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AIMS AND SCOPE

Transition is the widely accepted term for the thorough going political, institutional, organizational, social, and technological changes and innovations as well as economy-wide and sector changes in societies, countries and businesses to establish and enhance a sustainable economic environment.

Managing Global Transitions is a social sciences' interdisciplinary research journal. The aim of this journal is to publish research articles which analyse all aspects of transitions and changes in societies, economies, cultures, networks, organizations, teams, and individuals, and the processes that are most effective in managing large scale transitions from dominant structures to more evolutionary, developmental forms, in a global environment. The journal seeks to offer researchers and professionals the opportunity to discuss the most demanding issues regarding managing of those transitions to establish and enhance a sustainable economic environment.

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Baltic Pathways from Liberal Trade Model to Neo-Mercantilism in the European Union

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The economic progress of the Baltic States after the restoration of independence has been closely related to the liberal ideology and values of their economies: openness to investments, simple tax system and low tax burden, liberal trade policy, and flexible labour market. Unlike the Baltic States, some of their main partners in the European Union (EU) have focused on promoting their economic growth by the neo-mercantilist way of expanding exports, supported by the economic structure of these countries exporting high technology and capital goods. As a result, when the Baltic States are expecting that in a broader context the other EU member states share the same vision of the liberal market economy, their motives have not been fully understood among their regional trade and cooperation partners. Current study will debate whether the practical implementation and needs of the European neo-mercantilism meet the economic and social needs of the Baltic States. Additionally, the study focuses on the question whether in practice the Baltic countries should be ready for the European neo-mercantilist project in upcoming years.

Key Words: European Union, Baltic States, mercantilism, protectionism, liberal trade

JEL Classification: B2, F1, F5

Introduction

The economic progress of the Baltic States after the restoration of independence has been closely related to the liberal values of their economies: openness to investments, simple tax system and low tax burden, liberal trade policy, and flexible labour market. After joining the European Union in 2004, the Baltic States started to follow more moderate and social EU strategies when formulating the economic policy, but have retained its reputation as an open liberal economy with modern and business-friendly regulatory environment.

Unlike the Baltic States, some of their EU partners have focused on promoting their economic growth by the neo-mercantilist way of expanding exports, supported by the economic structure of these countries

exporting high technology and capital goods. As a result, when Baltic States are expecting that in a broader context the other EU member states share the same vision of the liberal market economy, their motives have not fully been understood among the regional trade and cooperation partners.

Openness of Baltic States to the world market has also increased countries' vulnerabilities to the external shocks, the impact of which was fully felt during the economic crisis in 2008–2011. This has also heated internal debates, whether the liberal trade model or the neo-mercantilist model will offer more welfare and security for upcoming years. Lessons from the financial crisis in 2008–2011 have highlighted that more openness will cause both deeper recession in the beginning of the crisis but also faster recovery. Key variable in minimizing losses will be the existence of emergency reserves (as was the case in Estonia) or decisiveness to use external debts (as in Lithuania).

The contrast between the liberal approach followed in the Baltic States and the neo-mercantilist views dominating particularly in Germany are at the heart of the present study. Current study will debate, whether the practical implementation and needs of the European neo-mercantilism meet the economic and social needs of the Baltic States. Additionally, the study focuses on the question whether in practice the Baltic countries should be ready for the European neo-mercantilist project in upcoming years.

Theoretical Debates: Advantages and Critics of Liberal Trade and Neo-Mercantilism

Which are the main arguments in favour of liberal trade model and neo-mercantilist model from the perspective of Estonia, Latvia and Lithuania?

A general discussion whether countries – and specially small open economies – should rely on the free trade principle to improve world welfare or use interventionist trade policy regimes to protect domestic producers, deal with market imperfections and improve the domestic welfare, is one of the fundamental questions of the international trade theory already for centuries. In the academic debates, the advantages and benefits of free trade are associated with the efficient reallocation of resources without price distortions, increased specialization and economies of scale, more intense competition at domestic level leading to the new incentives to increase efficiency, the diffusion of international knowledge through trade and innovation, and a shakeup of industry potentially cre-

ating Schumpeterian environment especially conducive to growth (Krugman and Obstfeld 2006; Winters and Cirera 2001, 13–36).

Theoretical as well as empirical studies have confirmed the relationship between the country's openness to trade and the higher growth rates and strong tendency towards economic convergence, with the countries with lower *per capita* income levels growing more rapidly than countries with higher *per capita* income level (Sachs and Warner 1995, 8–12). Greater exposure to global opportunity costs, arising from trade policy reforms, would force continuing efficiency in the domestic market as well as in external markets (Kaplinsky 1998, 4).

Particularly in a small open economy, country's national welfare is theoretically highest with free trade as under perfect competition a small, price-taking country will gain by abolishing the tariffs, whereas any type of intervention by the government reduces the national welfare. Free trade is considered as the optimal policy for small economies with many trading partners, as the increase of imports has both an impact on the domestic price level and on the production volume in domestic sectors competing with imported goods, which contributes to the reallocation of available resources in the most productive sectors. The resources will not be used to produce goods that could be imported at a lower price. Trade liberation also increases the productivity by providing less expensive or higher quality imported intermediate goods and technology, as well as increases the variety of goods (Dornbusch 1992).

From the early 2000s the academic debates have become more diversified, arguing that methodological problems with the empirical strategies employed in the earlier research leave the results open to diverse interpretations, that open trade policies are significantly associated with higher economic growth (Rodriguez and Rodrik 1999). The direct effects of the country's openness to trade as well as the causality (i.e. is economic growth induced by more trade or vice versa) remain subjects for dispute too. The role of the country's openness to trade on the economic growth should not be underestimated and should be looked along with other determinants of growth.

Also, systematic criticism has been made on (global) liberal trade policy, e.g. Reinert (2004), Reinert and Reinert (2011), and Chang (2002), and on the effect of the Washington consensus and the IMF free trade policies in Latin America and Africa, where authors refer that liberal trade policy has reduced the wealth, or at least diminished the growth rates when compared to the protectionist 'bad policy' years, of several coun-

tries and increased poverty among some social groups. Mercantilism as a wider economic concept and protectionism as an actual practical tool are main alternatives to liberal trade model (in addition to autarky and mixed models). Although theoretical literature often feels apprehensive about the protectionism, in recent history waves of interventionist and protectionist measures have occurred across the countries, imposing barriers to imports from other countries, controls on capital movement, etc. The trends of protectionism stem from the concepts of mercantilism and economic nationalism, stipulating that the wealth of a country should be measured by its currency reserves, stock of precious metals and a political intervention in economic affairs is necessary to maximize that stock. Thus, the gains from international trade rise solely from exporting and country's commercial policy should be based on extensive government regulation of international trade and creating conditions in the domestic economy that enable country to prevail over other countries in a contest for export supremacy (Irwin 1991; Rankin 2011). Early 'balance of trade' argument was strongly related to the view that 'one man's gain must be another man's loss' (Finkelstein 2000 in Reinert and Reinert 2011, 13).

