible investing (SRI) and ethical investing (EI; mainly in the UK), which are based on social criteria, for example avoiding certain scandalous industries such as tobacco or alcohol. Another common term is ESG investing, which includes criteria to match investments through the three main categories of environmental issues, social issues and corporate governance aspects. Recently ESG investing has become equal to sustainable investing (SI), while
sustainability can be achieved simultaneously on two levels: in the acting environment and in the world. A limited number of institutional investors, in describing their activities within CSR norms, use the term corporate social investment (CSI) as well as responsible investment (RI), which refers mainly to the practice of investment funds using an approach that combines investors’ financial objectives with their commitment to social concepts like social justice, economic development, peace and others, as well as environmental matters. Sustainable and responsible investing (SRI) is used as an umbrella term; it has a broader scope in comparison to the other terms. Moreover, the term is recognized by such an important organization as Eurosif – the leading European association for the promotion and advancement of sustainable and responsible investment across Europe – contributing to the development of the approach.

To sum up, there is an extensive amount of terminology used in the field, so that both researchers and professionals have to be aware of certain slight differences and apply the abbreviations in the correct manner.

THEMATIC ESG INVESTING AND ITS DEVELOPMENT

According to recent research conducted by Deutsche Bank, ESG investing has become popular in the last few years, while on the global level around 21 trillion USD was invested in ESG strategies over the past three years (Deutsche Bank (2017)). Nevertheless, despite the increasing interest among some asset managers as well private investors, ESG investing is frequently deliberated as a risk management tool – some investors are likely to look at ESG scores provided by external data providers like Deutsche Bank or Barclays Capital and apply an additional screen to their investment process, excluding the “weak links”. Therefore, a significant part of investors still remains sceptical towards the ESG investing approach.

The same view is supported by the academic research, e.g. Schramade (2015) underlines that sustainable investing under the ESG approach is much less an application success than a marketing success. Van Duuren et al. (2016), based on international research, claim that asset managers consider responsible investing options in their everyday work, while “ESG information in particular is being used for red flagging and to manage risk”. A similar conclusion can be found in a paper by Przychodzen et al. (2016) – the authors state that currently, inclusion of ESG principles by fund managers is mainly a method of risk mitigation (hedging motivation) and less a value creation tool.

However, not everyone is sceptical towards this investing approach. Moreover, it is necessary to consider that ESG investment is promoted on the international level – e.g. Eurosif (2016) proposes so-called ESG integration and defines it as “inclusion by asset managers of ESG risks and opportunities into traditional financial analysis and investment decisions based on a systematic process and appropriate research sources”. Furthermore, the organization proposes three categories for dividing the activities of portfolio managers to contribute to better comprehension.

Under category one – “non-systematic ESG integration” – ESG research and analyses should be made available to the majority of analysts and fund and asset managers; under category two, ESG research and analyses should be part of the valuation process conducted by analysts and by fund and asset managers; meanwhile, category three requires introduction of investment constraints based on the valuation process conducted by analysts and by fund and asset managers. Eurosif only considers categories two and three.
to be consistent with the definition of ESG integration. Thus, broader engagement on the practical side is required.

Despite some positive voices from the literature, a high level of interest from professionals and support from international organizations, some financial market participants are still sceptical about ESG investing. The second goal of the present paper is defined as follows: based on the literature review, to study the development of ESG investing, identifying potential problems, such as lower profitability of the approach due to the limited number of investment opportunities in recent years.

Campbell and Slack (2011) claim that “recognition of the materiality of environmental risks in banks is uncommon among sell-side analysts and that environmental narratives are often ignored and regarded as perfunctory”. Fatemi and Fooladi (2013) argue that their current approach to shareholder wealth maximization, including a focus on environmental and social issues, is no longer a valid guide to creation of sustainable wealth for a wide range of shareholders; they see the necessity of a paradigm shift. Halbritter and Dorfleitner (2015) claim that investors should not expect abnormal additional returns by investments with regard to ESG factors. Friede et al. (2015) have carried out extensive research on ESG investing performance, finding that a large majority of studies report positive findings regarding the performance of ESG investing. However, the authors also note that favourable outcomes are achieved when differentiating for regions, markets and asset classes. Research conducted by Auer and Schuhmacher (2016) has shown that in all geographic regions – Europe, the USA and Asia-Pacific – inclusion of ESG does not deliver above-benchmark performance in comparison to passive stock market investments. A study performed by Amel-Zadeh and Serafeim (2017) shows that important obstacles to the use of ESG information in the investment process and to achieving satisfying financial results include the absence of internationally recognized reporting standards and, as a result, lack of reliability, quantifiability and timeliness.

Analysing the research findings and discussing the issue with several representatives of the investment industry professionally engaged in asset and wealth management, the authors conclude that the potential negative results from ESG investing and current scepticism toward the approach could be attributed to the limited number of investment opportunities on the ESG horizon. Therefore, it is necessary to forecast potential developments on the ESG investing horizon, such as concentration on a wider spectrum of thematic opportunities. Hypothesis I is formulated as follows: the ESG investing approach requires new investment strategies and a broader investment horizon in order to satisfy investors’ needs and expectations of wealth creation.

In order to test the hypothesis, the authors have studied the views of different international banks regarding future ESG investing developments and can conclude that the ESG incorporation process is set to grow in the coming years. An increasing number of companies and, in particular, multinational corporations are going to provide reliable data concerning ESG scores and sustainability standards, including environmental, social and governmental issues. It is expected that an increasing number of asset managers will start integrating ESG into their fundamental research process (Deutsche Bank (2017); Deutsche Bank (2016); Barclays (2017)).

As a result, ESG will become a conventional investing tool, so that currently there is an evolving chance to see ESG as a value-creating thematic tool. Thus, one can consider that a new era of thematic ESG investing is starting as of 2017, while the number of
sectors and potential companies covered under ESG topics is set to increase exponentially. Plate 1 provides a schematic presentation of the “new wave” in ESG investing.

One can conclude that at the beginning of 2000, companies were mainly concerned about creating social change and having a positive environmental impact, while the degree of innovations and sustainable profits was low. As a result, investment opportunities on the ESG investing horizon were limited. Currently, one can see positive changes, such as favourable policies supporting the development and implementation of standards for social, environmental and governmental issues, increased innovations, a broader investment horizon, and a bigger profit pool across different sectors of the economy, which will contribute to greater appreciation of ESG investing in the coming years.

![Plate 1](image)

**Plate 1.** The Emerging Case for Thematic ESG Investing – Entering a New Era  
*Source: created by the authors based on Deutsche Bank and Barclays research*

Because of new developments in the field, several new sectors should be included in ESG investing themes. Preliminary considerations are presented in Figure 1, but one has to consider that the list of potential topics is not complete and should be updated. In this proposal, the authors would like to concentrate in particular on the healthcare segment; the reasons for such a decision will be explained below.
In recent decades, many studies in the fields of economics and demography have predicted the negative impact of the aging population on economic development in the coming years. According to statistics published by the United Nations, in the next 15 years, the number of individuals worldwide over the age of 60 is likely to rise by more than 50%, amounting to around 1.4 billion and making up about 20% of the total population. Moreover, it should be noted that even today the number of 65-year-olds is greater than the number of children under 5 years (United Nations (2015)).

On the one hand, the aging population is likely to create new challenges for the economy in both developed countries (such as Japan, Germany and Italy) and emerging markets (such as Russia and China), but on the other hand, new opportunities may be discovered. The reasons are to be found in the fact that the high proportion of the aging population in developed countries in particular is covered by private and/or governmental pension systems, so that purchasing power is likely to hold (Societe Generale (2017)).

As a result, the rise of the so-called “silver economy” will create additional opportunities for some specific sectors and the economy as such. For example, a paper by Kyriakou and Belias (2017) shows that an aging population is to become one of the biggest and most important market segments for the hospitality and travel industries in Greece. Another example can be found in research by Zsarnoczky (2016) focusing on the development of innovation strategies related to the ageing population and required services, which aim to provide “well-being through health monitoring, robotic assistance, electrical mobility or sport activities”. Thus, these sectors could expect significant momentum in their development and profitability. In order to gain returns from the trend
and address the necessities in a proper way, system adaptations should be enforced (for more details, see Bran et al. (2016) and Klimczuk (2016)).

Considering the growing role of the “silver economy” trend, the authors strongly support the inclusion of such topics as health and wellness in the ESG investing horizon. Moreover, the authors are eager to provide some additional explanations regarding the reasons for this sub-topic’s selection.

First, it is worth considering that nutrition should be considered as having a particular role within the healthcare and wellness topics, as it is one of the most stable sub-topics identified for a longer period of time and the new trend of organic products is set to conquer the market at large. Second, sportswear accounts for more than 1/7 of the total clothing market and according to estimates from the industry and investment bank analysts, its market size is set to increase from 4x to 5x before 2030. Third, the topic of healthcare, including medical supplies and devices, cannot be ignored. In this particular segment there are some significant changes taking place: for products to be successful on the market, it is not enough to have just regulatory approval; there is an emerging necessity for a well-developed management style – production not only with regard to potential costs, but also with regard to products’ features and added value (Deutsche Bank (2017)).

The authors expect that these sectors will be among the winners in terms of the abovementioned “silver economy” trend and consider their inclusion in the ESG investing framework as far as particular companies are managed in accordance with ESG standards.

INVESTMENT STRATEGY AND ITS RESULTS

The third goal of the current paper is developing an investment strategy and creating a thematic ESG portfolio adjusted to the “silver economy” trend with the intention of testing its performance over 5 years. Hypothesis II is defined as follows: the performance of the thematic ESG portfolio adjusted to the “silver economy” trend over the past 5 years captures the positive trend of the senior population and performs better than its benchmark – the SandP 500.

Summing up the conclusions from the literature review, thematic ESG investing is supposed to have diverse significance for asset and portfolio managers – while some individual investors on the financial market are hoping to make the world a better place to live in, managers are forced to uphold a stable financial performance. As a result, managers have to develop an appropriate strategy that will attract individual assets, but also provide a necessary and stable financial performance.

The authors propose the following investment selection approach with regard to thematic ESG investing, recognizing the value of fundamental stock analysis. The selection approach is to be considered as a bottom-up valuation tool in the search for international companies promising to provide positive results to investors in the middle term (from two to five years) and therefore to outperform the selected benchmark index – the SandP 500. The selection approach, which includes four steps, is presented in detail in Figure 2 below:
The following limitations to the investment strategy should be mentioned:

- No transaction costs and taxes are assumed.
- The investment portfolio is equally distributed (100 stocks of each company were bought in January 2012 regardless of the level of capitalization of each company).
- The authors evaluated the commitment of the companies to ESG standards, regardless of whether this constituted one-time activities or long-term sustainable development (for discussion, see Kanji and Agrawal (2016)); moreover, the amount of the companies’ investment in sustainable corporate governance is neither evaluated, nor determined, due to the absence of mechanisms to evaluate the performance (see Rundle-Thiele (2008)).

In order to verify if the investment portfolio built according to the developed strategy could outperform the selected benchmark index, a historical investment portfolio has been constructed and tested on historical market data from the period of January 2012 to May 2017.

By back-testing the performance of the portfolio over the past five years, one can see that the portfolio performed significantly better than its benchmark – the SandP 500. In the longer period – from inception – the portfolio’s performance (shown with the blue line) created value of 113.25% annually, while the benchmark’s performance (shown with the
red line) was less positive: +75.18% annually in the same period. One can follow the development of the selected strategy in Plate 2.

![Plate 2. Performance of the Test Portfolio and the Benchmark Index from January 2012 to May 2017. Source: created by the authors in Google Finance.](image)

In the short run – one year’s time – the situation was as follows (see the graph in Plate 3): the portfolio’s performance (shown with the blue line) destroyed value, showing the result of -5.83% annually, while the benchmark (shown with the red line) created additional value: +15.52% over the same period. The failure of the selected portfolio could potentially be explained by the Brexit referendum, European political uncertainty and the US elections. A more forecastable situation caused the portfolio to return to the previously shown positive results (see the graph in Plate 4): the portfolio gained +6.83%, while the result of the benchmark was +6.38%.

![Plate 3. Performance of the Test Portfolio and the Benchmark Index from May 2016 to May 2017. Source: created by the authors in Google Finance.](image)
Moreover, the authors evaluated the spread performance, and the spread’s average was positive, highlighting long-term outperformance of the portfolio over the benchmark. It should be noted that most of the spread is progressing within the first standard deviation range, highlighting its low volatility in relation to the selected benchmark, while the following exception should be considered: heavily increasing volatility in 2016.

Having checked the portfolio’s performance one can conclude that the research hypothesis has been proven – the investment strategy implementing the ESG concept and adjusted to the “silver economy” trend outperforms the market (represented by the SandP 500 index) in the middle term, so that the goals of the research – to develop a stock investment strategy and to prove the ability of this strategy to generate a good financial performance in the middle term – were achieved.

CONCLUSIONS

Based on the research, the authors are able to conclude that ESG investing has gained significant momentum over the past 3 years. Nevertheless, among portfolio and asset managers as well as some private investors, ESG investing is mostly considered as a risk management and exclusionary tool, so that further research is considered to be appropriate with the purpose of showing the sustainability of ESG investment strategy. Moreover, one can state that the investment world is entering a new era of thematic ESG investing and is in search of new market opportunities, while ageing populations should be considered as such an opportunity. It is a proven fact that the increasing retirement age and longer life expectancy have a positive effect on the overall spending pattern, supporting growth of particular sectors, so that ESG investment strategy should be adjusted to the current trend of the so-called “silver-economy” as the thematic ESG investment horizon expands.

In the second part of the paper the authors showed that thematic ESG investing adjusted to the abovementioned trend of the aging population could be considered as a successful investment strategy – by back-testing the performance of the portfolio over the past five years, with the portfolio gaining 113.25% annually, while the benchmark’s performance (the SandP 500 index) was less positive (+75.18% annually) in the same
period. Nevertheless, in the short run the portfolio destroyed value and significantly outperformed the market index by 969 basis points in a twelve-month period. The authors conclude that the high volatility of the portfolio in the short run demonstrates the necessity for further adjustments (e.g. increasing the number of sectors; selection of an appropriate benchmark index) that should be tested in future research.

In order to contribute to the scientific discussion and propose further open questions for research, the authors wish to highlight the necessity of evaluating the commitment of companies to ESG standards – one-time activities or long-term sustainable development in the field – as having a potential impact on the business model and financial performance. Moreover, previously the authors noted that the amount of a company’s investment in ESG activities is neither evaluated, nor determined, due to the absence of mechanisms, so that additional research on the field should be conducted.

REFERENCES


IS LATIN AMERICAN NEOSTRUCTURALISM SUSTAINABLE?

Matthew Barlow

ABSTRACT

Purpose. This paper offers an evaluation of whether Latin American neostructuralism or post-neoliberalism can survive the current cycle of low global commodity prices.

Methodology. The paper relates to development economics and social sciences. The research could not be categorized into one philosophical theory, so to achieve the objectives, the research design was required to utilize both positivism and non-positivism. Data which was collected from international bodies is analysed and tested along with relevant economic modelling to offer an answer to the research question. Bolivia and Argentina were selected as case studies to offer a greater dichotomy regarding the sustainability of this Latin American discourse.

Findings. The paper demonstrates a heterogeneity between the key economic performance indicators achieved in Bolivia and Argentina. The research emphasises that the management of export revenues is a key criterion for the sustainability of the paradigm along with the commodity prices. State-funded welfare policies should address the marginalization of indigenous populations to secure the prosperity of the paradigm. This paper does not join the discussion surrounding varieties of capitalism, but will acknowledge the discussion and advise on further research.