The more recent concepts – neo-mercantilism and transnational mercantilism respectively from the early 20th century and the early 2000s – have widened the scope of mercantilism, stressing the importance of promoting economic growth by expanding exports, seeking for a balance of trade surplus and increasing the level of government foreign reserves, to achieve social or political objectives (Cesaratto 2010; Reinert and Reinert 2011). Neo-mercantilist countries encourage state promotion of sectors related to the production of goods which will be exported abroad to ensure that these companies will be competitive internationally and to decrease the foreign competition in the local market, promote large companies to compete with international industries, as well as manipulate monetary policy for the purpose to increase the competitiveness of local companies in international markets.

The views that in a global general equilibrium, if some countries increase net export, some other countries must increase their net imports, have been outlined (Stiglitz 2012), stressing that countries with persistent trade deficits might face difficulties to finance the deficit as well as high levels of net imports weaken aggregate demand which might lead to the fiscal deficits. The logic of 'net importers versus net exporters' has been outlined as applying to the EU trade policy (Papadimitriou and Wray 2011, 3).

At the same time, the effects of trade openness on budget balance are unclear. For example, according to Combes and Saadi-Sedik (2006, 3):

[...] while in theory, the net effect of trade openness on budget balance is ambiguous, empirically trade openness increases country's exposure to external shocks regardless of whether it is related to the natural openness, which is based on structural determinants of trade openness, e.g. the size of the country and its geographical characteristics; or to trade-policy openness, which is determined by decision makers. Additionally, trade openness affects budget balance directly, and here the effects of natural openness and trade-policy induced openness go in opposite directions: contrary to natural openness, trade-policy induced openness improves budget balances. [...] Governments, including for developing countries, may often resist liberalizing their trade regimes, arguing that their budget situation is already difficult and reducing tariffs will lead to larger budget deficits. Even if trade openness increases a country's exposure to external shocks and thereby adversely affects its budget balances, an outward looking policy strategy should lead to an overall strengthening of its budget balances.

To conclude, in the early mercantilist views balance of trade-argument was based on the zero-sum game approach. Thus, according to the mercantilist views the gains from international trade will result from exporting, in generalised terms the effects to the deficit countries as well as surplus countries should be analysed, especially in an economic bloc without the absence of a mechanism redistributing surpluses.

The systematic effects of modern mercantilism and related problems to both sides of partnership (net-exporters and net-importers and the need for a 'surplus recycling mechanism') have become visible during the on-going Eurozone crisis, especially related to the German-Greek trade partnership (Varoufakis 2011). The issues can hardly be solved without an institutional agreement on the European level.

Ideological Preferences of Baltic States in 1991–2014

After the restoration of the independence, all three Baltic States chose the liberal path with the aim to ensure macro-economic stability, attract foreign investments and become members of the EU and the NATO. Reforms were introduced in various areas from privatisation and liberalisation of prices and trade to institution building, monetary policy and

financial sector, public finances, and so on. The reforms have led to the significant inflows of foreign direct investments and resulted in high economic growth rates of 8–9% per year on average in real terms and more than doubled levels of national real wealth in 2000–2008 in Estonia, Latvia and Lithuania (Veebel and Loik 2012, 170).

The preference for market liberalism in political and economic landscape of the Baltic States was in many aspects caused by the pendulum effect of the society to the domination of the state and the central planning during the Soviet era. However, it could also be interpreted as an expression of individualistic ‘culture’ dominating in Estonia. For example, unequal treatment of the members of society is legitimated by the popular maxim that ‘one deserves one’s own success.’ Thus, if you do not succeed, it is your own misfortune (for the individualistic views in the Estonian society, opposing the former collectivist approach from the Soviet period, see Veebel, Namm and Tillmann (2014, 9–10).

In Estonia in the first years of the restoration of independence, liberal ideology was considered as an integral part of the new Estonian economic model by the political elite, opposing the central planning during the Soviet era. This approach has been mainly inspired by the works of Milton Friedman and Friedrich Hayek as well as the foundations of the Thatcherism.

Until the beginning of the financial crisis in the second half of 2008, Estonia has been commonly described as the good example of (neo-)liberal state model reflecting the economic success story in the CEE (Thorhallsen and Kattel 2012). (Neo-)liberal ideology has also been followed by the Estonian Reform Party occupying the prime-minister’s seat in last decade since 2004. The ideology of the main opposition party and the ruling party in the Tallinn city council, The Centre Party, is officially also based on the liberal values and aims, but instead of neo-liberalism it puts forward the values of ‘new liberalism.’ Hence, in practice the ideology is following more populist and left-centrist values. Accordingly, among the parliament parties in Estonia only the Social Democratic Party is clearly opposing liberal model (while being at the same time in governmental coalition with liberal Reform Party).

From the economic perspective since the mid-1990s, all the Baltic countries were mainly focused on deeper integration with the EU and started to adjust to the European rules. The main motivation was to benefit from the free trade area and customs union, as well as country’s attractiveness to the international capital flows and finding guarantees

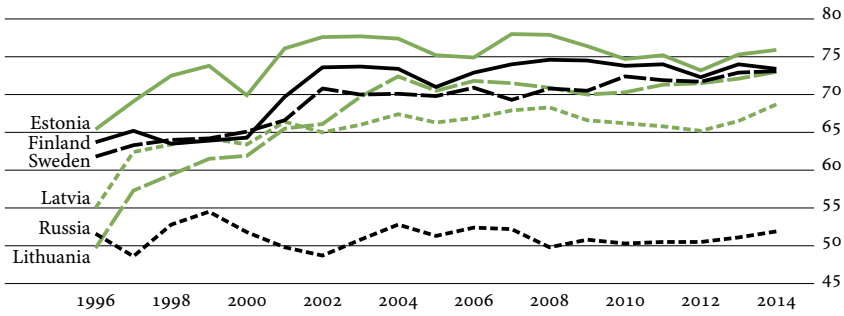


FIGURE 1 The Dynamics of the Heritage Index of Economic Freedom in 1996–2014 (based on data from Heritage Foundation, <http://www.heritage.org>)

for investors trusting the local currency. However, the liberal ideology has been seriously challenged both during the negotiations on the free trade agreement between the EU and the Baltic countries in the mid-1990s and the accession negotiations in the end-1990s, particularly in the area of foreign trade regime, regulatory norms and agricultural policy (Toming 2011; Vilpišauskas 2004). In 1995, Estonia decided to sign a free trade agreement with the EU without any transition periods protecting Estonian market and local producers, to underline the desire for deeper integration, which definitely allowed to speed up the accession negotiations with the EU later (Veebel 2009). Hereby, Latvia and Lithuania initially requested for transition periods both to preserve the trilateral free trade area of the Baltic countries should all three Baltic countries not join simultaneously the EU and to have a transition period in phasing out the free trade agreements with Ukraine. Although the need for transition periods disappeared during the negotiations, the fact itself reflects the importance of liberal economic policies for Latvia and Lithuania. Despite the radical changes in the Baltic countries during the European integration process, all three countries have retained the reputation as open economies with business friendly regulatory environment.

How liberal have the Baltic States been before and after the EU accession and how as the accession of euro area impacted the economic freedoms in Estonia and Latvia?

According to the Heritage Foundation's Trade Freedom Index during the period 1999–2005 Estonia was the country with the most liberal trade policy. In comparison to the other Baltic countries, the Economic Freedom Composite Index was highest in Estonia during the whole period 1995–2014, showing high values especially in the areas of investment freedom, trade freedom, and business freedom (figure 1).

In comparative Global Mercantilist Index carried out by the Information Technology and Innovation Foundation, all Baltic States ranked as 'low', which represents a 'least egregious' trade policy. In fact, all of the ranked countries of the EU fall under this category. From Baltic perspective it is important to note that Russia as one of main trade partners is ranked among countries with a 'moderate high' mercantilist approach (Jakobsons 2014, 28).

However, assuming that neo-mercantilist countries encourage promotion of exporting sectors by the state to ensure that these companies will be competitive internationally, in practical terms, the shift from the liberal ideology prevailing in Estonia in the early years of the independence, to the neo-mercantilist views offering support to the Estonian firms exporting abroad, could be observed. More precisely, in total 22 million EUR have been used for export grants and loans delivered by Estonian Enterprise and KredEX, supporting 541 Estonian companies and their export capability development during the years 2004–2009.

As the next step, all three Baltic States have also decided to join the euro area. In Estonia, the main efforts started in 2005 and the initial target was to join the Eurozone in January 2007. Latvia has joined the Euro area in 2014 and Lithuania in 2015.

According to the views of Bank of Estonia (Bank of Estonia 2013), in 2005 the main motivation behind Estonia's decision to join the euro area was related to the benefits of the monetary union through increased trade and financial integration, as well as higher economic growth and real convergence. The goal has been to ensure the trust in the currency and be open to the international capital flows' (Parts 2013, 273).

However, the euro area accession of the Baltic countries could also be to some extent interpreted as a step away from the liberal path and towards neo-mercantilist model, as the countries have joined the currency union where neo-mercantilist views were already dominant and thus, they were forced to follow common rules based on neo-mercantilist values. Of course, here it is the question if export-orientedness as a value counts more than the inner logic of the trade regime, which could be seen as locking the countries tightly into deficit or surplus positions (Papadimitriou and Wray 2011)

The global economic recession hit the EU's new members hard. The economies of the three Baltic countries, all of which previously enjoyed substantial growth, revealed their structural imbalances and exposure to fluctuations in external financial and commodity markets. As a result, the

economic recession eventually contributed to rising awareness and determination in those countries (to varying degrees) to stabilize, strengthen, and modernize national economies, to attract investments, and search for favourable outside markets and partners (Spruds 2014, 3–4).

Liberal trade and economic openness has also had its price to the foreign trade balance. The Baltic economies had severe problems of competitiveness in the early twenty-first century. In 2000–2008 the external trade deficit (for goods and services) in the Baltic States was between 10 and 20 percent of the GDP annually, the situation escalated after joining the European Union (in 2004) as trade deficits immediately exceeded 15 percent of the GDP and reached 20 percent in 2006. Most of the escalation could be attributed to the factors that boosted domestic demand – lending and consumption boom triggered by consumer optimism, loose government spending, and loss of external competitiveness due to unfavourable real exchange rate dynamics (higher domestic inflation). Moreover, the negative trade balance has also meant something what mercantilists of the past would have probably not appreciated – the external debt was rapidly accumulating in these countries (Jakobsons 2014, 31).

In Estonia, mainly based on the rapid increase in domestic demand during the boom years in 2006 and 2007, the trade balance has been in the European Union's favour in the trade relations between Estonia and the EU too. Firstly, the higher growth rates of Estonian exports and imports should be stressed, especially starting from 2005. In last ten years, Estonian external trade with other EU member states has annually increased on average by 9.5% and with third countries outside the EU by 9.7%, in comparison to the EU-28 external trade annual growth rates, which were, respectively, 3.5% and 6.3%. Even despite the temporary setback in 2009 induced by the economic crisis, particularly, Estonian exports to third countries outside the EU increased remarkably (annual average growth rate 16.4%). Thus, a preliminary conclusion could be drawn that Baltic States have, in general, managed to survive the financial crisis relatively well, by showing deeper decline rates but also faster recovery.

However, in year 2014 the economic growth in Baltic States was fastest in the only non-euro member (Lithuania), which also indicates, that while common currency is contributing in terms of stability and security, it might have slowing effect to economic growth.

Lithuanian exports have expanded robustly since the economic crisis and the growth has been faster compared with both the EU average, and

the other Baltic States. Lithuania's export growth is especially impressive given the significant challenges stemming from the crisis of 2008–2010, competitive devaluations by important trade partners (Poland, Russia, and Belarus to some extent), political problems with Russia (the most important export partner of Lithuania), and sluggish growth in the Eurozone. However, the perspective of the attraction of investments is not very rosy. Traditionally, Estonia has been more successful in attracting FDI than Latvia and Lithuania, and has a substantially higher stock of accumulated FDI. Nevertheless, the difference in FDI inflow has decreased in recent years (Kuokštytė and Kuokštis 2014, 127).

According to the external trade statistics, the most export-oriented country among the Baltic States appears to be Estonia with 12 200 EUR of exports per inhabitant in 2013, followed by Lithuania with 10 200 EUR per inhabitant, and only then by Latvia – with only 6 900 EUR of exports per inhabitant (Austers 2014).

When analysing the Baltic experience from a theoretical perspective, it must be noted that trade openness does not necessarily generate high deficit. Continuing deficit is either the consequence of mistaken specialization or lack of competitiveness, or both. Therefore, structural reasons have to be included in the analysis of long-term trade deficit. Dependence and structural features which have developed during decades of belonging to the Soviet Union, and the division of labour established in the 'Soviet economic space' are still reflected in the foreign trade structure of all Baltic countries (to a greater extent than in other EU member states from the CEE countries).

The asymmetry in the form of continuing trade deficit from the Baltic States? perspective could partially be explained by the neo-mercantilist characteristics of Germany economy, focusing on trade surplus, wage moderation, etc. However, based on the composition of the bilateral trade relations between Baltic States and Germany, one could argue that the dynamics of the external trade is in accordance with the liberal trade theory, stipulating that large countries are supposed to be net exporters in scale-intensive industries

The Options for Baltic States in the Neo-Mercantilist 'German Game'?