Originality. The sustainability of this economic paradigm, which gained left-wing acclaim at the turn of the millennium, is now threatened for the first time by falling export revenues. The very tenets of the paradigm are being tested. This paper is original and relevant to academics in the field of development economics, politics, and business.

Keywords: Development; natural resources; neostructuralism; post-neoliberalism; exports.

This paper is categorized as a research paper.

INTRODUCTION

The period of stability and growth in Latin America which began in the 1950s ended abruptly with the arrival of the 1980s and a major setback for development in Latin America (ECLAC, 2001). The unsustainable level of indebtedness which Latin American countries had accumulated over this period led to the subsequent financial crisis and the implementation of macroeconomic measures and rescue packages through the IMF and the World Bank (Green, 1996). The response to this crisis was the imposition of a neoliberal orthodox economic approach of globalization, free trade, privatization of state assets and market-led policies. The Washington Consensus argued that with globalization, the benefits of free market capitalism would be unparalleled and both industrialized and developing countries would achieve real economic advancement through following its strategy (Green, 1996).

The ensuing economic and political instability resulting from decades of compliance with neoliberal policies, which many in Latin America viewed as hegemony from the United States, lasted until the new millennium (CEPAL, 2012). The complete economic collapse in Argentina in 2001 was simultaneously accompanied by social uprisings in Ecuador, Bolivia and Venezuela in protest against previous government policies, which by 2002 had resulted in 44% of the Latin American population being classified as living in...
poverty with 19.4% living in extreme poverty (Grugel & Riggirozzi, 2012). With the fall of right-wing governments and the arrival of left or centre-left governments, a new economic and social development agenda was essential and post-neoliberalism or neostructuralism was conceived.

The pillars of this new paradigm are based on political aspirations focused on reclaiming the authority of the state and on overseeing a new social consensus with regard to welfare. The economic policies associated with post-neoliberalism are a blueprint to achieve growth, whilst simultaneously being responsive to social needs and citizens’ demands (Grugel & Riggirozzi, 2012). The framework combines an attempt to re-evaluate the direction of the economy through state spending, increased taxation and management of exports (ECLAC, 2001). Policies for exports include a change of direction from solely exporting primary commodities to include manufactured goods. An increased domestic market consumption should help to address the poverty legacy.

Governments which were following policies of post-neoliberalism were attracting widespread acclaim from the World Bank and the IMF for the manner in which they were addressing the high level of poverty and extreme poverty. The level of poverty in the region decreased dramatically from its peak of 48.3% in 1990 to 23.1% by 2010. The level of extreme poverty fell from the unenviable figure of 22.5% in 1990 to 12.9% in 2010 (Grugel & Riggirozzi, 2012).

The trebling in the value of commodity prices between 2000 and 2010 (The Economist, 2014), which accompanied and fuelled the inception of post-neoliberalism and the eradication of poverty, did not continue. Since 2011, developing countries which rely on primary commodity exports have suffered a punishing 25% drop in the global prices of commodities (World Bank, 2015). The sustainability of this latest economic paradigm and the left-wing acclaim that it had previously garnered (Leiva, 2008) would now be tested under a cycle of low commodity prices. The consequences of primary commodity dependency under this latest low-price cycle have manifested themselves apace throughout Latin America. In Bolivia, the curtailment of some welfare payments due to fiscal constraints has resulted in social unrest, thus threatening the sustainability of the paradigm in Bolivia (International Monetary Fund, 2016). Following disastrous economic results in Argentina, the IMF has recommended a U-turn in policy implementation away from that associated with post-neoliberalism (IMF, 2016). With early social uprisings and governments already debating a paradigm shift, can neostructuralism sustain a period of commodity price stagnation?

A reasoned perception of the value of this paper is that it can be utilized to inform policy and decision-making by economists and governments in Latin American countries which are operating post-neoliberal policies. As suggested in the conclusions, this research could also be utilized to invite or join ongoing conversations in the academic sector about the future and the impact of current economic models. Government policymakers will be able to utilize the paper to inform policy following the results and ultimately to assess the viability and sustainability of Latin American neostructuralism.

DEFINING NEOSTRUCTURALISM

Previous research into the feasibility and sustainability of Latin American post-neoliberalism focused on the regional management of commodity export revenues and, simultaneously, has sought to define the key tenets of this latest economic paradigm
(Leiva, 2008). Earlier research carried out into the sustainability of the discourse demonstrated a requirement for the key variables which define the narrative between neoliberalism and post-neoliberalism to be nuanced. Table 1* offers a demarcation between Latin American neostructuralism and the neoliberal discourse which it sought to address (CEPAL, 2012)

Table 1

<table>
<thead>
<tr>
<th>Economic Theory</th>
<th>Neoliberalism</th>
<th>Post-neoliberalism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic Objective</td>
<td>Development and growth through market-orientated economic policies</td>
<td>Development and growth driven by a diversification in the export portfolio and entry point into world markets</td>
</tr>
<tr>
<td>Trade Narrative</td>
<td>Free market-specialized trade, focused and reliant on the exportation of primary commodities</td>
<td>A shift in development policy with a reduced reliance on primary commodities and a focus on manufactured secondary goods</td>
</tr>
<tr>
<td>Conditions</td>
<td>Privatization. Minimal state intervention and deregulation which allow for market conditions to dominate</td>
<td>Nationalization of certain industries. Re-regulation and an increase of state intervention into export markets and utilization of trade revenues</td>
</tr>
<tr>
<td>Social development</td>
<td>Diminishing community and a reduction in social services</td>
<td>An increase in social cohesion through robust welfare reform policies, including education and health</td>
</tr>
<tr>
<td>Limitations</td>
<td>Wealth inequality and development issues associated with primary commodity reliance continue to be prevalent</td>
<td>Addresses only short-term development problems and fails to consider the long-run economic consequences. Overexposure to global commodity price cycles remains an issue</td>
</tr>
</tbody>
</table>

(Grugel & Riggirozzi, 2012) (Leiva, 2008)

The influence of the state is displayed throughout numerous key tenets of the neostructuralism paradigm. The importance of the role of the state cannot be hyperbolized.

The re-nationalization of key industries and the ensuing expansion of the state were in direct contradiction to the neoliberal purpose of modernization through privatization (Leiva, 2008). Criticism levied from academics and supporters of the neoliberal narrative has been prevalent since the inception of the paradigm. A key element of this opprobrium is centred on the discourse’s failure to present a long-term development agenda for the region, as it focuses solely on the short to medium term (Leiva, 2008). A
principal tenet of post-neoliberalism is shown to be the policy shift towards the export of manufactured goods from that of primary commodities. Previous research has demonstrated some degree of modernization towards this goal. However, it has only achieved minor success. Manufactured exports in the region grew from 7.5% in the decade 1990-1999 to 8.9% in 2000-2009 (Grugel & Riggirozzi, 2012). This was accompanied by a sharp increase in primary product exports from 2.6% in 1990-1999 to 11.4% in 2000-2009, which was fuelled by the natural resource boom (Grugel & Riggirozzi, 2012). Conclusions derived from these export figures demonstrate that there remains an overexposure to commodity price fluctuations and, thus, a weakness in the model.

Following the conceptualization of the post-neoliberal paradigm, initial research sought to scrutinise the political and economic acclaim which ECLAC’s latest development narrative for the region was receiving (Kaltwasser, 2011). The decentralization of political power which had occurred under neoliberalism was a key focus for this research. The political arena had devolved to municipal level, at which this new left-wing discourse had greater opportunity to be nurtured. Political upscaling was a major factor in the development of indigenous mobilization (Webber, 2008) and with local issues being upscaled to national level more frequently and with greater ease (Haarstad & Floysand, 2007).

Champions of neoliberalism have concluded that post-neoliberalism should not be considered as a standalone paradigm due to its short-term perspective and should only be considered as a social contract to complement the neoliberal narrative (Leiva, 2008). The dichotomy presented between the two development theories and the ambiguity surrounding the policies defining them have led to opportunities for academics and economists to contemplate a different model (Yates & Bakker, 2013), one more suited for 21st-century development in Latin America (Singh, 2010). In order for the modernization of Latin American political economy to achieve sustainable development in the region, the tenets of the models themselves should not be confined to a single paradigm and suggest that further research is required.

**METHODOLOGY**

The commonality displayed throughout previous research into post-neoliberalism was to anatomize the tenets of the paradigm. With the focus on the framework of the model, a research gap concerning the actual sustainability of the paradigm has become apparent, especially when faced with the first commodity price collapse since its inception (World Bank, 2015). The strategic research design deemed most appropriate for this paper was the selection of a single country where the implementation of policies associated with neostructuralism has proven successful and effective. The research then develops further strategic design with the introduction and utilization of a second regional country which had also adopted neostructuralist policies with, however, less favourable results. Secondary research was then utilized to demonstrate the effect of commodity price adjustment on each country.

To demonstrate to what extent Latin American neostructuralism can sustain a drop in global commodity prices, a case study comparison was utilized (Woodside, 2010; Yin, 2013). Bolivia and Argentina were the countries which were deemed the most appropriate choice for the case study comparison. Bolivia, Argentina, and Ecuador were the countries which had normalized the compliance of post-neoliberal polices in Latin America (Grugel...
To offer a justification for the selection of the countries for the case studies, key economic and social successes resulting from the implementation of neostructuralist policies are utilized in the development of the research methodology. Historically Bolivia was one of the most impoverished and depressed countries in Latin America (Grimson & Kessler, 2012). However, in 2013, policies implemented by the Morales Administration achieved a growth rate higher than any other country in the region (International Monetary Fund, 2016). Its continued funding of a robust social agenda whilst commodity prices stagnate resulted in Bolivia being the manifest choice for the research.

To offer a dichotomy with Bolivia’s data, Argentina is then presented as a second regional case study due to its heterogeneous commodity mix (OEC, 2015) and the contrast in economic and social achievements following the application of policies associated with post-neoliberalism. Argentina, along with Colombia and Chile, belongs to a small cluster of countries whose previous compliance with post-neoliberalism has already witnessed a paradigm shift in their return towards policies associated with neoliberalism. The inclusion of Argentina in this research is justified by the insight which it offers into how neoliberalism can fail (Grimson & Kessler, 2012).

Longitudinal analysis was applied in the development of the research. The paper offers conclusions derived from data analysed during the date range 2006 – 2015. High commodity prices, the 2007/2008 global financial crisis, followed by the emergence in 2011 of this latest cycle of low commodity prices (International Monetary Fund, 2016), were critical criteria in the selection of this 10-year scope. To answer the research question, the case study comparison focuses on the current low commodity price cycle 2011 – 2015 (International Monetary Fund, 2016).

To thoroughly evaluate the sustainability of Latin American neostructuralism, a quantitative approach was adopted in the first instance whilst collecting key macroeconomic data from the IMF, the World Bank and CEPAL including GDP per capita, commodity prices and the poverty index. The data analysis then developed and utilized two growth models which typified left-wing economics. Keynesian growth theories and the Endogenous Growth Theory were applied to the data before the presentation of the paper’s conclusions (Mankiw, 2007).

In the development of the paper and to further test whether this paradigm would lead to the harmonious relationship between a larger state, a greater number of welfare projects, and sustainable Latin American growth, it was not deemed possible to achieve this fully by solely utilizing a positivist approach. Other aspects of this research design required that a non-positivist view should also be adopted. Political shifts which have ushered in this latest move towards the left (Grugel & Riggirozzi, 2012) are not always determined by the scrutiny of key economic performance indicators. Voting preference may simply be exemplified as habitual or the result of a political movement which began at local level and, due to political upscaling, escalated to national level (Haarstad & Floysand, 2007). It is these phenomena, feelings, moods and sentiments which have led to popular uprisings and ultimately the demise of neoliberal governments (Kaltwasser, 2011). Due attention was afforded to the political landscape along with key economic data to generate the conclusions.

To analyse all the data correctly, it was necessary to adopt a mixed method approach of both quantitative and qualitative research methods to answer the research
question. This choice was the most appropriate as qualitative research methods are utilized in the analysis of national numerical results including GDP, poverty index, inflation, and trade balances. As the tenets of post-neoliberalism are to achieve sustainable growth through welfare enhancement policies, the paradigm requires governments to fulfil a social commitment to their electorate. It is this commitment and its sustainability which resulted in qualitative methods being utilized in order to convey the state of mind of a nation and its political context. Mixed methods enable the development of rich insights into certain works which would not be possible by solely utilizing qualitative or quantitative methods (Venkatesh, et al., 2013). The utilization of mixed methods has also been advocated as not only being richer but more reliable than utilizing a single paradigm (Mingers, 2011).

**Limitations**

As the paper focuses on the relationship between fluctuations in commodity export prices and whether the recent fall in the attributed revenues has diminished the sustainability of post-neoliberalism, this paper will be open to criticism from neoclassical academics as it does not consider the long-term effects of enhanced fiscal spending and the increased national debt which may accumulate as a result of this (Leiva, 2008). It is also pertinent to highlight that as mixed methods have been employed, the research is also open to criticism due to gaps in polling data which have been utilized to offer an assessment of a political mood shift. Further issues arise with drawing conclusions from Latin American countries where government corruption has been widely acknowledged (Manzetti & Blake, 1996). Data may not be reliable and it is this corruption, rather than the economy, which may have a greater effect on social mobilisation and the mood of the public.

**FINDINGS**

Exporting countries whose economic prosperity is sustained by primary commodity revenues are suffering under a cycle of low and stagnating commodity prices which have been prominent since 2010 (International Monetary Fund, 2016). Output growth for commodity-exporting countries slowed dramatically following the 2008 global financial crisis: this diminished from a level of 8.9% in 2011 to an average of 0.4% in 2015. A lack of investor confidence has been typified by a reduction in the level of investment throughout the affected countries. In 2010, the IMF published their five-year forecast for the level of investment anticipated in commodity-exporting countries. The report forecast that the level of foreign investment would be 5% by 2015; the reality was 1.8% (International Monetary Fund, 2016).

This current cycle of low global commodity prices has been exacerbated further by the simultaneous economic slowdown in some of the world’s major manufacturing economies. China published growth figures in 2015 of 6.9%, which was a 25-year low for the People’s Republic. A fall in demand for raw commodities for the stagnating Far Eastern manufacturing giant has resulted in diminishing export revenues worldwide including in Latin American economies (CEPAL, 2016).

**Bolivia**

President Evo Morales and his party, the Movimiento al Socialismo (M.A.S.), maintain a comfortable two thirds majority in the Bolivian Congress. With their anti-neoliberal agenda, their manifesto abjures political corruption, exploitation, and
oppression. Their manifesto has secured three successive terms in power for the incumbent president Evo Morales (Webber, 2008). However, 2016 witnessed a further political shift in Bolivia when the proposed motion to reorganize the Bolivian constitution to allow Morales to stand in 2019 for a fourth term was narrowly defeated in a referendum (International Monetary Fund, 2016). The reduction in revenues available to M.A.S. has begun to affect the scope in which they can apply infrastructure spending and maintain their welfare reforms. In 2016, as a result of slowing growth, M.A.S. announced that a second monthly Christmas bonus would not be paid (International Monetary Fund, 2016). Recent protests by miners and strikes by truck drivers and handicapped citizens could be signalling a fall in support for Movimento al Socialismo and a change in direction for left-wing policies.

Bolivia suffers from a high dependency on primary commodity exports. The small landlocked nation of 10.7 million inhabitants is a relatively strong economic performer in the region which has normalized consistent economic growth since 2006. GDP growth in Bolivia has averaged 5.04% over a 10-year date range (Table 2*). This level of growth demonstrates the application of sound macroeconomic policies in order to continue this trajectory whilst suffering price pressures. During this period, the neoliberal IMF commended M.A.S. for their successful management of state resources (International Monetary Fund, 2016).

Table 2

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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross domestic product at constant prices as a percentage change</td>
<td>4.8</td>
<td>4.6</td>
<td>6.1</td>
<td>3.4</td>
<td>4.1</td>
<td>5.2</td>
<td>5.1</td>
<td>6.8</td>
<td>5.5</td>
<td>4.8</td>
</tr>
</tbody>
</table>

(International Monetary Fund, 2016)

Bolivian economic output is shown here to be at its highest level during 2013. This result is 2 years into the current stagnation of global commodity prices.

Bolivia’s natural resource reserves have fuelled their recent economic prosperity. Hydrocarbons account for the greater part of the Bolivian export portfolio (Table 3*). The resource-rich country exports a limited but varied range of primary commodities (OEC, 2015).

Table 3

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Value of Exports $</th>
<th>Percentage of exports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum Gas</td>
<td>3.81b</td>
<td>46.2%</td>
</tr>
<tr>
<td>Zinc Ore</td>
<td>889m</td>
<td>9.8%</td>
</tr>
<tr>
<td>Gold</td>
<td>729m</td>
<td>8%</td>
</tr>
<tr>
<td>Precious Metal Ore</td>
<td>545m</td>
<td>6%</td>
</tr>
<tr>
<td>Soybean Meal</td>
<td>540m</td>
<td>5.9%</td>
</tr>
</tbody>
</table>

(OEC, 2015)

The Bolivian export portfolio is dominated by petroleum gas, which accounted for 46.2% of total exports in 2015.
Petroleum gas is the Bolivian primary export which accounted for nearly half of total exports in 2015 at 46.2%. This figure is congruent with the argument that there is a requirement for agrarian reform in Bolivia, following a steep decline in indigenous agricultural exports (Brabazon & Webber, 2013). Global open markets and their fluctuating prices are not the only rationale to explain the commodity price fall threatening the sustainability of this economic paradigm shift in Bolivia. For future fiscal design, it is paramount that due consideration to changes in environmental phenomena should be incorporated into this framework. In December 2015, petroleum gas prices crashed to their lowest level since 1999 due to a sharp decline in demand (World Bank, 2015). This drop was in part the result of the El Niño weather phenomenon. The milder winter weather in the United States was one of the factors which contributed to a diminishing demand for petroleum gas. The price of this plummeted by 9.1% and meant that the U.S. government could increase stocks of the primary commodity, further driving down the price of future imports. New processes and measures including technological advances such as fracking for shale gas have resulted in some primary commodity markets becoming saturated and storage has become the primary concern rather than supply (World Bank, 2015).

Poverty eradication represents one of the guiding principles of the government’s wider *Agenda Patriótica, 2025* (Patriotic Agenda 2025). The key tenets include the improvement of access to education and health care, whilst simultaneously pursuing the state-led social agenda policies around which neostructuralism is constructed. The government of Evo Morales has demonstrated that its policies to eradicate extreme poverty and to fund the wider social agenda have achieved significant success. Following its peak of 66.4% in 2000, the level of Bolivians classified as living in poverty has been reduced by a third to 38.6% in 2015 (World Bank, 2016). This reduction is congruent with the framework championed by CEPAL (CEPAL, 1988). This principal recommendation argues that a larger state, which controls export revenues, is able to utilize these funds for investment in infrastructure and social welfare schemes. The poverty eradication is a direct result of this government’s investment programme (Grugel & Riggirozzi, 2012).

**Argentina**

As with Bolivia, within Latin America, Argentina is a key exporter of primary commodities. However, in contrast with Bolivia, the commodities on which Argentina depends are related to agriculture rather than hydrocarbons. The Argentine economy has become synonymous with performing in a volatile and erratic manner (IMF, 2016) (Table 4*).

### Table 4

<table>
<thead>
<tr>
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<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross domestic product annual growth %</td>
<td>8.10</td>
<td>9.0</td>
<td>4.1</td>
<td><strong>-6.0</strong></td>
<td><strong>10.4</strong></td>
<td>6.1</td>
<td><strong>-1.1</strong></td>
<td>2.3</td>
<td><strong>-2.6</strong></td>
<td>2.5</td>
</tr>
</tbody>
</table>

(\textit{The World Bank, 2017})

The erratic nature of the Argentinian economic output is shown here to be at its most prevalent in the years following the global financial crisis 2009 - 2010.
Sustainable growth has not been achieved throughout the years of Cristina Fernandez de Kirchner’s administration (2007-2015) and the preceding years of her husband Nestor Kirchner’s premiership (2003-2007). The boom and bust years which are counterintuitive to the economic and social prosperity of any country can be viewed as regularly occurring in Argentina. The IMF classifies the 2001-2002 Argentinian crisis as one of the worst economic recessions that any country has ever had to endure (IMF, 2016).

Argentina’s primary commodity exports are predominantly agricultural products (Table 5*). In 2015, the largest export by percentage continued to be soybean meal at 17% of exports (OEC, 2015).

Table 5

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Value of Exports $</th>
<th>Percentage of exports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soybean meal</td>
<td>9.6b</td>
<td>17%</td>
</tr>
<tr>
<td>Soybeans</td>
<td>4.3b</td>
<td>7.4%</td>
</tr>
<tr>
<td>Soybean oil</td>
<td>3.92b</td>
<td>6.8%</td>
</tr>
<tr>
<td>Corn</td>
<td>3.28b</td>
<td>5.7%</td>
</tr>
<tr>
<td>Delivery Trucks</td>
<td>3.01b</td>
<td>5.2%</td>
</tr>
</tbody>
</table>

(OEC, 2015)

Agricultural exports dominate the Argentinian export portfolio output. The top 4 commodities account for 36.9% of total exports.

Other primary commodity exports in the Argentinian portfolio include soybeans, soybean oil, corn, barley, wheat, animal products and wine. Argentina does not solely export primary goods but has successfully diversified to produce and export manufactured goods (Grugel & Riggirozzi, 2012). Delivery trucks manufactured in Argentina accounted for 5.2% of national exports in 2015, with cars accounting for 3.5% (OEC, 2015). The exportation of manufactured goods is a demonstration of the country embracing a key tenet of post-neoliberalism (CEPAL, 1988).

Throughout the years of Kirchnerism (2003-2015), policies which were designed to address the social agenda and redistribute national wealth under a robust social welfare program were bold and popular with the Argentinian electorate. A signature policy during the 12 years of the Kirchner presidencies was the universal child benefit plan Asignación Universal por hijo, which provided a basic minimum income which was related to the size of the family (Grugel & Riggirozzi, 2012). Progresar was another initiative created to offer financial support to young adults between the ages of 18-24 who are either unemployed or on very low incomes (Grugel & Riggirozzi, 2012). This programme offered free education to all eligible citizens, and the government simultaneously provided free child care to ensure that young Argentinians could benefit from this and their parental duties did not preclude them from the initiative.

Poverty eradication was a key focus of both Kirchner premierships, which achieved a reduction in the number of citizens who were classified as living on less than $4 per day. According to the Department of National Statistics and Census in Argentina, Instituto
Nacional de Estadística y Censos (INDEC), the level of poverty decreased from 47.8% in 2003 to 4.7% in mid-2013 (CEPAL, 2016). The Argentinian government did not publish data in 2014. However, when figures were made available in 2015, this level had increased to 29% of the population with a further increase to 31.5% by the first quarter of 2016. Information and statistics which have been provided previously from this national body have been refuted by academic organisations including the London School of Economics (The Economist, 2014).

The failure of post-neoliberalism in Argentina in achieving sustained long-term poverty eradication is congruent with the neoliberal argument that the paradigm only has a short-term perspective (Leiva, 2008). Poverty and extreme poverty peaked in 2002 following the Argentinian financial crisis. However, post-neoliberal policies which were implemented during the early years of Néstor Kirchner’s and later Cristina Fernández de Kirchner’s administrations achieved tangible results in poverty and extreme poverty eradication (CEPAL, 2016). This trajectory was not sustained and both index levels increased by 2015.

**Case study comparison**

A heterogeneity between the results derived from operating post-neoliberal policies in Bolivia and Argentina has been highlighted throughout the findings. Key differences and the dichotomy in achievements between the case studies are apparent (Table 6*).

**Case comparison indicators, Bolivia and Argentina 2011-2015**

<table>
<thead>
<tr>
<th>Date range 2011 – 2015</th>
<th>Bolivia</th>
<th>Argentina</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poverty index reduction %</td>
<td>(6.5)</td>
<td>+23</td>
</tr>
<tr>
<td>GDP % change</td>
<td>(0.4)</td>
<td>(3.6)</td>
</tr>
<tr>
<td>Trade balance $ billion</td>
<td>(1.8)</td>
<td>(12)</td>
</tr>
<tr>
<td>Inflation %</td>
<td>(5.8)</td>
<td>+16.9</td>
</tr>
<tr>
<td>Population change</td>
<td>+646,000</td>
<td>+1,761 million</td>
</tr>
</tbody>
</table>

The continued reduction in the rate of poverty by 6.5% in Bolivia is a stark contrast to the elevation in the poverty index in Argentina of 23%.

**Poverty eradication**

Bolivia has demonstrated a sound management of policies which have in turn led to a reduction in the number of their citizens classified as living in poverty and extreme poverty. The continuous fall in this key indicator of neostructuralism is testament to the policies which aim to address the indigenous marginalization of previous governments (Brabazon & Webber, 2013). Argentina did demonstrate success from the early implementation of post-neoliberalism in the reduction of the rate of poverty level from 47.8% in 2003 to 4.7% in 2013, although this figure, along with published inflation figures, has been refuted by international observers as factually incorrect (The World Bank, 2017). The comparative figures from the two case studies have seen the new centre-right administration in Argentina, elected in 2015, publish updated figures which show a rise in poverty to 31.5% in 2016. The poverty eradication achieved in Bolivia and Argentina between 2003 and 2013 is congruent with the model championed by CEPAL.
(CEPAL, 2012; Grugel and Riggiozzi, 2012), which demonstrates that when managed correctly, targeted export revenues utilized for infrastructure investment can have a positive effect on the level of poverty.

**GDP**

In Bolivia GDP grew at 0.4% less in 2015 than in 2011. The correlation between the fall in growth rate and the stagnation of global prices whilst M.A.S. continue with the level of infrastructure investment via their Plan de Desarrollo Económico y Social 2016-2020 (PDES) follows a pattern of Keynesian economics. A key tenet of Keynes’s economic theories is that an economy’s output of goods and services is based on four components: consumption, investment, government spending and net exports. Keynesian economics are especially prevalent in times of economic slowdown (Romer, 2006). Keynes hypothesised that during episodes where a loss of consumer confidence was a factor, governments should intervene to increase aggregate demand in the short run (Romer, 2006). Investment should be increased to create an environment for labour growth. Aside from net exports, animal spirits are a key tenet of this economic framework which theorised that if a population lack confidence, they will not contribute to the domestic economy.

The drop in the Bolivian GDP of 0.4% witnessed during this latest cycle of low commodity prices strengthens the argument that the discourse is only effective in the short term and should not be the advised path for sustained economic prosperity (Leiva, 2008). This neoclassical perspective does not support Keynesian economic theories. However, the maintained financing of infrastructure investment demonstrated by the Bolivian government reaffirms their commitment to welfare spending.

The Argentinian GDP has performed erratically and in a manner which would preclude any government from achieving sustainable growth. National output in Argentina in 2015 was at a level of 2.5%, 3.6% below the 6.1% growth achieved in 2011. During this date range, Argentina twice entered a recession: in 2012 the level of national contraction was -1.1% and in 2014 the economy contracted by -2.6% (IMF, 2016). These results are in no way congruent with the arguments of CEPAL and their championed post-neoliberalism (CEPAL, 2016).

This comparison will now introduce a further economic model to test the data analysis. Endogenous growth theory was conceived in the 1980s as an alternative to the neoclassical growth models such as the Solow Growth Model, which hypothesises that exogenous factors and, in particular, technological advances are the key to achieving sustainable growth in developing countries (Mankiw, 2007). The endogenous growth theory framework focuses on endogenous factors and the role of knowledge and human capital as the vehicle for growth. The simplified production function of the endogenous growth theory can be shown by the following equation:

\[ Y = AK \]

To develop the equation and its relation to post-neoliberalism: \( Y \) represents total economic output, \( K \) represents capital and \( A \) is a constant measuring the amount of output produced for each unit of capital (Romer, 2006). Endogenous growth theory argues that to achieve growth in developing countries an increase in capital \( K \) (representing here human capital or knowledge) will achieve increased output \( Y \). Recent research has underscored the importance of cognitive skills for economic growth (Hanushek, 2013). When applied to both case studies this theory is congruent in Bolivia with the fact that
educational investment has contributed to the nation’s sustained growth during the date range. Fiscal buffers have meant that investment, including in education, has continued during the commodity price reduction. The erratic nature of the boom and bust years witnessed in Argentina, however, suggests that factors other than investment in human capital are responsible for the fluctuations in GDP.

**Trade Balance**

As highlighted in the research design, this research will focus on the current cycle of low commodity prices and the extent to which this affects the sustainability of neostructuralist policies in Bolivia and Argentina. It is, without doubt, evident that the drop in the trade balance of the two countries is significant and would influence any government’s fiscal programme if that nation was solely reliant on natural resource export revenues (CEPAL, 1988). The trade balance in Bolivia in 2011 was +$0.4 billion and this decreased over the date range to -$1.4 billion. Argentina’s trade balance diminished over the date range, implying that the level at which their agricultural products were affected was greater than that of the Bolivian exports. The Argentinian trade balance began in 2011 at +$9 billion but ended the date range at -$3 billion.

**Inflation**

The Argentinian rate of inflation in 2011 was 9.8%, whereas the published level at the conclusion of the date range was 26.7% (CEPAL, 2016). As demonstrated earlier in the paper, Argentina suffered two years of recession during this date range and the government of the time implemented policies to regenerate the economy through various measures, including quantitative easing (IMF, 2016). This monetary policy tool was coupled with further measures to limit the devaluation of the peso by restricting the purchase of foreign currency *El Cepo*. The implementation of these policies stifled foreign investment and resulted in an unsustainable rate of inflation which the Statistical Institute of Buenos Aires confirmed in 2016 had reached 44.8% (The World Bank, 2017).

In comparison, the Bolivian government has displayed a sound economic policy with regard to inflationary pressures. It has achieved a sustained drop in the price of goods and services from a level of 9.9% in 2011 to 4.1% in 2015. The IMF has attributed Bolivia’s reduction in the price of goods and services to the implementation of robust macroeconomic policies and the building of significant capital reserves from export revenues during the commodity price boom (International Monetary Fund, 2016).

**Population**

Although this paper will not develop in detail the population growth variable in each case study, it is important to highlight that the population growth in Bolivia and Argentina is congruent with a higher population growth associated with developing countries (Population Reference Bureau, 2012). With growing populations, the burden on a neostructuralist government will increase in line with the additional social commitment required per person (CEPAL, 2012).

**CONCLUSIONS**

The objectives of this paper are to offer conclusions as to whether Latin American post-neoliberalism is sustainable under the pressures of low commodity prices. Utilizing
information from the findings, this research concludes that, under certain conditions, it can survive and have a tangible effect on people’s lives.

One of the primary conditions which need to be fulfilled for the survival of the paradigm is the responsible management of any export revenues. This responsibility is paramount in order to ensure that revenues are utilized to maximise their welfare impact so that the poorest in the population benefit from government policies which are, above all, sustainable.