The Baltic States, being newcomers to the modern inter-national economic system and choosing for open market approach, have learnt the trade quickly. However, economy size, availability of human resources,

the number of available instruments, and promotional capacities are essential elements, occasionally preventing a more successful implementation of Baltic economic interests by using liberal trade model while many of their European partners prefer neo-mercantilist approach (Bukovskis 2014, 135).

In analysing the economic performance of the Baltic countries in the EU, firstly the higher growth rates of the exports and imports of the Baltic countries should be stressed, particularly starting from 2005. However, in the trade relations between the Baltic countries and the EU as a whole, the trade relations between the Baltic countries and the EU are asymmetrical, reflected in the constant trade deficits from the point of view of the Baltic countries. In other words, total imports have exceeded total exports, leading to continued discussions about the beginnings of this problem, as well as possible steps to be taken (Jakobsons 2014, 34).

In the intra-EU trade, the largest trade deficit in all three countries occurs in trade with Germany, showing some signs of reduction of the deficit during the years of economic recession, but rapidly increasing again from 2010. The Baltic countries are mainly exporting machinery and equipment, wood and wood products, and other manufactured goods to Germany, and importing machinery and equipment, metals and metal products, and transportation vehicles. In addition, trade relations with Germany, one of the most influential countries in the EU, are extremely important for the Baltic countries, whereas they only rank as second-order trading partners from German perspective.

Although the recent global financial crisis has led to some adjustments in the trade balances of the member states of the EU, the trade between the member states of the EU is still affected by large and persistent imbalances. For more than a decade, a group of the EU countries consistently runs high surpluses both in the intra-EU trade and in global arena, as based on the data on trading of goods Germany, the Netherlands, Belgium, Denmark and Ireland are the only member states of the EU both with the permanent intra-EU trade surplus and the total balance of trade surplus during the period 2002–2013. Although the trade volumes have decreased during the recent financial crisis, the trade balance of these countries has remained positive during the whole period, whereas in other EU member states, including also countries which had long-standing surpluses already from mid-nineties, such as Sweden and Finland, the trade deficits particularly *vis-à-vis* intra-EU trade partners occurred during the recent financial crisis.

The persistent trade surplus of these five countries has been associated with the high degree of competitiveness, which is also reflected in their rankings in the Global Competitiveness Index. In 2013–2014, Germany ranked 4th place, the Netherlands 8th place, Denmark 15th place, Belgium 17th place and Ireland 28th place. However, the roots of the trade surpluses do not derive only from the high degree of competitiveness. The trade surplus in the Netherlands and in Belgium both within the European Union and in the total world trade has also been associated with the ‘Rotterdam effect’ (refers to the phenomenon that goods from non-euro area countries are recorded at the port of arrival). The surplus in Ireland has been interpreted as a result of the large share of multinational companies in the country’s economy due to the Ireland’s attractive corporate tax system, so that the country serves as an export platform for multinational enterprises (Office for National Statistics 2015, 1). The same applies to Denmark, accompanied with the advantages stemming from the country’s location on the Baltic Sea and being the only Scandinavian country which is connected to the mainland Europe. In Germany, the trade surplus has been associated with the neo-mercantilist views dominating in this country.

In the current situation of the euro area, Germany represents a good example of mercantilist economy in the context of state building and industrialising, as the country has focused, among others, on trade surplus, production and productivity, wage moderation, compression of domestic consumption, etc (Cesaratto 2010). The same model can also be seen in broader context, when analysing the Germany’s hegemonic position in the EU, the relative weight of export-led accumulation in the ‘Model Deutschland,’ country’s ‘ecological dominance’ in the euro zone, as well as institutional flaws in design of euro (Jessop 2012). It has even been argued that the German neo-mercantilism has caused current economic recession in Europe, and that the causes of the recent economic and political situation in the European Union are related to the linkage between capital accumulation and export surpluses, ‘a situation in which, as is the case in Germany, most of the net external balance, are realized within Europe itself.’ According to critics, ‘in Germany it destroyed the dynamics of the domestic markets and provoked vulnerabilities of trading partners that will backfire on Germany.’

Thus, the situation also involves risks for the countries with trade surplus (Flassbeck 2012). In last ten years, Germany, but also the Netherlands and Austria have been implementing a neo-mercantilist trade policy, ex-

panding their exports within the EU and the euro zone and increasing the competitiveness compared to their partners (like Greece, Spain, Portugal, Romania, Bulgaria, Hungary, etc.), where trade deficit with respect to Germany and other stronger European economies has increased gradually (Toussaint 2013).

Thus, in practical terms neo-mercantilist views are prevailing in some EU member countries, supported by the economic structure of these countries exporting high technology and capital goods. In practical terms, during the period 2000–2010, Germany was the only economy among the EU-15 member states, who managed to increase their share in the world export as well as in the European Union's total export. Hereby, at the EU level, practical trade policy work seems to be inspired to a greater extent by neo-mercantilism as well, as some elements of mercantilism like promotion of exports and the pro-active role played by the EU-Commission actively intervening abroad in the interest of European based companies as well as dismantling trade barriers of third countries.

As stated, the absence of an intra-European mechanism for redistributing surpluses requires the deficit countries to undertake the adjustment by going into recession. The surplus countries will therefore suffer negative repercussions on their exports and on the related level of employment. They may still maintain their net position with a trade surplus, but at a reduced overall level of activity, with, thus, higher levels of unemployment, as Germany has today.

However, at least in Estonia political priorities (mainly security related) have prevailed over economic logic and needs without deeper debate. As stated by the current Estonian President, T. H. Ilves, 'it would be difficult to imagine the recovery of the European Union and the euro zone without Germany taking the lead' (Ilves 2013).

Conclusions

Estonia, Latvia and Lithuania have been commonly described as good examples of liberal state model. However, some of the main trading partners (such as Germany, the Netherlands, Austria, as well as Scandinavian countries) of the Baltic States have been described as neo-mercantilist countries promoting their economic growth by expanding exports, seeking for a balance of trade surplus and increasing the level of government foreign reserves. This approach is also supported by their economic structure exporting mainly high technology and capital goods. This has created situation, which is both economically unfair and not sustainable

for Baltic States, but is neo-mercantilist protectionism a better option for Baltic States?