The data analysis has highlighted the dichotomy in sustainability of the paradigm in Argentina and Bolivia. However, the context of their different political spheres should be acknowledged in the presentation of this conclusion. In Bolivia, the IMF and the World Bank highly commended the fiscal buffers built by M.A.S. However, these surpluses have been eroded whilst the government continues to fund their investment programme, and the responsibility for financing this infrastructure and welfare spending will now fall to the central bank. The level of indebtedness will undoubtedly increase in Bolivia with the announcement that infrastructure spending will not be curtailed during this low commodity price cycle. The management of export revenues under the Morales Administration highlights the current government’s determination to address the social agenda. However, a responsible fiscal balance will be required to ensure that the level of indebtedness does not become unsustainable.

In addition, it is essential for the continuation and survival of the discourse that the reliance on solely exporting primary goods is reduced and that the portfolio of manufactured products is expanded. Manufactured trucks were Argentina’s third largest export in 2015 and accounted for 11% of the export ratio. It is this kind of diversification which will aid the sustainability of Latin American neostructuralism.

The key to the growing sense of optimism that Latin American countries will become less reliant on primary commodities is derived from the increase of investment in education, knowledge and human capital which will, in turn, result in increased skills and an opportunity to develop the export portfolio. Within the findings, this paper has highlighted an emphasis on education investment in both cases studies through a range of policies. This research acknowledges there has been an increase in manufacturing. However, to aid the sustainability of the discourse, further development is required in this area. An increased export portfolio of manufactured goods would undoubtedly reduce the exposure faced by Latin American countries to fluctuations in commodity prices.

A further condition which should be fulfilled to ensure the sustainability of the paradigm is the continued investment in rural and indigenous communities. It is these populations which suffered greatest under the failure of neoliberal policies, and it is these communities which hold the key to the survival of post-neoliberalism. Targeted investment in infrastructure and education policies designated for rural regions with indigenous populations will pay dividends in the medium to long term. It is this workforce which will be key to unlocking the manufacturing potential of Latin American countries with an abundant labour force.

Latin American government corruption remains a prominent variable in the sustainability of this development paradigm. Although not directly considered by this paper, the major impact of large-scale corruption has resulted in the impeachment of presidents and the collapse of entire governments, the most recent of which occurred in August 2016 with the impeachment of the Brazilian President Dilma Rousseff, for alleged
corruption charges. The effect of corruption on the post-neoliberalism framework invites further academic research.

There is a growing consensus amongst academics and economists that perhaps neoliberalism and post-neoliberalism, and the dichotomy which they represent, are not the most suitable model for Latin American development. Varieties of capitalism have resulted in the emergence of a hybrid theory with greater state intervention which attracts foreign investment, and this could be the key which unlocks the Latin American economic chimera. This hybrid theory warrants further research to ascertain its validity and sustainability.

Post-neoliberalism will survive a period of stagnation in the price of commodities, provided that the current revenues are used to establish the foundations for further economic development. An increase in investment, strategic know-how and infrastructure spending on education will result in the eventual transition from primary commodity dependence to a service economy.

RECOMMENDATIONS

To conclude, this research offers recommendations regarding the policies which are key to the sustainability of the post-neoliberalism paradigm and the areas for further research:

A policy shift away from natural resource exportation, towards manufactured goods, is paramount to the sustainability of the paradigm.

Investment in education and human capital should be prioritised to ensure that recommendation (1) can be delivered.

Policy implementation should include the responsible management of export revenues.

To ensure continued support, infrastructure spending should be targeted to eradicate the further marginalization of indigenous communities.

Further research should be carried out into the effects of political corruption on post-neoliberalism.

The dogmatic framework and the variables which define the theories of neoliberalism and post-neoliberalism should be explored further. Could there be a more suitable path for development in the region?

REFERENCES


ABSTRACT

**Purpose** – The research question this work answers is whether the values declared by Polish cooperatives are parallel to the sustainable development paradigm. In order to answer this question, the following research objectives were set: to provide comprehensive information on the topic of sustainable development and cooperatives values, to identify the values communicated by Polish cooperatives on their websites, and to critically analyse whether those values are consistent with sustainable development values.

**Methodology** – The three main research methods used in the course of this research are: literature review, website content analysis, and a comparative study.

**Findings** – The results of the research indicate that cooperatives are businesses meeting the needs of local communities and implementing actions in favour of social responsibility. Thus, they fulfil the principles of sustainable development on the level of the region which they operate in.

**Social implications** – The research should have an impact on society by showing that values adopted by cooperatives are very strongly associated with values related to local communities. This means that they guarantee regional development.

**Originality / value** – Analysis of the content of webpages in search of the values declared by cooperatives has an innovative character. The value of this analysis is all the greater considering the fact that cooperatives are very numerously represented in the study.

**Keywords**: cooperatives, values, sustainable development, Poland

INTRODUCTION

As a response to the growing awareness of the importance of market communication, there is an increased incentive amongst organizations to communicate various aspects of their activities. The Internet gives an organization the opportunity to demonstrate information such as mission and vision or reports on sustainability online. It is self-presentation which embraces, among other things, the set of values the organization adheres to. The main goal of this article is to indicate how Polish cooperatives are contributing to achieving goals of sustainable development by analysing their declarations online.

The aims of the research are to identify the values declared by cooperatives on their websites and to discover if they support the sustainable development paradigm. The article attempts to show that cooperatives can be considered as a proven way to the objective of sustainable development.

Research on cooperatives in Poland is scarce as significantly more research has been conducted among profit-oriented businesses (corporations) in relation to usability-oriented organizations, like cooperatives.

The article begins with a short presentation of the concept of cooperatives and their main values. Secondly, the fundamental values of sustainable development are introduced. Then, the authors examine the webpages of Polish cooperatives looking for information on
sustainability-related values. The information is presented according to the following scheme: what the cooperatives do, for whom and in what manner. In the final part, the implementation of the goals of sustainable development of the cooperatives is presented.

**Cooperatives’ Values**

Cooperatives are associations of people who combine their capital to create businesses. They manage them democratically and meet the goals of the members. A cooperative, as an organization, has its own culture founded on internationally accepted principles of cooperative organization that emphasize member ownership and control, servicing members’ and thereby community needs, and collective norms (Stoll, Poon, Hamilton, 2015). Therefore, its source lies in the cooperative values stored in the cooperative principles. These values were developed by the Rochdale Pioneers in 1844, who created the first successfully operating cooperative – The Rochdale Society of Equitable Pioneers. Their rules were adopted by the cooperative movement throughout the world. Since the beginning of the movement, cooperators have set themselves realistic goals: simple actions to meet basic needs. The Rochdale Pioneers wanted to buy basic, good quality food products at a fair price; they did not want to be cheated on weight and did not want low quality goods. They set up their own store and chose their own suppliers. In response to a usurious percent, people started to create credit unions. After the First and Second World Wars, war-disabled people, wanting to live suitably, created their own cooperatives. So, members' needs and values have always defined cooperative actions. This also applies to cooperatives established and functioning nowadays. Thus, in a cooperative, people are joined together in a collective action aiming to meet their needs. This action is determined by the values of cooperators. They choose a cooperative as an activity form, convinced about the possibility of preserving their values and acting in accordance with them (Abramowski, 2012). The following is guaranteed by cooperative principles:

- voluntary and open membership;
- democratic member control;
- economic participation of members;
- autonomy and independence;
- education, training and information;
- inter-cooperative collaboration;
- care for the local community. *(International Co-operative Alliance)*

The guarantee of cooperative democracy, autonomy and independence encourages economic participation and therefore the inclusion of one's private resources. This is not, however, investing assets to maximize profits, which characterizes business/capitalist companies. Cooperators want to satisfy their own needs and maximize usability. The criterion for assessing the effects of their actions and operations lies therefore in the sense of needs fulfilment, the satisfaction in achievement, and the usefulness and effectiveness of actions undertaken.

Cooperatives fulfil a triple role: economic, social, and democratic. As economic actors, cooperatives create jobs and opportunities for income; as social organizations built on a common goal and a common bond, cooperatives enhance protection and security and contribute to equality and social justice; and as democratically controlled and governed
organizations, cooperatives play a constructive role in communities and nations and in society and politics (Schwettmann, 2014).

The long history of the cooperative movement shows that it is possible to speak of the cooperative development paradigm. It is based on private property and market allocation of resources, democracy of governance, openness and tolerance. An important component of the cooperative model of development is closely linked with a region. Locality attaches members, their goals and capital to their place on the ground (Zimnoch, 2016). There is no speculation and pursuit of profit elsewhere.

Cooperative organizations have gained renewed interest as potentially important players in what Bennett and Lemelin (2014) labelled as the “eco-social economy.” This was achieved by building their organizations around local sustainability practices and adhering to the community-oriented membership financing structures that are the hallmark of the cooperative model. They appear far more embedded in the local community and are active in sponsoring community events and courting local investment.

Cooperatives in Poland

Polish cooperatives in individual industries/trades were created as early as the period of annexations, before Poland regained independence in 1918, and in the first years of independence. Therefore, historically, their mission was seen by the founding members as preserving Polish national ownership of resources: land, capital, labour and science. Thugutt (1945) claimed: "The establishment of cooperatives equals building fortresses of Polishness". This economic patriotism was, and is declared to this day, by dairy cooperatives, housing cooperatives, cooperative banks, and PSSs (Powszechna Spółdzielnia Spożywców; PSS translates into a common food cooperative).

Some Polish cooperative sectors have a shorter history. Agricultural Production Cooperatives were created in the process of brutal collectivization of the Polish countryside carried out by the Communists in the 1950s. In this case, unlike during the creation of the pre-war agricultural associations, or any cooperatives in general – where the members' private resources are joined together – private property of other people was taken over (often under the constraint of people's power) by those who created an agricultural production cooperative. Similarly, Municipal Cooperatives "Samopomoc Chłopska", after World War II, took over small agricultural cooperatives and manufacturing facilities as a part of the 'collectivisation' process. Social cooperatives and Cooperative Agricultural Producers Groups have an even shorter history. However, in the case of these cooperatives, there is a socio-economic policy interference coming down to co-financing the activities of such cooperatives, using the budget or off-budget resources. Accordingly, in those cases it is difficult to talk about the autonomy of the establishment and operation of such cooperatives.

Polish cooperatives have faced some difficulties accessing bank loans. The basic need for money as a medium of exchange led to the creation of a Polish local currency used in business-to-business settlements – PLZ (Polish Zielony). The authors of the Polish local currency claimed: "If you want to have an influence – create a cooperative" (https://zielony.biz.pl/). That kind of cooperative entrepreneurship, as is claimed by Stryjan (2014), is rarely noticed by researchers of social aspects of management, and yet it is still an important element of sustainable development.
In traditional education, until the 1990s, the differences in goals and motives between cooperatives and corporations were distinctly underlined. A corporation, with its pragmatic approach to the business of maximizing profits, needed decades to understand the necessity to fulfill social and environmental aims complementary to economic gains. Despite the fact that cooperatives have been pursuing social and environmental goals since the beginning of their existence, few researchers in Poland deal with cooperatives or in particular cooperative entrepreneurship (Stryjan, 2014). More voluminous research can be found on the topic of corporate sustainability than on cooperative sustainability. However, researching cooperatives can be seen as essential given their long history and tradition, their presence in various branches of the economy, and their attitude of inclusion.

**Sustainable Development Values**

In recent decades, the human imprint on the natural world has increased dramatically due to emissions of greenhouse gases and growth of the urban population (Sarkar and Searcy, 2016). These changes have drawn attention to global sustainable development, a concept which addresses economic, environmental, and social issues. These issues are typically viewed as the three key pillars of sustainability.

The understanding of sustainability has been influenced by three main groups: ecologists, business strategists, and the United Nations World Commission on Environment and Development, called the “Brundtland Commission”. Ecologists’ concept of sustainability is said to have been coined in 1712 by the German nobleman Hans Carl von Carlowitz and referred to the sustainable production of wood. In the 1970s, the term was adopted by the ecological movement concerned with the over-exploitation of natural and environmental resources of the planet (Mazur, 2015). While ecologists focus on sustainability’s ecological dimension – the protection of the natural environment – the traditional goal of business strategy scholars is the economic sustainability of organizations (Mazur, 2016). Business strategists link the term “sustainability” with “sustainable competitive advantage”. The World Commission on Environment and Development was initiated by the General Assembly of the United Nations in 1982, and its report, Our Common Future, was published in 1987. The Brundtland Commission added a social dimension to the ecological and economic ones, defining sustainable development as a development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Since its dissemination through the Brundtland Report, suggest Sarkar and Searcy (2016), the notion of sustainability has been associated with ecological issues in business practice primarily.

The concept of sustainable development emphasizes two notions: development and sustainability. A study by the Board on Sustainable Development of the U.S. National Academy of Sciences sought to bring some order to the broad literature its members reviewed. The National Research Council, in its report *Our Common Journey: A Transition toward Sustainability*, focused on the seemingly inherent distinction between what advocates and analysts sought to sustain and what they sought to develop. The results of that research are shown in Figure 1 below.
<table>
<thead>
<tr>
<th>WHAT IS TO BE SUSTAINED:</th>
<th>WHAT IS TO BE DEVELOPED:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NATURE</strong></td>
<td><strong>PEOPLE</strong></td>
</tr>
<tr>
<td>Earth</td>
<td>Child survival</td>
</tr>
<tr>
<td>Biodiversity</td>
<td>Life expectancy</td>
</tr>
<tr>
<td>Ecosystems</td>
<td>Education</td>
</tr>
<tr>
<td></td>
<td>Equity</td>
</tr>
<tr>
<td></td>
<td>Equal opportunity</td>
</tr>
<tr>
<td><strong>LIFE SUPPORT</strong></td>
<td><strong>ECONOMY</strong></td>
</tr>
<tr>
<td>Ecosystem services</td>
<td>Wealth</td>
</tr>
<tr>
<td>Resources</td>
<td>Productive sectors</td>
</tr>
<tr>
<td>Environment</td>
<td>Consumption</td>
</tr>
<tr>
<td><strong>COMMUNITY</strong></td>
<td><strong>SOCIETY</strong></td>
</tr>
<tr>
<td>Cultures</td>
<td>Institutions</td>
</tr>
<tr>
<td>Groups</td>
<td>Social capital</td>
</tr>
<tr>
<td>Places</td>
<td>States, regions</td>
</tr>
</tbody>
</table>

**Figure 1. Definitions of sustainable development**


Under the heading “what is to be sustained,” the board identified three major categories – nature, life support systems, and community – as well as intermediate categories for each. Drawing from the surveyed literature, the board found that most commonly, emphasis was placed on life support systems, which defined nature or the environment as a source of services for the utilitarian life support of humankind (Kates, Parris, Leiserowitz, 2005).

Similarly, there were three quite distinct ideas about what should be developed: people, the economy, and society. Much of the early literature focused on economic development, with productive sectors providing employment, desired consumption, and wealth. More recently, attention has shifted to human development, including an emphasis on values and goals, such as increased life expectancy, education, equity, and opportunity. Finally, the Board on Sustainable Development also identified calls to develop society that emphasized the values of security and well-being of national states, regions, and institutions as well as the social capital of relationships and community ties.

There was ready agreement in the literature that sustainable development implies linking what is to be sustained with what is to be developed, but here, too, as claimed by Kates, Parris, and Leiserowitz (2005, p.12), the emphasis has often differed from extremes of “sustain only” to “develop mostly” to various forms of “and/or.”

**METHODOLOGY**

The research question this work attempts to answer is whether the values declared by Polish cooperatives are parallel to the sustainable development paradigm.

In order to answer this question, the following research objectives were set: to provide comprehensive information on the topic of sustainable development and
cooperatives’ values, to identify the values communicated by Polish cooperatives on their websites, and to critically analyse whether those values are consistent with sustainable development values.

The following research methods were used to achieve the objectives:

1. A review of literature concerning sustainable development from the point of view of its underlying values; a review of literature concerning values on which cooperative activities are founded;

2. A website content analysis examining the content of Polish cooperatives' websites in search of declarations regarding their values;

3. A comparative study of values declared by cooperatives with sustainable development values highlighted in the literature.

In search of the values that guide Polish cooperatives, a study of the content of their webpages was carried out. The juxtaposition further on in this work was made on the basis of an analysis of records from the cooperatives’ websites. Moreover, information from the cooperatives’ branch trade websites operating in Poland was used as well.

For the purpose of this article, 150 cooperatives were researched between March 3rd and March 15th, 2017. The websites of 105 cooperatives included articulated values or missions. There were 45 cooperatives in the sample whose websites contained only contact details and commercial offers.

The cooperatives in the research were divided according to the economic branch they operate in, also taking into consideration their history and size. The characteristics of the surveyed cooperatives, including the industry, the year of the oldest cooperative foundation in the industry, and the number of cooperatives operating in a given industry in 2016, are shown in Table 1.

### Characteristics of the cooperatives in the study

<table>
<thead>
<tr>
<th>Cooperative industry</th>
<th>Establishment year of the oldest cooperative in the industry</th>
<th>Number of cooperatives operating in 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  Municipal cooperatives &quot;Samopomoc Chłopska&quot;</td>
<td>1951</td>
<td>1115</td>
</tr>
<tr>
<td>2  Dairy cooperatives</td>
<td>1896</td>
<td>137</td>
</tr>
<tr>
<td>3  Beekeeping and gardening cooperatives</td>
<td>1884</td>
<td>52</td>
</tr>
<tr>
<td>4  Agricultural Production Cooperatives</td>
<td>1948</td>
<td>682</td>
</tr>
<tr>
<td>5  Agricultural associations</td>
<td>1862</td>
<td>489</td>
</tr>
<tr>
<td>6  Cooperative Banks</td>
<td>1861</td>
<td>563</td>
</tr>
<tr>
<td>7  PSS &quot;Społem&quot;</td>
<td>1868</td>
<td>310</td>
</tr>
<tr>
<td>8  Housing cooperatives</td>
<td>1890</td>
<td>3722</td>
</tr>
<tr>
<td>9  Labour and Services Cooperatives and Building Cooperatives</td>
<td>1872</td>
<td>576</td>
</tr>
<tr>
<td>10 Cooperatives of the Blind and Disabled</td>
<td>1944</td>
<td>167</td>
</tr>
<tr>
<td>11 Folk and Art Crafts Cooperatives &quot;Cepelia&quot;</td>
<td>1926 (1946)</td>
<td>6</td>
</tr>
<tr>
<td>12 Handicrafts cooperatives</td>
<td>1933</td>
<td>133</td>
</tr>
<tr>
<td>13 Cooperative Savings and Credit Unions</td>
<td>1861</td>
<td>55</td>
</tr>
<tr>
<td>14 Social cooperatives</td>
<td>2006</td>
<td>1054</td>
</tr>
</tbody>
</table>
Cooperatives representing the 15 groups listed in Table 1 were reviewed. The results of this review are presented in Table 2. The first column, containing the number, refers to Table 1 and indicates the group of the respective cooperative. The second column provides information from the cooperative’s website on the purpose of their activities. The third and fourth columns indicate the recipients of the cooperative’s activities and the manner in which they are implemented.

**Table 2**

**Actions (what we do, for whom and how) and values of cooperatives according to their websites**

<table>
<thead>
<tr>
<th>Action/Mission</th>
<th>For whom</th>
<th>How</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Our primary goal is to provide the local community with basic food and industrial products needed in daily operations and necessary for the development of agricultural production.</td>
<td>We provide students with practical skills needed in their occupations: butcher, baker, seller, cook. We work with many organizations and associations active in the local community, we take part in regional and national trade fairs and exhibitions.</td>
<td>In our work, we follow our hearts so that we can reach the hearts of others through our products. The quality of our bread is the quality of our work. Baking bread is more than a job for us.</td>
</tr>
<tr>
<td>2. In the nineteenth and early twentieth centuries, on Polish lands under foreign occupation, an urgent need to create a new independent national personnel necessary in each region was present. An important decision to start a Polish dairy cooperative was made.</td>
<td>Dairy cooperatives are owned by their members and strive to maximize the satisfaction of both suppliers and consumers. Improving qualifications and continuous staff training at all levels of management.</td>
<td>Respect for customers’ health through production of healthy products and effective management of food safety throughout the whole food chain. Intensive development and implementation of innovative technical and organizational solutions on a global level, taking into account the impact on the environment and the food's health safety.</td>
</tr>
<tr>
<td>3. Buying and selling vegetables, fruit and honey from bee hives in various regions of Poland.</td>
<td>Organizing seasonal fairs providing a unique opportunity for stocking up on healthy and cheap fruit, vegetables, honey and regional products.</td>
<td>Each batch of honey is thoroughly tested (...) The buyer is assured that it is devoid of residues of veterinary medicines.</td>
</tr>
<tr>
<td>4. Profitably located lands are a cooperative's great capital.</td>
<td>Associating farmers from our region; our cooperation is based on mutual complementarity.</td>
<td>Our products are organic, produced entirely in a natural way.</td>
</tr>
</tbody>
</table>
5. (...) taking initiatives to foster a multi-functional development of rural areas | The shape of the Organization is given by its members; the Organization helps its members in the implementation of their professional interests. | Today, the objective of the agricultural associations is a rational multiplication and use of assets for members, agricultural production and the environment. |

6. The mission of the Cooperative Bank, the bank of the local communities, is providing members, clients with the financial services they need (...). | The provision of complex, modern and professional banking services for the local community and the stakeholders, financial services in accordance with the ideals of cooperativeness and aiming to activate the development of the local environment. | There are institutions which are defined by one word – honesty. Honesty towards customers, manifested in offering transparent, reliable and safe products and financial services. |

7. A developed network of shops, thousands of products, onsite production, catering establishments, conference and banquet centres. | The Universal Cooperative of Grocers "SPOLEM" is one of the largest employers in many cities. It is here that we pay taxes, thus contributing to the development of our city. | Maintenance and development of a cooperative form of management based on reliability, confidence, ability to adjust the offer to all buyers' expectations. They rely on tradition and quality. Good quality for a fair price. |

8. Housing cooperatives were established (...) adopting for their purpose the housing needs fulfilment of members and their families and the needs resulting from living in the cooperative settlements. | Almost from the very beginning they have operated in the socio-cultural clubs, which raise generations of children through the formation of interest, providing opportunities for development. Seniors also have the opportunity to meet and pursue their passions. | Environmental protection is one of the main objectives that guides housing cooperatives. Rational development and management of environmental resources in accordance with the principles of sustainable development; recycling, in today's urbanized world, is an extremely important issue. |

9. We combine our resources and together we provide construction services to our customers. | Supports cooperative employees who want to upgrade or change their qualifications and who want to create a cooperative. | More than 60 years of history, an experienced and qualified staff and a developed machine park allow us to promote our long-term customers' opinion: Labour and Services cooperatives and Building cooperatives are solid companies. |

10. To help people with disabilities and rehabilitate them in the work process; to provide employment for people with disabilities, which, in addition to professional activation, gives them a sense of social acceptance and participation in public life. | The cooperative's mission is to help people with disabilities and rehabilitate them in the work process. | By taking into account the environmentally friendly nature of production and humane treatment of each employee, especially disabled ones; using the principle of equal opportunities irrespective of sex, racial or ethnic origin, religion or belief, age or sexual orientation. |

11. The aim of "Cepelia" is to protect, organize, develop and promote handicrafts and folk art and industry. | The area of cooperation of the cooperative is the territory of the Republic of Poland and abroad. | Preservation of traditional values concerning the material qualities of the Polish nation, preservation of the nation's cultural identity. |
12. Teaching professions: from the most modern to the most unique, especially those of an artistic and handicraft character. Cooperatives award apprentice and master diplomas. An important issue is to promote safe work practices and ethics in the workplace.

13. Providing financial services and attention to the development and improvement of the system of credit unions; cooperation between credit unions. Concern for the members of credit unions; shaping civic attitudes among members; joint responsibility for common matters. Unions’ fundamental values are: honesty; building mutual trust; being guided by prudence; shaping civic attitudes among members; thriftiness.

14. Professional integration and overcoming exclusion in the labour market. Cooperatives are based on the combined needs and aspirations of people in the place where they live. Defining public interest as a primary goal, realization directly through the production of goods and services of general interest.

15. Manufacturing agricultural products or agricultural product groups, guided by quality; natural environment preservation; conducting cultural and educational activities for the benefit of members and the environment. Local roots – actions within the community and on its behalf are another common feature of cooperative groups of producers. Special funds provide assistance for local school centres and social organizations. New possibilities for farmers allowing for an improvement of farms’ profitability by getting better conditions for the sale of products (larger batches); lower costs of production resources.


The values presented on the websites of the surveyed cooperatives are in accord with the paradigm of sustainable development. Among them, there are those that relate to what should be developed as well as those that relate to what should be sustained. Both groups of values are presented in Tables 3 and 4 and commented on below.

Table 3

<table>
<thead>
<tr>
<th>What is to be developed – values</th>
</tr>
</thead>
<tbody>
<tr>
<td>People</td>
</tr>
<tr>
<td>Economy</td>
</tr>
<tr>
<td>Society</td>
</tr>
</tbody>
</table>

Source: Authors’ own elaboration
The value groups which, according to the concept of sustainable development, need to be developed are those concerning people, the economy and society. Among the most commonly declared values referring to people are those related to raising qualifications. Among the values referring to the economy, the most frequently indicated are those referring to the region and its development and the development of cooperative members' entrepreneurship. Among values related to society, the following values are emphasized: integrating the excluded into society, occupational integration, trust, the development of the local community and members.

Table 4

<table>
<thead>
<tr>
<th>Nature</th>
<th>concern for people and the environment, environmental safety, biodiversity, respect for nature, animal welfare;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Life support systems</td>
<td>environmental awareness, robustness, modern technology, thriftiness, security, humanitarianism;</td>
</tr>
<tr>
<td>Community</td>
<td>tradition, solidarity, trust, preservation of cultural identity, community development, little homeland, public utility, common home.</td>
</tr>
</tbody>
</table>

Source: Authors’ own elaboration

The value groups which, according to the concept of sustainable development, need to be sustained are those concerning nature, life support systems and community. Among the values that – according to the sustainable development concept – need to be sustained, we find the following: environmental concerns, life support systems such as awareness of activities' impact on ecosystems, and values related to traditional ways of life and universal solidarity.

CONCLUSIONS

The research question of whether the cooperative development paradigm is parallel to the paradigm of sustainable development was answered positively. Cooperatives' functioning is filled with values important for sustainable development. Values fundamental to the concept of sustainable development occur in two groups: the group of values pertaining to what should be developed (people, the economy, society), and the group of values pertaining to what should be sustained (nature, life support systems, community). Values indicated online by cooperatives in the scope of this research belong to both of the value groups which are fundamental to the concept of sustainable development.

The values declared by cooperatives of individual industries have also confirmed the continuity of the values and ideas of the cooperative movement. On their websites, cooperators indicate specifically – our mission, our values. Many small cooperatives describe their activity as "what we do". Sorting the values presented by the cooperatives according to the scheme “what we do, for whom and how we operate” allows for the following classification (rank) of cooperative values in the group: basic needs fulfilment, local communities, concern for the health, development and safety of people and the environment.
The above analysis allows us to draw the conclusion that the fulfilment of basic needs of cooperative members, consumers and manufacturers is an actually achieved goal. Cooperatives are needed, because they bake bread, make sausages and produce honey. They collect and process milk and other agricultural materials. They allow for the creation of "one’s own home." They provide credits and safely store savings. Their functioning is based on simple principles. They emphasize the importance of tradition, because they are with their customers for generations. Their actions fit perfectly with the concept of sustainable development, proving that implementing this concept does not always require revolutionary changes in the business world.

REFERENCES


ANALYSIS OF THE EFFECTS OF BREXIT ON THE UK’S ABILITY TO ACHIEVE THE CLIMATE CHANGE ACT’S TARGET FOR 2030

Liam Marlow
Pedro Pablo Cardoso-Castro

ABSTRACT
Purpose: This paper evaluates the UK’s departure from the European Union (EU) and how this will influence the emissions output.
Methodological approach: Relationships between emissions and empirical generalizations related to the UK’s departure from the EU were detected through an extensive literature review adopting an inductive approach. The Delphi methodology was used to collect the opinions of experts via semi-structured interviews from where themes were identified with the use of Nvivo. Finally, a triangulation was made by synthesizing the qualitative data with the literature to determine the impacts of the UK’s departure from the EU on emissions.
Findings: The work provides evidence that the UK’s decision to leave the EU will have multiple detrimental long-term consequences for the achievability of the fifth carbon budget.
Research limitation: This study considers the opinion of a limited group of experts, and consequently, more in-depth research is required to better assess the wider range of variables and perspectives affecting the current decision-making process and policy related to the UK’s environmental commitments
Originality and value: Under the current eclectic dynamic surrounding Brexit, a plethora of distorted empirical studies addressing its consequences have emerged. This work provides a comprehensive overview of a largely understudied set of opinions and an analysis of possible consequences Brexit poses. The paper opens a debate and invites new perspectives to be included in an increasingly neglected contemporary issue, and it contributes as a reference for the future discussion of environmental policy in the UK.
Keywords: collaboration, legislation, emissions, investment, climate change target 2030, sustainability

INTRODUCTION
Since the discussions on greenhouse emissions at the Rio Earth Summit 1992 and the confirmation that the largest share of those emissions was coming from Europe and North America (Friedrich and Damassa, 2014), an energetic global reaction was spawned, leading to the birth of the Kyoto Protocol, ratified in 1997: a legally binding treaty to reduce greenhouse emissions allowing groups of countries to meet their targets jointly (e.g. the European collaborative front to lower emissions).

The protocol originated a variety of European frameworks, such as the EU emissions trading scheme, the renewable energy directive, and the 2030 climate framework. To provide viability to those initiatives, the European commission supplied climate change funding from which the UK receives £3.5 billion annually for climate change adaption and a transition to a low carbon economy (FFT, 2016).

In addition to the European regulations, the UK decided to assume the leadership by
producing the legally binding 2008 climate change act (Hester and Harrison, 2015). The act's central premise was to reduce emissions by at least 80% in 2050 of the 1990 levels through carbon budgets, which are a cap on the amount of greenhouse gases emitted in the UK over a five-year period (CCC, 2017). The fifth carbon budget the UK set, for 2030, was to reduce emissions by 57% of the 1990 levels, and with the country currently on track to outperform the second and third carbon budgets, there is reason for optimism (Edie, 2016).

The UK and European states’ collaborative approach has proven effective, with record low carbon emissions (Nelsen, 2015). However, this collaboration has become extremely complex as deep anxiety has been perceived about diminished national sovereignty from Britain within Europe (Chu, 2016), which had led the UK’s government to a referendum which resulted in the public voting to leave the EU by a 52% to 48% margin (Electoral Commission, 2016).

Several studies have indicated this decision will deteriorate the collaborative projects with Europe (Wishart, 2016), while others suggest that the UK would do better in the long run on its own (Rieth, 2016). In this new context, few attempts have been made to understand the effects of Brexit for the UK’s emissions, with the country seemingly unsure how to proceed once Article 50 is triggered, inducing uncertainty on whether Britain can achieve its fifth carbon budget.