Among Baltic political elite protectionist measures are in general considered ineffective in small open economies, given their small size relative to some of their main trading partners. Thus, free trade is considered optimal for an economy, whereas trade policy is an inefficient tool for redistribution of income. But in practical terms it must be admitted, that the country's manipulative ability depends on the relative size of trading partners, it leaves less bargaining power to the small countries. Also, as small countries are in general highly dependent on imports and exports, and their exports are geographically specialized, small countries are more vulnerable to exogenous economic shocks to the export; thus, due to the country's smallness its strategic policy tools – like neo-mercantilism, protectionism and subsidies – are *per se* limited. At the same time, this conclusion should rather be interpreted in the context of a small country with a growth potential depending on its export capacity, than a fundamental shift from the liberal model to protectionism. In a longer horizon, particular attention should be paid on avoiding drastic changes in aggregated demand (including the changes in the dynamics of export and import).

Because of deeper European integration, Baltic States' openness to trade has also resulted in high trade deficits and current account deficits until 2009, as well as asymmetry, particularly, with regard to the trade relations with Germany. At the same time, there has been no diplomatic reaction to the asymmetry in trade – instead of it, Estonia for example, has continuously stressed Germany's role as an engine of the recovery of the EU after the crisis. The author also stipulates that the future challenges of the Baltic States in the EU should deserve also institutional attention and could not be solved successfully at the member state level.

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Profitability as a Factor That Spurs Corporate Green Investment Practices in Johannesburg Stock Exchange (JSE) Listed Firms

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Present studies show corporate reluctance and a lack of interest regarding stimulation towards green investment initiative. This paper investigated the association involving profitability and corporate green investment practices in 100 South African CDP companies on the JSE. Using, Chi-square tests, the outcomes of the test demonstrate that profitability influences green investment practices in these JSE listed firms. Furthermore, a positive direct correlation between profitability and green investment practices in these JSE listed firms was determined. The paper hence indicates that firms can experience improved performance (profitability) if green investment activities are integrated.

Key Words: corporate profitability, green investment practices,

JSE listed firms, Carbon Disclosure Project (CDP), South Africa

JEL Classification: M14, Q01 Q53, Q54, Q56

Introduction

Since the pre-industrial era, global carbon emissions concentration levels have continued to increase and have become an environmental nuisance to modern society (Chan et al. 2012). It is estimated that the survival of future generations might be endangered if efforts are not made to reduce carbon emissions by the present generation (Eyraud, Clements, and Wane 2013). South Africa is no exception as current environmental problems are resulting from heightening carbon emissions levels (Inderst, Kaminker, and Stewart 2012). Therefore, reducing global carbon emissions is an important responsibility in the 21st century (CDP 2010).

Despite widespread environmental problems, some corporations are still not willing to engage in carbon reduction and green investment practices (Kesidou and Demirel 2012). Some reasons cited for corporate reluctance in engaging in green investment activities include, amongst others: ineffectiveness of numerous environmental metrics (Telle 2006); buyers disinterest in considering green issues during purchasing (Berrone, Surroca, and Tribó 2007); lack of green expertise and motivation by organisations (Aragón-Correa and Rubio-López 2007); green initiatives not regarded as constituting sound business sense by some organisations (Wagner et al. 2002).

The continual unwillingness by some companies to participate in green investment initiatives contributes to growing negative impacts on climate change (Zhu, Sarkis, and Lai 2008). Although some companies are still reluctant toward incorporating green initiatives, a number of companies are participating in green investment practices; these include some companies in South Africa (CDP 2013). Therefore, it is important to ascertain the motivators that enhance corporate green investment practices. This study explores if profitability stimulates corporate green investment practices. The main philosophical systems are, the conventional perception of the company (profit oriented), and the emerging issues on green investment initiative. These views conflict in relation to the direction of the association. Thus, the conventional perception illustrate that green investment activities generates financial losses to the company. Nonetheless, growing corporate green-based studies argue that the traditional view appear to be not the case. As such, this study will investigate if profitability influences corporate green investment initiatives in the JSE listed firms.

Therefore, the major research question that stimulates this study is: Does profitability influence green investment practices of JSE listed firms? The objective of this study is, hence, to determine if profitability influence green investment activities in JSE listed companies. This study is important in light of evidence that introduce that that some investors are still hesitant about green investments since they perceive that such investments may not necessarily yield positive financial returns (Yemshanov et al. 2007). The cost of delaying green investment initiatives, however, may be huge and irreparable, not only to business, but to the entire society (CDP 2013). Nevertheless, despite apparent apathy by some firms towards embracing green investment (CDP 2010), a good number of companies in the South African JSE are adopting some green investment practices (Johannesburg Stock Exchange 2013), hence the concern of this study to

find out if profitability motivate corporate green investment practices. This is important because finding and publicising these practices will assist in promoting better plus strong green and environmental corporate policies.

The first section examines the conceptual framework of the study. This is followed by an examination of related literature plus the theoretical framework of the study. The research methodology and data analysis procedures are briefly discussed. An overall discussion and its conclusion are also presented and discussed.

Conceptual Framework

This section implements a detailed analysis of the main concepts of this study. Hence, it begins with issues on corporate green investment practices. Then, the concept on firm profitability is also analysed.

CORPORATE GREEN INVESTMENT PRACTICES

Corporate green investment practices represent one distinct feature of modern firm environmental responsibility. Green investment is when companies' financial environmentally sound practices systematically, comprehensively and successfully lead to resource efficiency, removal of harmful substances and reduced carbon emissions, thereby optimising environmental benefits through green commodity provision (Ecologic 1998). On the other hand, corporate green investment practices also referred to as 'low-carbon and climate resilient investments' relate to responsible investing, actions and/or initiatives that are consistent with environmental ethics toward the reduction of carbon emissions by principally focusing, amongst other practices, on supporting green energy, low-carbon or clean technology and green related markets (Inderst, Kaminker, and Stewart 2012; Eyraud, Clements, and Wane 2013; Barnea, Heinkel, and Kraus 2005).

For example, Andiç, Yurt, and Baltacıođlub (2012) analysed Turkish firms found in the Ataturk Organized Industrial Zone (AOSB) and the Ulucak Industrial Zone (USB1) and discovered that they employed green supply chains. Aguilera-Caracuel, Hurtado-Torres, and Aragón-Corra (2012) studied 1556 export companies in Spanish food industry (that is fish, drinks, meat and agricultural goods) and demonstrated that they adopt environmental plus energy and carbon management mechanisms. Jaraitė and Kažukauskas (2013) investigated companies in 24 European Union countries from 2002 to 2010 using the Amadeus (Bureau van Dijk)

database and demonstrate that the firms employed green energy supporting structures such as Tradable Green Certificates (TGC) and Feed-in-Tariffs (FITs). Chan et al. (2012) investigated 194 foreign companies based in China and indicate that they integrate green supply chain management (GSCM) practices. Investec (2012) integrates energy efficient installations and green energy. African Bank Investments (2012) has incorporated a green procurement strategy and implemented waste and recycling schemes with firms such as Shred-IT. Sasol Ltd (2012) explains that the chemical and energy firm has integrated mechanisms that seek to evaluate the potential of Carbon Capture and Storage (CCS) practices.