Within this context, this exploratory study will examine whether the achievability of the fifth carbon budget has been affected by Brexit by looking at the key drivers that have been affected, which are legislation, collaboration, and economics. This means that the research is not intended to provide conclusive evidence, but helps us to have a better understanding of the problem (Saunders et al., 2016).

Regardless of the rising public awareness on climate change due to recent volatile weather patterns (Webb, 2016), few studies have been conducted to understand the impact of Brexit on emissions (Creagh, 2016). The current priority in the Brexit context is to strengthen the UK’s global trade, leaving climate change behind. (May 2017, 2017b). With increasing divided opinions between those arguing that environmental management will be superior with local governance (Patterson, 2016) and those arguing that air pollution is one area that will become worse after Brexit (Keating, 2016), this study aims to understand how leaving the EU will affect the UK’s ability to meet its 2030 emissions output target.

**METHODOLOGY**

To answer this question, an exploratory and interpretivist research approach was used (Soiferman, 2010; Saunders et al., 2016; Dudovskiy; 2012, 2015, 2015b), based on a critical literature review and involving the use of semi-structured face-to-face interviews (RWJF, 2008) with 10 recognized experts who work in the areas of environmental journalism, research institutes, politics, action groups, and writing (See Table 1). These experts were questioned on their assessment of how Brexit will potentially affect the UK’s emissions output regarding collaboration, legislation, and economics.
Table 1

<table>
<thead>
<tr>
<th>Name</th>
<th>Speciality</th>
<th>Institute</th>
<th>Brexit Stance</th>
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<tr>
<td>Expert 1</td>
<td>Environmental Conservationist</td>
<td>Independent</td>
<td>Remain</td>
</tr>
<tr>
<td>Expert 2</td>
<td>Environmental Policy Analyst</td>
<td>Independent</td>
<td>Leave</td>
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<tr>
<td>Expert 3</td>
<td>Senior Ecologist Consultant</td>
<td>Independent</td>
<td>Leave</td>
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<tr>
<td>Expert 4</td>
<td>Investigative Environmental Reporter</td>
<td>DeSmog UK</td>
<td>Remain</td>
</tr>
<tr>
<td>Expert 5</td>
<td>Climate Change Analyst</td>
<td>Climate Home</td>
<td>Remain</td>
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<tr>
<td>Expert 6</td>
<td>Pro-Brexit Campaign Group Manager</td>
<td>GBO</td>
<td>Leave</td>
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<tr>
<td>Expert 7</td>
<td>Leading Environmental Consultant</td>
<td>Independent</td>
<td>Remain</td>
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<tr>
<td>Expert 8</td>
<td>Member of the European Parliament</td>
<td>Labour MEP</td>
<td>Remain</td>
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<tr>
<td>Expert 9</td>
<td>Sustainability Researcher</td>
<td>Schumacher Institute</td>
<td>Remain</td>
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<tr>
<td>Expert 10</td>
<td>Global Affairs Editor</td>
<td>Independent</td>
<td>Leave</td>
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Through the application of a grounded theory method (Johnson and John, 2000; Charmaz and Bryant, 2007; Gibbs, 2007; Walsh et al., 2015), the results were analysed adopting a thematic analysis approach to produce a thick description that acknowledges areas of conflict and contradiction. This procedure identified emerging patterns from the primary research, providing foundations for the construction of theories and explanations (Walsh et al., 2015) which were vital to interpreting the split judgment on the environmental impacts of Brexit (Temple, 2016). Nvivo software was used for coding the data collected (Charmaz, 2006) as it facilitates in-depth qualitative analysis of textual data to discover key themes. The results were subject to triangulation to increase the validity of the study by using different sources of information (e.g. papers), as suggested by Crabtree (2006) and Thurmond (2001).

**FINDINGS**

**The legislative crisis**

The review of the literature regarding the legislative crisis has identified a key theme in the research, which is how strong political views are influencing authors’ interpretations. For instance, Smith (2016), Clark (2016) and Mount (2017) affirm that no one knows what the costs of leaving the EU will be as environmental research has been understudied and left behind while the Brexit rhetoric intensifies. Evidence of bias in the political arena is provided by Eustice (2016; 2016b) – with historical links with UKIP1 documented by Bayley (2016) and Merrick (2014) – and Lucas (2017; 2017b) and Rayner (2016), who has experience in the Royal Commission on Environmental Pollution and as a senior lecturer in environmental studies at 2. They affirmed that the UK would have more agile mechanisms to act if outside the EU and that remaining in the EU would threaten the UK’s capacity to achieve its fifth carbon budget respectively.

This literature analysis found quantitative evidence revealing how EU policy has been effective for the UK – also confirmed by Evans (2017) and Scott (2014) – stressing that environmental legislation accelerated the clean-up of power stations, reducing the

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1 UKIP: abbreviation for the United Kingdom Independence Party
2 the London School of Economics (LSE), a leading university in sustainability studies
impact of their emissions in the UK. Also, Huhne (2016) argues that with the abolishment of the Department of Energy and Climate Change and without the external legislative mechanism, the UK will continually downgrade its capability. Additionally, methodological issues have been reported that undermine the credibility of Brexit supporters in environmental matters (3S Research, 2014; Deacon et al., 2016; Boslaugh, 2017).

Burns et al. (2016), Bennett (2017) and Tindal (2014) affirmed that the EU helped to modernize the UK’s environmental policies and that without being bound to EU legislation, the UK will go back to previous substandard practices. However, Jones (2016) pointed out bias in this affirmation due to the affiliation of these authors with EU green movements and anti-Brexit stances in their studies undermining their credibility. Onesass (2017) indicates that the historical data that support the research of these authors is not reliable, concluding that it would be remotely illiterate to suggest that with the information readily available to the UK now, its legislation would revert to standards similar to those 47 years ago.

Goodman (2016) and Foley (2016) affirm that the new legislation will be weaker as the government will be too focused on the legislative consequences of Brexit to match the EU concerning progressive environmental legislation. Grubb (2016) and Parr (2013) indicate that without the EU, the UK’s renewable energy initiatives will lose momentum as the statistical evidence suggests that the investment in this sector will fall 95% between 2017 and 2020. This is an indication that this component of the environmental policy is currently not on track to meet the 2020 European renewables target (Moore, 2017). Based on these facts, it becomes evident that if new innovative renewable policies are not involved in a post-Brexit legislative package, the policy gap will only expand while other issues take precedent.

In conclusion, the diverse political views of the remain and leave campaigns are still distorting sensible debate around how this legislative crisis can be understood. Scepticism of whether a new legislative package can be effective is rife, as a growing number of variables will influence new legislation. However, this scepticism has not been universally accepted, which may mean Brexit has presented the UK with a new opportunity to produce an enriched legislative package capable of achieving the fifth carbon budget.

THE ECONOMIC CIRCUMSTANCES OF A POST-BREXIT UK

Brexit has created a significant amount of uncertainty around the UK economy as it is unknown if the UK’s new relationship with other countries will damage confidence and investment (Giles, 2016) and preserve the UK’s access to the single market as 50% of the UK’s exports are to the EU (García, 2016). The contingency plan states that the Brexit priority is to make the UK a great, global trading nation (May, 2017c; Chapman, 2017) and this can be seen as the catalyst towards the development of a controversial UK-US free trade agreement. Analyses by Park (2017) and Creagh (2016b) on the new US environmental policy conclude that there is a credible base to believe that a trade deal with the US will not force the UK to protect its environment; it may well force it not to.

Another key theme in the literature reviewed is how lower investment in the UK post-Brexit will hurt climate change efforts, such as the development of wind power (Carvalho and Dussaux, 2017). The Green Alliance report (2016) on post-Brexit infrastructure claims that government’s investment in renewables will fall by 95 percent.
between 2017 and 2020. However, the affiliation of the source to the remain campaign casts doubt on the neutrality of the report.

Despite the possible economic complications regarding emission output, a niche theory has developed in the literature, with analysts contending that the economic environment should not affect emissions targets. The CCC (2016) research argues that Brexit is a new development, and uncertainty in macroeconomic circumstances is not, so increased uncertainty does not require any change to the carbon budgets at this time. This study condemns that view as it is fundamentally accepted that economic circumstances affect climate change, which is exemplified in Gupta and Obani (2013), who demonstrated a strong correlation between a country's level of economic growth and its CO2 emissions.

In conclusion, the economic landscape of post-Brexit Britain will be a decisive driver in whether the UK can achieve the fifth carbon budget target. The conveyed macroeconomic priority of economic growth in the UK is rapidly becoming the conservative parties’ and electorate’s main mantra. The UK-US free trade negotiation can be observed as a new unknown for the future of UK climate change mitigation, especially with the transatlantic president's unquantifiable views on climate change raising concerns for emissions. These changes in the way the UK is presenting itself as a global trading nation will potentially put pressure on emission outputs, as the UK will likely have to accept the environmental terms of larger economies on trade deals – economies such as China and India, which have relatively lax pollution controls. The perceived falling confidence in the economy could hurt European and foreign direct investment in the UK in climate mitigation, which may increase the UK’s dependency on high emission sources to supply energy, therefore increasing emissions output. This falling investment will enhance fears of recession in the UK economy, which historically has caused adverse externalities for climate change, as archived research shows emissions outputs have increased detrimentally during the recession.

The fragmentation of future collaboration

Europe’s collaborative front has developed excellent research infrastructures with integrated and networked research teams (Fraunhofer, 2009). It is widely feared that Brexit will see the UK lose access to EU institutions and funding for research programs and vital collaborations (Parminter, 2016). Research by Cary and Matternich (2013) suggests that European individual member states are unlikely to have sufficient funds to develop decarbonisation technologies. However, their research must be interpreted with caution as being funded by mainly pro-European movements (e.g. IEEP, Friends of the Earth, Greenpeace).

Another key theme that has emerged from the literature is how Brexit will harm climate change research. Gannon (2016) and Frenk et al. (2015) expressed deep concern about how UK research and development will be funded. Also, Cressey (2017) and McMeeking (2016) suggest that this fact could also drive an academic exodus that could affect the expansion of green economies, ultimately affecting the achievement of the fifth carbon budget (Bulgarelli et al., 2009). This, worryingly, could see the UK further align itself with the US to build new collaborative projects, with possible detrimental effects given the position of the US regarding climate change (Demianyk, 2017; Broome, 2017).

A significant theme that has appeared in the literature relating to the collapse of collaboration is the risks involved with the breakdown of the European burden-sharing
agreement. This has created much uncertainty around the government's accountability for its emissions failings, as the UK will not be accountable, nor compelled to report on its annual emissions to the EU or submit plans for corrective action if it misses targets for reducing emissions (FFT, 2016; Teverson, 2017; Nelsen, 2017). This already perceived lack of accountability has empowered the current UK government to push forward a fresh row about plans for a third Heathrow runway, ignoring European official climate change advisors’ warnings on the heightened pollution the expansion will cause (Clark, 2017).

The outcome of this section has shown that fragmentation of EU-UK collaboration will have devastating consequences for the future of UK emission control. Funding for technology and research will become increasingly volatile and scarce, in particular for innovations for renewables that will influence the achievability of the fifth carbon budget, as innovation is paramount to cope with climate change.

THE VOICE OF EXPERTS

The absence of European law should not affect the achievability of the fifth carbon budget

Six of the participants agreed that the loss of EU legislation should, in fact, have no negative bearing on the achievability of the fifth carbon budget. These experts stressed that Brexit would not alter the emission policy in the UK.

As one expert mentioned, it is “theoretically possible for us now to keep the best bits of EU legislation and augment our own” (Expert 6).

Also, four participants suggest that freeing the UK from the unambitious EU legislative system will have a positive effect on the achievability of the fifth carbon budget, explaining that the “archaic nature of the EU is holding us back” (Expert 6) regarding developing legislation and the “current legislative mechanism costs a significant amount and achieves very little” (Expert 10), while the UK has tended “to argue within the EU for stronger emissions targets” (Expert 5) as the UK’s own domestic legislation has been “in excess of EU targets” (Expert 2). In this new context, Brexit could offer an “opportunity to make some smart green infrastructure projects and subsidize our British businesses” (Expert 6), which would benefit the achievability of the fifth carbon budget.

A breakdown of European collaboration will damage emission mitigation

It was stressed that the biggest economic effect of Brexit would be a significant fall in green investment, as it will be “harder to attract investment in clean energy infrastructure over the next few years.” Consequently, “private sector investment in energy efficiency, the low carbon economy, electric transport, and clean energy infrastructure will basically disappear”, making the transition to a “low carbon economy” impossible, so there is “no way we can meet the fifth carbon budget” (Expert 4).

Concerns emerged about the development of closer links with the US as “greater collaboration with America and less with our European counterparts in international standards like climate change” (Expert 1) and “collaboration with the US will grow as we align ourselves with their trade agreement” (Expert 2), inducing negative effects on the goals of the fifth budget as the agenda will move towards a “Trump-like word” (Expert 2), considering that “Trump has on several occasions threatened to pull the US out of the climate treaty” (Expert 2).

Five of the participants agreed that the potential costs associated with getting
involved with collaborative mitigation knowledge post-Brexit would have a negative effect on emissions as “we may need to start paying for access to information or knowledge which is currently free at point of access” (Expert 7). And if the “UK government does not negotiate a payment to cover access to sustainability knowledge” (Expert 7), it will certainly make it more difficult for the UK to achieve the fifth carbon budget as collaboration in emission control will “come at a cost, which the government may leave institutions to pay for. A breakdown in collaboration will result in a weaker UK framework in emissions” (Expert 7).

The next ten-year period will pose enormous challenges for UK emission reduction

Nine of the participants overall agreed that the Brexit process has had a negative effect on emission mitigation and therefore the achievability of the fifth carbon budget as the political arrangement of the post-Brexit government will see emission mitigation become a low priority objective. “Tackling climate change will not be viewed as a priority and so less will be done on it” (Expert 4) as other governmental objectives would take precedent and “political pressure to cut energy bills or save steel jobs will slow emission mitigation down” (Expert 5), creating a situation in which the UK will go – in environmental issues – through a “re-adjustment period where things might have to get worse before they get better” (Expert 9).

Two of the participants agreed that emissions mitigation would be weakened in the next ten years due to the imminent legislative downgrade that will take place. “The UK has one of the worst EU records for air quality, and could, in theory, stop even trying to enforce legislation after Brexit” (Expert 2), which ultimately will damage the achievability of the fifth carbon budget. Consequently, fiscal uncertainty can be foreseen in the next 10 years, making the “UK take a more conservative budget stance that in turn would limit its ability to be generous in climate finance and development assistance” (Expert 2).

Brexit overall has caused more harm than good for UK emission mitigation

Seven of the participants agreed overall that Brexit had had a negative effect on the achievability of the fifth carbon budget. Four participants agreed that the biggest driver for falling emission mitigation performance would be the loss of the European legislative mechanism in the UK, as the current government does not have the “appetite for sustainable development and without an external watchdog we may see this government have a bonfire with environmental legislation” (Expert 10). This would see the policy gap increase and possible regression on pollution control, as shown in past environmental failings in legislation: “when environmental decisions are left to their own devices in the United Kingdom, generally, the choices made are not beneficial for nature” (Expert 9).