FIRM PROFITABILITY

Profitability is the condition of acquiring financial profits or benefits by the company through integrating diversified business practices (Antonietti and Marzucchi 2013). It is the quality and capacity of yielding gains through operating activity of the firm (Stefan and Paul 2008; Lai and Wong 2012). Therefore, gains or simply profit may also refer to advantages that are acquired from financial benefits earned when all corporate initiative costs plus expenses associated with the earned income have been deducted (Tomasin et al. 2013). Hence, profitability represents the main objective of any business enterprise (Freedman 1962). Therefore, without profits the company is unable to maintain its current business operations in the long-term (Zhu et al. 2008). In this manner, measuring present and previous profitability plus estimating long-run business profitability prospects is significant (Nehrt 1996). Hence, a company that is experiencing high profits is empowered and has capability to provide its shareholders and other investor's high financial gains on investments made (Brammer and Pavelin 2006). In this regard, increasing profitability represents one significant aspect of corporate senior management teams (Melnyk, Sroufe, and Calantone 2003). Hence, firm managers are constantly devising techniques that transform the company in order to acquire high financial benefits (Vachon and Klassen 2008).

Related Literature

There has been an increase in literature, which attempt to develop an association between profitability, and corporate green investment practices. For example, Brammer and Pavelin (2006) analysed 447 large firms extracted from the FTSE All-Share Index in the UK and determined that voluntary environmental reporting was noticeable in companies that had

reduced debts and more divided ownership. Al-Tuwaijri, Christensen, and Hughes (2004) investigated 198 companies, which were part of the 1994 IRRRC Environmental Profiles Directory in the USA on the connections involving environmental reporting, financial performance and environmental performance by applying a Three Stage Least Squares estimation, and discovered that the environmental performance of the firm is positively associated with economic performance. Antonietti and Marzucchi (2013) conducted a study on 851 manufacturing companies in Italy on the effect of greening on corporate productive efficiency from period 2001 to 2006. They explain that a corporate green investment policy results in positive company productivity if investment is aimed at minimising externalities and achieving resource efficiency.

Zhu et al. (2008) analysed 11 manufacturing companies in China on company-level association with green supply chain management (GSCM) and spotlight that there was a positive association between organisational performance (learning procedures and institutional support) and GSCM initiatives thereby generating a competitive advantage to the firms. Zhu, Sarkis, and Lai (2008) surveyed 171 Chinese production companies (automobile, electrical, power generating and chemical) and found that green practices in the firms, supply chains improved logistics efficiency and minimised wasting of resource material. Lai and Wong (2012) surveyed 128 top managers of manufacturing exporting companies in China, acquired from the Dun & Bradstreet database, and outcomes spotlight that green practices generate a positive relationship with environmental and operational performance, while legislation promotes green performance association. Cagno, Trucco, and Tardini (2005) carried out research on 134 Pollution prevention (P2) schemes from United States (60%), Norway (%), Australia (19%), Morocco (1%), Spain (1%), New Zealand (9%), Mexico (1%), Turkey (2%) and Canada (6%) and point out that environmentally compatible manufacturing procedures are no longer viewed as an obligatory stance but a strategic initiative since they enhance the entity to achieve long-term competitiveness.

Vachon and Klassen (2008) instituted a survey on 28 manufacturing companies from North America (that is the United States and Canada) on environmental practices and manufacturing performance. They discovered that environmental planning initiatives and environmental problem solving processes have a positive association with the firm's manufacturing performance (competitive benefits, cost-effectiveness) since the firm is empowered to make use of their suppliers procedures, technology and

expertise. Melnyk, Sroufe, and Calantone (2003) undertook a research on 1510 US firms about their perceptions regarding environmental management systems (EMS) and ISO 14001 and the outcomes demonstrate that firms, which adopt environmental management practices, experience a positive overall company performance in all dimensions. Simmons and White (1999) examined 126 electronic Canadian and United States firms to establish the link involving ISO 9000 and company performance and the outcomes point out that ISO certified companies produce higher profits than non-certified firms do. Plouffe et al. (2011) analysed the eco-designed product performance of 15 French companies and 15 Quebec firms and found out that these firms' profits increased significantly as they managed to experience cost reductions in these products life cycles. Nehrt (1996) investigated the association involving timing and intensity of financing mechanisms concerning pollution reduction plus profitability of 50 paper and pulp companies (that focus on chemical bleaching) from 8 countries and the outcomes indicate that a positive connection involving early integrators of pollution prevention practices and financial gains was evident.

Nonetheless, this experience is highly unlikely in all companies since different companies have diversified structures and governance systems. For instance, Horváthová (2010) undertook a meta-regression evaluation of 64 results acquired from 37 previous researches conducted in USA, European, Canadian and Asian firms. The study highlights that portfolio researches had a tendency to indicate a negative association involving environmental performance and financial performance. The research further outlines that time requires to be considered if a positive association involving environmental and financial performance can be determined. Busch and Hoffman (2011) investigated 2500 companies from the Dow Jones Global Index on connecting carbon plus financial performance of the firms. The research demonstrates that procedure-oriented environmental activities (with respect to carbon management) generate a negative relationship with financial performance but results-oriented environmental activities (with respect to carbon management) generate a positive relationship with financial performance of the firm. King and Lenox (2002) analysed 614 US public companies on pollution minimisation practices which generate profits using 2837 company-annual observation records from 1991 to 1996 and point out that waste prevention practices generate profits but pollution reduction practices were found to generate no financial gains.

Wagner et al. (2002) studied European paper production industries on the impact of environmental performance on financial performance measured by Return on Capital Employed (ROCE) and a negative relationship between environmental and financial performance was generated. Telle (2006) scrutinised Norwegian plants from 4 industries (non-metallic, chemicals, pulp and paper and basic metals) on whether corporate greening pays for the time period 1990 to 2001 and concludes from different results generated on the relationship involving environmental and financial performances; it cannot be ascertained if greening pays (that is premature) but can be viewed in terms of when or who it affords financial gains. Wayhan, Kirche, and Khumawala (2002) evaluated environmental certification (ISO 9000) integration in USA companies and put forward that adoption of ISO 9000 generates a weak (limited) effect on the companies' economic achievements. Aragón-Correa and Rubio-Lopez (2007) analysed 140 food-manufacturing firms in France and the UK about proactive environmental policies and outline that incorporating green activities will not result in improved firm financial benefits. Berrone, Surroca, and Tribó (2007) conducted a study on 398 firms acquired from 26 countries and obtained results that state that environmental pro-activeness of the firm on its own will not produce financial gains. Zhu, Sarkis, and Lai (2007) evaluated 89 Chinese automotive firms regarding their green supply chain management (GSCM) initiatives and found that green practices in firms supply chain operations have a negative association with the firms' economic performance. Graves and Waddock (1999) utilised *Fortune* data to analyse 653 companies from 1984 to 1994 and highlight that the association involving organisational environmental and financial performance yielded insignificant findings.

Theoretical Framework: Goal Framing Theory

The goal framing theory has been associated with firm environmental conduct (Lindenberg 2008; Lindenberg and Steg 2007). In this manner, goals frames determine corporate environmental conduct (Lindenberg and Steg 2007). Hence, when the company establishes a particular goal, there is a high probability that the firm becomes more receptive to information, which supports realisation of the set goal (Lindenberg 2008). Therefore, in this globalisation era, which is constituted by high natural environmental concerns and issues, the goal framing theory fits settings linked to corporate environmental conduct (Lindenberg 2006). Now, within corporate settings, profitability represents the core goal; but

to acquire high profits, the company must also meet other background environmentally oriented goals. These background goals can be a corporate green image, environmental consciousness and environmental legislation. Thus, it is evident that profitability, corporate image, legislation and environmental consciousness represent multiple corporate motivations, which influence the environmental behaviour of the company towards adopting green investment practices; hence, they are not homogenous (Lindenberg 2008). In this case, activating the focal goal (that is profitability in this study) influences corporate environmental information processing the most since it represents the goal-frame (Lindenberg 2006). On the other hand, other goals, namely, corporate image, legislation and environmental consciousness heighten or minimise that ability or strength of the focal goal (profitability).

Consequently, when background goals, namely, corporate image, legislation and environmental consciousness are compatible with the focal goal (profitability), then they are able to empower and strengthen profitability. On the other hand, if the background goals, namely, corporate image, legislation and environmental consciousness are conflicting with each other, then there is a tendency to weaken the focal goal (profitability) thereby reducing its strength (Lindenberg and Steg 2007). Therefore, in this study, the goal framing theory is seen as fitting since we demonstrate that the micro-foundations developed through theory enhance generation of major strategy questions in a novel approach-specifically, how strategic goals determine firm environmental behaviour.

Methodology

This study made use of secondary data retrieved from the firms' 2012 sustainability reports or annual integrated reports. This study was a multiple case study since the research considered 100 South African Carbon Disclosure Project (CDP) companies on the JSE. Hence, 100 sustainability reports or annual integrated reports of the South African Carbon Disclosure Project (CDP) firms were examined. Using content analysis, the researchers extracted information which indicate profitability as a factor that promote corporate green investment practices in JSE listed firms. In this study, the researchers created a list of phrases that relates to the influence of the specific variable (profitability) on corporate green investment practices. The use of classification themes in corporate social and environmental sustainability research has been applied by Gray, Kouhy, and Lavers (1995) and also Hackston and Milne (1996). The researchers re-

TABLE 1 Results on JSE Listed Companies Indicating the Extent to Which Profitability Influence Green Investment Practices

		Green investment practices		Total
		High	Low	
Profitability	No	41	59	100
	Yes	59	41	100
Total		100	100	200

ferred closely to sentences and sections (paragraphs) on sustainability or annualised integrated reports of the selected firms. Sentences or phrases which have an association with the classification list under the relevant variable (profitability) were extracted (Holsti 1969). Therefore, the classification list this study adopted about profitability was constructed under the following headings: marketability from green investments; green business opportunities; reductions in costs from green investments; competitive advantages from green practices; productive efficiency realised by greening; minimised green business risks; financial entity green demands and market shares and growth from green practices. In this study, the researcher considered sentences or sentence contexts and not independent words, and this approach is recognised for improving reliability, meaning and complete comprehension of facts for further examination (Hackston and Milne 1996). Thus, if management declares that profitability does drive their initiative, the number of such declarations from various companies was inserted in the ‘Yes’ row, and if there is no declaration regarding profitability as a driving factor, the number of such non-declaration statements was inserted under the ‘No’ row. Hence, this study converted analysed textual data to a numerical form. The data in this study was therefore analysed using the Chi-square tests.

DATA ANALYSIS

The major approach for data analysis in this study was both quantitative and qualitative analysis. The quantitative approach, which is Chi-square tests is presented as follows:

The calculations of the IBM SPSS Version 22 produced the Chi-square tests results as demonstrated in table 2 and table 3.

In this study the χ^2 critical value with $df = 1$ and $\alpha = 0.05$ (level of significance) is 3.843. The χ^2 statistic value was determined as 6.480 as indicated in table 2. The χ^2 statistic value is the Pearson Chi-square

TABLE 2 The Relationship between Profitability and Green Investment Practices in JSE Listed Firms: Chi-Square Tests

Item	(1)	(2)	(3)	(4)	(5)
Pearson χ^2	6.480 ^a	1	0.011		
Continuity correction ^b	5.780	1	0.016		
Likelihood ratio	6.515	1	0.011		
Fisher's exact test				0.016	0.008
Linear-by-linear association	6.448	1	0.011		
Number of Valid Cases	200				

NOTES ^a 0 cells (0.0%) have expected count less than 5; the minimum expected count is 50.00. ^b Computed only for a 2×2 table. Column headings are as follows: (1) value, (2) degrees of freedom, (3) asymp. sig. (2-sided), (4) exact sig. (2-sided), (5) exact sig. (1-sided).

TABLE 3 Results on the Correlation between Profitability and Green Investment Practices in JSE Listed Firms

Item		Value	Approx. Sig.
Nominal by Nominal	ϕ	0.180	0.011
	Cramer's V	0.180	0.011
Number of Valid Cases		200	

value. Therefore, the decision was that we reject H_0 and accept H_1 since χ^2 statistic value (6.480) is greater than χ^2 critical value (3.843). Thus, profitability influence green investment practices in JSE listed firms.

With respect to this research, Phi and Cramer's V were two tests deployed to ascertain the strength of the relationship between profitability and green investment practices in JSE listed firms. The results obtained from table 3, show that the strength of this relationship was obtained to be 0.180. The outcomes indicate a positive linear relationship involving profitability and green investment practices in the JSE listed firms. Therefore, a positive direct relationship between profitability and green investment practices in JSE listed firms was ascertained.

DISCUSSION OF THE FINDINGS

The findings from the Chi-square tests outline that profitability influences green investment practices in JSE listed firms. To harmonise these outcomes, Phi and Cramer's V tests were employed to test the strength of the relationship involving profitability and green investment practices in JSE listed firms. The findings determined that the strength was 0.180

thereby illustrating a positive direct correlation between profitability and green investment practices in JSE listed firms. The findings could therefore suggest that some South African companies have begun to realise that green investment activities are not financial sacrifices. This perception is based on the study findings, which demonstrated a positive linear relationship involving profitability, and green investment practices in JSE listed firms. Thus, earlier studies, for example, De Cleene and Sonnenberg (2004) examined social responsible investing in South African firms and highlight that these firms view sustainability investments as ones, which generate financial losses. It is against this background that JSE listed firms could be changing towards expanded green initiative incorporation.