However, deviating opinions also emerged affirming that “emission mitigation works best at a local level, not a multinational level” (Expert 3) and Europe has made a “power grab on international treaties and tried to fit them into a one-size-fits-all system across a diverse continent, which has shackled us significantly” (Expert 3). Therefore, “EU membership should not make any difference to UK climate policy, because the UK Climate Change Act sets emission-reduction targets well in excess of those required under EU law” (Expert 2). So Brexit should have no bearing on the achievability of the fifth carbon budget.
CONCLUSION

The investigation into the legislative crisis, the economic future of the UK, and the fragmentation of collaboration has created a solid forecast for the direction the country is heading. The results of this investigation show that in the legal area Brexit has potential to have a positive effect on the achievability of the fifth carbon budget. The semi-structured interviews show that the participants believe augmenting legislation to national demand will improve emission mitigation. There is a deep discomfort with the EU's legislation mechanism – which coincides with the studies and critical literature review, in which arguments were found indicating that environmentalism works best at a local level, not a continental level. Hence, it would be inaccurate to suggest that Britain, a country that has pioneered environmental measures for centuries, would destroy its commitment to the environment because of Brexit. The conclusion that has been drawn is that Brexit has presented the UK with a new opportunity to produce an enriched legislative package, one that is more ambitious and moulded and capable of achieving the fifth carbon budget.

Regarding the view of how post-Brexit economic circumstances in trade and investment would influence emissions output, the results show that this should have a negative effect on the achievability of the fifth carbon budget. The emergence of a conclusive pattern from the participants’ responses indicates that trade deals will have priority and the UK may sink to the lowest common upper bound on regulations, with special emphasis placed on a potential US trade agreement. There is a deep discomfort in the literature and findings with regard to the current UK alignment with the US in investment and trade. Given that the UK is the smaller economy, it will have to align its regulations with Trump’s climate policy to meet trade requirements which are extremely dangerous. The conclusion that has been drawn in this section is that making the UK financially secure will take extreme precedent over emission mitigation; it will be the in the country’s best interests to relax its standards to secure economic prosperity in a dangerous macroeconomic environment, implying that the fifth carbon budget’s achievability is harmed.

On the possible implications of how a collaborative breakdown with Europe would affect pollution in the UK, a conclusive pattern, which emerged from the participants’ responses, was the fears of the potential costs associated with getting involved with collaborative mitigation knowledge, as the UK could be phased out. These conclusions coincide with the previous literature review, where some authors affirm that the UK will lose access to EU institutions and funding for research programs and vital collaborations, starting with the £3.5 billion funding from the main EU budget for climate change adaption and a transition to a low carbon economy. However, it was not just a loss of funding which concerned the study, as worries about a breakdown in European climate change mitigation could again see the UK further align itself with its ever-closer partner the USA. The conclusion that has been drawn in this section is that Brexit has seriously affected UK collaborative efforts in climate mitigation, as the loss of European funding and further alignment with the US, a country which is wavering in its emission alleviation, can only have detrimental effects on the achievability of the fifth carbon budget.

The general conclusion is that Britain’s departure from the EU will have a negative influence on the country’s ability to achieve its fifth emissions budget. The exogenous shocks to the UK’s economic and collaborative systems will prove to be unrepairable in
the short term, even if richer legislation is brought into practice. The country’s economic prosperity will take precedent over the carbon budgets, as it will guarantee the re-election of the current conservative government and will provide a safer economic future for an uncertain macroeconomic Brexit environment.

In analysing the conclusions of the study, limitations have been identified concerning the small size of the sample, as it might not be fully representative of the field of research. This limitation has affected the results of the study, as a broader purposeful sample could have brought further expertise into the study. Additionally, another credibility issue that arose in the study was about the inductive reasoning approach for the study, as it assumes the uniformity of nature throughout the universe. When analysing contemporary issues, this is perhaps disadvantageous as Brexit's volatile nature cannot guarantee uniformity. This circumstance has influenced our interpretation as these findings are based on probabilities, an indication that the results presented cannot be truly conclusive, but are a guide to the direction the UK is heading.

This study has contributed to knowledge in the field through its ability to address a new trending issue in society which has not been studied before. The study can be used to justify further studies as well as a way of adding to existing knowledge. Through asking the right questions in a purposeful sampling methodology and doing a thorough thematic data analysis, this study has contributed to the knowledge on the current contemporary issue of emissions within the context of Brexit. An additional contribution to knowledge was made in that the study took a virgin approach in investigating Brexit; this different approach to solving the identified problem was unique and result-oriented, which has added to existing knowledge on the subject matter.

This study also identified the need for further analysis of the externalities of a UK-US free trade agreement on emissions control. It seems the pollution rhetoric has been left behind as economic prosperity intensifies. A study providing strong statistical evidence for possible emission increases could be used to challenge the government and possibly reform this dangerous deal. It is recommended that further research should be undertaken in analysing how UK policy should be directed now that it is not bound by European legislation. This research could advise future legislation in emission mitigation, which is vital, as there is a scarce amount available – as this study has discovered. Further research into this could provide a sound basis for challenging future policy decisions.

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INTER-ORGANIZATIONAL RELATIONSHIP OF CONSUMER NON-GOVERNMENTAL ORGANIZATION vs ENVIRONMENTAL GOVERNANCE: EXAMPLE OF ENERGY SECTOR IN LATVIA

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Larisa Brokane
Baiba Miltovica

ABSTRACT
The paper examines the role of consumer non-governmental organizations in environmental governance in Latvia. It argues that in view of the complexity of environmental problems the role of consumer non-governmental organizations promote the interests of protecting consumers from energy inefficient decision, hazardous products or false advertising. They function through inter-organizational relationship as a set of pressures and incentives that motivate business to improve its environmental performance from one side and shaping policy and programs in order to reach needs of the society through implementing the environment friendly and economically reasonable solutions. The aim of the paper is to investigate inter-organizational relationship (referred to interchange of views) between consumer non-governmental organization and environmental governance as integrated and harmonised governance. The paper examines the environmental governance aspects reflecting theoretical approach described by Baron Adger D.P., Jordan A., Biermann F., Weston B. The consumer non-governmental organizations role of interrelation meaning is revealed by the Dietz T., Ostrom E., Stern P.C. and Young D.R., Wagner A. The theory of environmental governance determines the key players influencing environmental outcomes and their objectives, the organizations within which they interact, and the expected results of their relationship. Key to different forms of environmental governance, therefore, are the political and economic relationships that organizations embody, and which shape identities, actions, and outcomes. The paper describes emerging environmental policy implementation planning, action programming and implementation of specific projects in collaboration with consumer non-governmental organizations since consumer organizations play a central role in sustainable development and environmental government initiatives to promote sustainable consumption. The research methods of the paper are based on case study research method as a source of theoretical insight that tends to embrace a range of research designs that use governance as an exogenous factor in political environment. Conclusion of the paper states the interrelation meaning between consumer non-governmental organizations and environmental governance in the framework of regulation of public utilities commission.

Keywords: environmental governance, non-governmental organizations, consumer organizations, green products, sustainable development, sustainable consumption.

INTRODUCTION
The demand for governance comes from individuals concerned about the quality of the environment. They may express demand in their roles as citizens, consumers, investors, or members of non-governmental organizations. Environmental governance may come
about idea that consumers demand environmentally friendly products or investors show a preference for environmentally friendly choices.

However the environmental governance address problems of the Earth’s climate challenges or to continue to solve ecosystem services exists on a large scale. As such the term „environmental governance” have attempt to address wide perspective: global climate change, ecosystem degradation, and the like therefore paper will address energy perspective due to the high aspiration goals agreed in the Paris Agreement in 2016 (147 Parties have ratified the Paris Convention) and furthermore reflects in European Union political and legal framework of the European Commission package “Clean Energy for All Europeans” (European Commission, 2016) that requires from national governments agree with legally binding limits to global temperature rises and commitments on curbing carbon emissions as well as ensure clean energy transition to cut CO2 emissions by at least 40% by 2030 (United Nations, 2016).

Non-governmental organizations involved in environmental governance are highly diverse, including local, national, regional, and international groups with various missions dedicated to environmental protection, sustainable development, poverty alleviation, animal welfare, and other issues. However, non-governmental organizations seek for promoting environmental and economical awareness, campaigning organization, addressing the governments and companies in order to shape policy and programs in order to needs of the society while implementing the environment friendly and economically reasonable solutions.

Theoretical aspect of this paper is targeted towards exploring the links between environmental governance and the role of consumer non-governmental organizations in Latvia in the context of Energy Sector.

The analysis starts from the attempt to realise to which extent role of non-governmental organizations is important in environmental governance.

The aim of the paper is to investigate inter-organizational relationship of consumer non-governmental organization in environmental and environmental governance in order to make it integrated and harmonised.

The tasks of the paper are following:
1. To define and describe environmental governance at the national and EU level;
2. To reveal consumer non-governmental organizations role of inter-organizational relationship;
3. To analyse the role of consumer non-governmental organizations in environmental governance in Latvia in the context of Energy Sector.

The research methods based on case study research method as a source of theoretical insight that tend to embrace a range of research designs, that use governance as an exogenous factor in political environment. Case itself is important for what it reveals about the phenomenon and for what it might represent.

For the purposes of this paper, environmental governance includes the issue, existing legal frameworks (legal acts in regulation public utilities sectors in the EU and Latvia) and the consumer conditions (CEER Status Review and Consumer Market Scoreboard 2016).
Description of Environmental Governance: national and EU level

Environmental governance is a complex area that tends to reconcile different social perspectives with regard to the sustainable use of environmental resources as a basis for sustainable development. Environmental challenges are pressing environmental governance arrangements that combine the regulation of market, state and civil society for sustainable development.

Environmental governance field is broad, spanning the various ways that actors and institutional structures both drive and respond to changes in the natural world (Evans, 2012). Environmental governance research focuses on how environmental ideas and impacts are produced, but also on how these systems are sustained, regulated, and transformed at national and European Union (furthermore EU) levels.

Environmental governance by various scholars including D.P.Baron is understood to include the full set of pressures and incentives that motivate business to improve its environmental performance. This includes markets for green products and investments, regulatory relationships, and non-governmental corporate engagement.

To define environmental governance principles requires a theoretical foundation of “governance” concept and to reveal “environmental governance” construct. Environmental governance and related issues have gained significance in the field of applied social sciences. The concept of governance can be defined in a variety of ways and there is no consensus among academics regarding its core elements. Kersbergen K. and Waarden F. define governance as “systems of rule, as the purposive activities of any collectivity, that sustain mechanisms designed to ensure its safety, prosperity, coherence, stability, and continuance”. However, for Biermann F. refers to a “…new forms of regulation that go beyond traditional hierarchical state activity. It usually implies some form of self-regulation by societal actors, private-public cooperation in the solving of societal problems, and new forms of multilevel policy” (Biermann F., 2010).

Most academics recognize governance as multidimensional and highly contested term. Indeed, many expert views go beyond regulation, government and law, they recognize governance for sustainability, global environmental governance, human development and environmental governance (Adger N.W., Jordan A., Biermann F., Weston B., Bollier D.). By Adger N.W. and Jordan A., governance is related with governance of societies in ways that facilitate sustainability and is likely to be a hugely complicated and politically contested undertaking. Also Delmas M.A. and Young O.R. refer to sustainability and environmental governance interrelation “shifting the discourse from the conventional idea of environmental protection to the new – and still contested – idea of sustainable development that intensifies the growing need for governance” (Delmas M.A., Young O.R., 2009). The literature on voluntary approaches to environmental protection has generated a number of new insights for the study of environmental governance:

First, it demonstrates that a theory of environmental governance is inherently political: even in the absence of environmental regulation, corporate environmental behavior is strongly influenced by political forces, perhaps most importantly by the perceived threat of regulation.

Second, it shows that government as well as industry can benefit from devising alternatives to traditional regulation, although the value of voluntary programs to government depends upon the background threat of regulation.
Third, the literature shows that corporate environmental strategy can influence public policy through a variety of channels, some welfare-enhancing and some welfare-reducing; all of these alternative forms of influence need to be understood in order to develop a satisfactory theory of environmental governance (Dietz, Ostrom, Stern, 2003).

From the contemporary environmental challenges involve systems that are intrinsically global (for example, climate change or reduction of emissions) or are tightly linked to global pressures (for example, Volkswagen emissions scandal) and that require governance at levels from the global all the way down to the local to ensure that consumers’ cases should be handled on the maximum recovery (European consumer lobby BEUC hailed the cases, saying not enough had been done to protect EU citizens).

There has been surprisingly little crosspollination between groups working on micro- and macro-scale environmental governance. Dietz, Ostrom and Stern identify a set of factors that are required for successful environmental governance at any scale:

1. providing information,
2. dealing with conflict,
3. inducing rule compliance,
4. providing infrastructure, and being prepared for change.

The most of these factors have been the subject of considerable economic research, but they have not yet been combined into a full theory of environmental governance, neither in the area of the eco efficiency (like energy efficiency, energy use, alternative energy, etc.). However, environmental governance concept is linked with sustainability (that proposes an integrated concept of economic, social, and environmental planning practices of societies) while it goes beyond measures and regulatory interventions of market responses to keep systems of rule as the purposive activities of any collectivity. In order to recognize environmental governance concept it have to be considered economic, social, nature and governance inter-organizational relationship.

Thus, environmental governance follows the relevant principles of sustainability, being defined by the United Nations documents (Our Common Future, 1987) as “to satisfy the needs of the present while ensuring the possibility of satisfying future needs”. Therefore, the concept of sustainability combines aspects of environmental sustainability, social issues like human rights, community engagement, etc. and environmental governance, which shall be considered complementary, not contradictory, promoting economic welfare, social inclusion and nature protection.
With the global economy and international politics progress, the recent environmental global action plan came into force of the high-aspiration Paris Agreement in 2016. In the recent studies, environmental governance and regulation elements can be identified to provide the basis for establishing constructs for the collective governance of common goods that interacts with the social and environmental spheres and becomes increasingly evident to society (Kapaciauskaitė, 2017; Samm, 2017).

The Paris Agreement is based on Conventional realtions in among national countries and requires a common cause to undertake ambitious efforts to combat climate change. The Paris Agreement’s central aim is to strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius. Additionally, the agreement aims to strengthen the ability of countries to deal with the impacts of climate change. To reach these ambitious goals, appropriate financial flows, a new technology framework and an enhanced capacity building framework will be put in place (United Nations, 2016). The EU has been at the forefront of international efforts towards a global climate deal and building coalition of developed and developing countries in favour of high ambition that shaped the successful outcome of the Paris conference. While in the same time EU has been making environmental awareness and disseminating the climate change programms adaptation in the national Member States.

The Europe 2020 strategy emphasises smart, sustainable and inclusive growth as a way to overcome the structural weakness in Europe’s economy, to improve its competitiveness and productivity and to underpin a sustainable social market economy. Europe 2020 strategy targets on climate change and energy and sets up objectives for climate and energy policy - GHG emissions, share of renewable energy in gross final energy consumption, primary energy consumption and final energy consumption. Due to the Europe 2020 the progress at the EU and Member State levels is assessed with a special
focus on the wider socioeconomic effects of the emerging green economy and transition to low carbon economy (Europe 2020, 2017).

The EU was the first economy to submit its intended contribution to the Paris Agreement. It is already taking steps to implement its target to reduce emissions and setting up ambitious regulations to promote further changes – the European Commission did present a package of measures (European Commission, 2016) to keep the European Union competitive as the clean energy transition to changing the global energy markets.

In accordance with the package “Clean energy for all Europeans” consumers shall be at the heart of the Energy Union, which means their active involvement in the transition process and, in particular, having in place political framework conditions that ensure affordable energy costs for all parts of our society, including the vulnerable while it also raises concerns about whether the regulatory proposals are specific enough to meet consumer engagement into transition process.

Various experts did emphasise that serious risks and dangers exist, especially if the transition process is too fast or too slow and lacks integrated planning. Both, opportunities and risks have to be considered adequately (Samm, Vidan, 2017). In order to fully benefit from the energy transition (decentralised and flexible nature of energy efficiency and renewables technologies) an increasingly larger part of energy policy and decision-making should be transferred from Member States to local and regional public government levels. Kapaciauskaite research states that stable, credible and adaptive global environmental governance requires the acceptance and involvement of national governments, their bureaucracies, and the growing population of non-state actors (Kapaciauskaite, 2017).

The EU, Member States and local and regional governments, in cooperation with non-governmental organizations can ensure strong public and community involvement that will facilitate energy transfer and make sure it is accelerated and implemented in a coordinated manner that provides the most benefits to consumers and national economies.

**Consumer non-governmental organizations role of inter-organizational relationship**

Non-governmental organizations (furthermore NGO’s) often refer to civil society. Moreover civil society is usually understood as civic or non-state associations, social movements and other non-state associations that represent organisational forms of civil society.

Theoretical explanations for the rise of non-state actors in contemporary governance have evolved significantly (Wagner, 2000). Neoclassical economic theory emphasises the failure of government and the market to efficiently provide public goods as central in the development and role of non-profit associations. In this tradition, civil society organisations develop to either:

1. fulfil demand for public goods left unsatisfied by government,
2. partner with government in the provision of public goods,
3. make public policy demands of government and to ensure accountability in public governance (Young, 2000).

Therefore it is essential to provide analysis how the roles of communities, corporations, NGOs, nation-states, and international agreements, with particular emphasis on the many interesting hybrid forms of governance are possible.
The characteristic of inter-organizational relationship refers to partnership forms among various non-governmental organizations, businesses or various interest associations. This paper uses the concept of relationship as a value neutral term, equivalent with interrelation meaning.

In accordance with Cropper, Ebers, Huxham, and Ring inter-organizational relations, as its subject name suggests, is concerned with relationships between and among organizations. As such organizations can be public, business, or non-profit and the relationships can range from dyadic, involving just two organizations, to multilateral, involving huge networks of many organizations. Inter-organizational entities are the manifestations of the existence of inter-organizational relationships. Terms such as partnership, alliance, and network are widely used discursive representations (Cropper, 2008).

As such independent institutions and organisations emerging in the new forms of governance, and thus bypass traditional ways of political influence, makes it a noteworthy phenomenon. In order to clarify the concept of governance in environmental politics requires discussion of various approaches to policy-making.

The focus is on how the concept of environmental governance institutions draws upon or departs from three prominent concepts addressing governance, namely EU framework, organisations and institutions (Pattberg, 2004).

The term partnerships has predominantly referred to profit-making relationships between individuals, but in recent years gained prominence as a more general inter-organisational idea, including relations between various transnational actors, international organisations and states. Two events are generally believed to have triggered the transformation from confrontational strategies to those of partnership in the field of environmental politics.

Inter-organizational relationships are described on the basis of dyadic or multilateral data. Typically researchers observe ‘values’ for the relationships between two or more organizations (e.g. the extent of information exchange, the mechanisms governing the relationship, the power imbalance, or the degree to which the organizations in a relationship have particular attributes in common) (Cropper, 2008).

In more general terms, the concept of partnership refers to four important aspects that apply for local and global co-operations:

**First**, partnerships have shared goals that are beyond profit-making, thus excluding purely market-coordinated relations or other private interrelations to maximize profit.

**Second**, partnerships can involve actors from different sectors of society; third, they have institutionalised relationships; and fourth, partnerships engage in rule-making and/or implementation, facilitating outcomes that would not be possible in absence of the specific partnership.

Critical scholars have pointed to the fact that the term partnership represents a policy paradigm based on the assumption of trust, shared benefits, and an underlying win-win situation, concealing the fundamentally different goals and power resources of the actors involved (Pattberg, 2004).

Relationship between NGOs or global interest associations is phenomenon that apply new forms of governance, and thus bypass traditional ways of political influence. The focus is on how the concept of environmental governance institutions draws upon or departs from three prominent concepts addressing governance, namely
international regimes, organisations and institutions. Partnership between environmental governance and NGOs into global-scale environmental problem solving, policymaking, and implementation remains an important global challenge. Civil society has much more to offer to intergovernmental processes. The very legitimacy of international decisionmaking may depend on NGOs as a way to ensure connectedness to the publics around the world (Gemmil, Bamidele-Izu, 2002). The environmental governance system must facilitate both an expansion of these roles for NGOs and of better processes of participation therefore environmental governance target groups can be identified as municipalities, public administration, business sector, and general public. The core of the environmental governance target groups are non-governmental organizations, mass media, education and science sector.

![Environmental governance target groups](image)

**Figure 2.** Environmental governance target groups  
*Source: Ernstins, Lice (2011)*

Civil society organizations take a dominant role in the ascendant model of governance that emphasises networks of semi-autonomous actors and are recognized by various scholars (Young, 2000; Wagner, 2000). Civil society refers to the intermediate sphere between the state and the market that can be characterised by social and political power of households, civil associations and social movements.

The non-governmental organizations (including consumer groups and organizations, other civil society representatives) play an important role in societal development and awareness rising of environmental issues.

Since consumer organizations are part of the civil society organizations that have a role to play in the global effort to reduce greenhouse gas emissions (creating environmental awareness; providing scientific information and monitoring implementation) they become influential in initiatives to mobilize consumer concerns about global warming into more sustainable consumption choices.

National EU Member States, businesses and non-governmental organisations are involved in the development of political initiatives, common commitments that results in consumer education campaigns, new products, labelling and certification initiatives in order to promote consumer concerns about global warming into more sustainable
consumption choices. Climate Change and Energy Efficiency are important issues therefore many consumers have already made close-to-home offers or environmentally friendly choices to ensure resource savings and climate conscious lifestyle.

Consumer non-governmental organizations at national, regional or global are playing an increasingly large role in policy-making, in stimulating international conventions, drafting national legislation or engaging in the work of the public policy. They can be critical regarding environmental policy and its implementation. Cinnamon finds that states and private sector attempts to increase the role and responsibility of civil society and local government in addressing climate change while climate change is recognized as „the biggest challenge facing the European Union and the entire planet over the coming years and decades” (Cinnamon, 2010: 180).

Number of non-state actors influencing the environmental governance system and these actors are diverse and varied in their interests and in the ways they influence the system. Moreover, consumers might be influential by investment decisions and purchasing behaviour, it is recognized by Samm, 2017; Vidan, 2017; Baron and Lyon, 2011 and Kapaciauskaite, 2017. Baron and Lyon underlines that the economics literature traditionally assumed consumers and investors ignore the environmental externalities associated with their market activities, but their behavior appears to have changed in recent years. Consumers can directly reward firms with a record of environmental accomplishment by paying a premium for their products (Baron and Lyon, 2011). Researchers (Samm and Vidan 2017) conclude that it is important to note that increases in energy efficiency always depend on investment. As a consequence, improved efficiencies do not necessarily lead to a lower cost burden for consumers or industry, as the communication asserts a number of times. They do, of course, always lead to lower energy consumption and therefore have a beneficial effect in terms of climate (Samm and Vidan, 2017).

To summarize, inter-organizational relationship of environmental governance is evident while it only be guaranteed through a combination of national governance and other modes of governance that reach beyond the nation state. The non-governmental organizations with empowerment from society can take a role in increasingly large spectrum of environmental governance (including energy as one of the public utilities sector).

The role of consumer non-governmental organizations in environmental governance in Latvia: Example of Energy Sector

It should be noted that after 1990 the number of organizations and networks has emerged abruptly in the Baltic Sea Region as it was a response to the geopolitical changes. In particular, the changes in the global environmental governance, when the number of global conventions was adopted after the Rio conference in 1992, influenced the governance in the Baltic Sea Region. For instance, the Baltic 21 is a regional expression of the global Agenda 21 adopted by the United Nations at the Rio conference (Kapaciauskaite, 2017). During the 90ties consumer movement activity, it became apparent that there is a need for closer links between it and the government of the Latvia, as well as for a specific procedure for ensuring regular contacts between legislative and executive bodies.
Latvian development, as part of the EU economic policy, has been affected by the EU’s general political guidelines (including EU-2020 strategy) and previously indicated effective developmental models – integrating international governance (the Paris Agreement); National Governance at the executive level (including the regulation by EU); regional governance and local governance (at local municipality level and Regulator work). Inter-organizational relationships in each of the level are constructed by different structures (interrelation intensity, hierarchical relationships) and actors (emerging from different sectors - public, municipality, business, media or education).

![Figure 3. Vertical structure for public environmental governance and stakeholder’s participation](source)

The emerging consumer non-governmental organizations in Latvia arised from the Nordic Council of Ministers and the Nordic Council internal politics as well as external cooperation with assistance to the Baltic states with organizational form establishment. Furthermore consumer movement develops by support from both national and European Union funding, programmes, political initiatives and grants, its member fees and other specific projects and campaigns. Furthermore, the consumer movement expanse to 10 regional, independent consumer organizations and its actors engage with local municipality level issues.

Due to adopted political and legislative measures at EU level on the climate change established mandatory greenhouse gas emission reductions that is grounded in both - hard law measures and soft law measures at the Member State level. Certainly, one of the key topics for consumer concerns are not only environmental issues but also the resource saving and energy efficiency issues. The demand for the public utilities services raises
questions how to ensure energy efficiency in order to safe environment and purly due to economic reasons. In accordance with Consumer Markets Scoreboard (2016) market performance improved, but more efforts needed in telecoms and energy sector (EC Consumer Markets, 2016). The energy sector scores badly in terms of reported price increases some of the markets (for example, Latvia) where market liberalisation is weak and competition is low.

The emergence of energy efficiency occurs within a context of more encompassing social, political and economic changes. Some of these social and political changes are referred to as shift from government to governance. The idea is pointed out by Bas and Pieter (Bas and Pieter, 2006) that regulatory and control measures provide insufficient deal with environmental problems they were gradually complemented with economic and market-oriented and social or communicative instruments. “... policy making endorsed by consensus and characterised by co-operative relationships between government and private actors” (Bas and Pieter, 2006:247). It has been found that changes in the interrelations between state market and civil society, as environmental issues gradually become a shared responsibility of state bodies, market agencies and civil society representatives as distinct phenomena such as deregulation or liberalisation. In the context of energy sector the monitoring and enforcement arrangements are governed by the relevant ministry and energy regulator in Latvia. The regulator is a referee that ensures engagement of civil society organizations. However interrelations between regulator and civil society reffers to formal and standardized procedure.

In order to thoroughly understand the relationship between National Regulatory Authorities (furthermore NRAs) and consumer non-governmental organisations, it is essential to identify the nature of inerrelationtion meaning.

According to the responses received in CEER review, is clear: the relation between NRAs and consumer non-governmental organisations is largely based on voluntary initiative (62%, see Figure 4), only 38% interrelations are based on legally required contracts between NRAs and consumer non-governmental organisations. Thus, mutual interest in collaborating with each other appears to be the main driving force in building and maintaining relations between NRAs and consumer non-governmental organisations.

![Figure 4. Ratio of voluntary versus legally required inter-organizational relationship](source: CEER Status Review (2013))
However, to the more specific inter-organizational relationship in the form of working arrangements between NRAs and consumer non-governmental organisations, these have turned out to represent rather straightforward ways of collaboration. CEER results showed that the same working arrangements prevail regardless of whether contact is mandated by law or voluntary. The investigation revealed that NRAs and consumer organisations most commonly cooperate through the following means: participation in public consultations, regular working group meetings, sharing of research or data (CEER Status Review, 2013).

The Public Utilities Commission (PUC) or the Regulator in Latvia is institutionally and functionally independent, full-fledged, autonomous body governed by public law which carries out regulation of public services in energy, electronic communications, post, municipal waste management and water management sectors in accordance with the law “On Regulators of Public Utilities” and special legal acts of the regulated sectors. It is evident that interrelation meaning in environmental governance as regards engagement of the consumer non-governmental organizations in Latvia is based mainly on legally required relationship. As recognized in the CEER Status Review on the involvement of consumer organisations in the regulatory process is recognized by twofold - voluntarily driven and legally required. Moreover, Dietz, Ostrom and Stern identified that successful environmental governance can be identified by set of factors that goes beyond legally required relationship (providing information; dealing with conflict, rule compliance and providing infrastructure, and being prepared for change). CEER report recognizes other interrelation forms for Regulator and consumer non-governmental organisations further collaborations.

**Figure 5.** Issues on which NRAs and consumer organisations collaborate  
*Source: CEER Status Review (2013)*

Due to Public Utilities Commission proposed forms of interrelation by law for civil society engagement in Latvia are: public consultations and public hearings (Public Utilities Commission Infographics, 2015). With each form of participation which the PUC has chosen to achieve an objective specified by law involve society only on a strict and stiff form of interrelation in its activities. A number of factors influence the development impact of NGOs; many of which are determined by the relationship between the NGO sector and the State authorities.
From the theoretical perspective the environmental governance is based on assumption that government is viewing non-governmental organizations not only as agencies that will help them to implement their programs, but also as partners shaping policy and programs in order to needs of the society while implementing the environment friendly and economically reasonable solutions.

While in reality inter-organizational relationship of consumer non-governmental organisations in the decision making process is based on the legally required organizational relationship; consumer non-governmental organisations play more static rather than operational role. The process of public consultations should be encouraged by bringing environmental and consumer non-governmental organizations into the discussion to provide expertise on drafts regarding condition (for example, regarding traders, tariffs, return on capital, etc.) and perspectives analysis and formulation of new ideas in order to develop environmental governance it integrated and harmonised way.

CONCLUSIONS
In order to describe environmental governance it is important to recognize governance as multidimensional and highly contested term. Environmental governance field is broad, spanning the various ways that actors and institutional structures both drive and respond to changes in the contemporary world. Environmental governance research focuses on how environmental ideas and impacts are produced, but also on how these systems are sustained, regulated, and transformed at national and European Union levels.

Reducing greenhouse gas emissions is a central objective of the Europe 2020 strategy and European Commission package “the Clean Energy for all Europeans”. There are various non-governmental organizations whose concerns are focused on various areas such as social issues, health issues, environmental issues and consumer concerns. Consumer non-governmental organizations have a twofold participation meaning in environmental governance: from one hand to ensure environment friendly and from other hand economically reasonable solutions.

Not only governments and the business sector commit to implementing policies that guide consumer in sustainable course but also consumer organizations through EU political initiatives, mechanisms and programmes therefore investigate inter-organizational relationship between consumer non-governmental organization and environmental governance is evidential.

Consumer non-governmental organisations in EU Member States largely based on voluntary initiative (62%), only 38% interrelations is based on legally required contracts between NRAs and consumer non-governmental organisations. Inter-organizational relationships of consumer non-governmental organisations in the decision making process in Latvia are based on the legally required formal interchange of views. Consumer non-governmental organisations play more an oppositional rather than operational part.

It is recommended to create new and effective forms of public consultation that requires regulatory and institutional changes and can be regarded as attempts to adjust existing formal and informal consultation practices. For example, regulatory authorities should develop an advisory bodies (both mandatory and ad hoc groups), giving consumer non-governmental organizations more power and credentials in the regulatory process. It is advised that formal practices might be complemented by more flexible approaches that take into account specific circumstances of consumer non-governmental organizations. For
example, the cooperation between consumer non-governmental organizations and NRA can develop in new forms of inter-organizational relationship like joint capacity building activities, exchange of mutual expertise, collaboration on Alternative Dispute Resolution mechanisms for consumers in Energy sector.

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