Therefore, the study outcomes that profitability influences green investment activities of JSE firms can also be supported in light of various findings. For example, SAICA (2009) demonstrates that South African companies, which incorporate green programmes, sustain business competitiveness. *SANews* ('Call for Collective Approach to Climate Policy' 2011) proclaims that green practice adoption improves South African firms' performance and productivity. Tech-Pro ('Going Green in the SA Supply Chain' 2014) highlights that greening the corporate supply chain leads to improved energy efficiency and lowered transport costs in South African companies. Greenfinder ('IDC – Green Energy Efficiency Fund' 2014) contributes that energy efficiency practices in South African firms reduce investment risks, create high product quality, which increases sales and generates improved company market value.

Destinyman.com ('How to Keep Your Company's Carbon Footprint Low' 2011) also express that South African firms, which embrace and promote green initiatives attract an increased number of green investors. Therefore, it is now evident that given all these financial advantages associated with greening, profitability has indeed influenced green investment activities in JSE listed firms. Moreover, some international studies support these study findings and report that profitability influences the firm's green investment practices. For example, amongst others research by Brammer and Pavelin (2006), Al-Tuwaijri, Christensen, and Hughes (2004), Antonietti and Marzucchi (2013) and Zhu et al. (2008). However, some studies have demonstrated that profitability does not influence green investment practices, thereby conflicting with these study results. For example, amongst others, studies by Wagner et al. (2002), Telle (2006) and Wayhan, Kirche, and Khumawala (2002). The next section presents

the drivers of profitability as a factor, which spurs green investment activities in JSE listed companies.

Drivers of Profitability as a Factor That Support Corporate Green Investment Initiatives in JSE Listed Firms

Table 4 illustrates common motivators of profitability as a variable, which spur corporate green investment initiatives in JSE listed companies.

As from table 4, important drivers of profitability as a factor that spur corporate green initiatives in JSE listed firms are, efficient employment of energy (4 firms supported this driver), zero carbon schemes produce financial benefits (3 firms supported this driver), sustainable green business opportunities are generated (3 firms supported this driver), environmental and energy risks are lessened and controlled (3 firms supported this driver), resources are effectively allocated (3 firms supported this driver) and green investments improve firm competitiveness (3 firms supported this driver). Overall, the findings presented in table 4 generally outline that JSE listed companies are turning green programmes into profit generating business ventures. Thus, profitability has become a stimulator on why JSE listed companies integrate green investment practices.

FINDINGS ON JSE LISTED FIRMS' PERCEPTIONS IN RELATION TO PROFITABILITY AS A FACTOR THAT SPURS CORPORATE GREEN INVESTMENT PRACTICES

This section presents 10 verbatims of selected JSE listed companies under study. The verbatims are illustrated in relation to the studied variable, namely, profitability. The verbatims were extracted from the companies' 2012 sustainability reports and/or integrated annual reports using a simple random sampling method as all the 100 CDP companies integrate green practices. However, it must be emphasised that consideration of a company's verbatim in this study is based on what the company management declares about the variable as a driver or non-driver of their green initiative.

COMPANY VIEWS REGARDING PROFITABILITY AS A FACTOR, WHICH PROMOTES GREEN INVESTMENT ACTIVITIES IN JSE LISTED COMPANIES

We recognise the substantial opportunities for our clients and our various business's activities in areas such as cleaner and renewable

TABLE 4 Drivers of Profitability as a factor Which Support Corporate Green Investment Activities in JSE Listed Firms

Summarised drivers of profitability	(1)
Zero carbon schemes generate financial gains.	3
Sustainable green business opportunities are created.	3
Carbon management investments encourage firm growth when the economic environment gives way.	1
Green investments manage climate related risks in core business operations.	1
Environmental investments make use of natural environment elements to improve green building performance which lowers energy related costs.	1
Energy management practices lessen costs.	1
Co-generation projects of energy minimise costs.	1
Efficient use of energy reduces overhead costs.	4
Green investments improve firm overall productivity.	1
Carbon emissions control investments enhance firm competitive advantages.	3
Manufacturing machinery and procedures which are environmentally friendly maximise energy savings.	1
Green investment and divestment decisions promote efficient allocation of financial and other important resources.	3
Smart metering schemes save energy and ultimately lessen costs.	2
Energy efficiency interventions maximise returns.	1
Continual employment of green technologies supports efficient production.	1
The firm considers that its share price is also deter. by green metrics available.	2
Security in energy provision is enhanced by green energy integration.	1
Sustainability operations generate environmental benefits.	1
Energy and environmental risks are assessed and controlled.	3
Prom. company marketability results from adopted green designs and green policies.	1
By-products from processing sugar cane generate green energy which promotes business prospects and lessens energy associated costs.	1
Environmental tax and connected fines for green non-compliance are regularly monitored in the business risk register.	1

Continued on the next page

energy sources, energy efficiency and responsible lending and investing. [Investec 2012, 5]

The above verbatim indicates that that practices associated with green energy adoption, energy saving and management mechanisms plus green

TABLE 4 *Continued from the previous page*

Summarised drivers of profitability	(1)
Green investment indicates responsible lending and investing approaches which avoid crime and possible high costs associated with litigation.	1
Operational efficiency on carbon issues is undertaken to minimise oper. costs.	1
Investing in properties by focusing on energy efficiency and green star ratings to improve marketability and financial gains.	1
Have green product life cycle proced. which reuse waste that lower buying costs.	2
Products attributes and manufacturing processes are designed to reduce energy costs.	1
Recycle used products which increase profits as it is cheaper than employing virgin materials.	1
Offer green bonds and carbon financing mechanisms which develop green markets and favourable long-lasting sustained performance of the firm.	2
Environmental Key Performance Indicators (KPIs) have been designed and adopted to assists monitoring energy use which improves finance gains.	2
Environmental practices protect the firm's brand and avoid green fines and penalties.	1
Incorporated sustainability data and ratings into the electronic tools used daily by listed equity analyst portfolio managers reduce business risks.	1
Green product range increases sales and therefore, revenue.	1
Inflationary pressures cause the firm to integrate energy saving technologies thereby lowering energy costs.	1
Environmental impacts are connected with the portfolio of investment properties hence possible green risks are mitigated.	1
Climate change is viewed as systemic risk so green goals are monitored regularly.	2
Responsible control of the environmental footprint generates sound business sense and high firm competence.	1
Promoted green supply chain innovation lowers carbon related costs.	3

NOTES Column headings are as follows: (1) number of companies which supported the driver.

financing practices and decisions create business prospects that can generate financial rewards to companies. In this case, profitability influences JSE listed companies to integrate green programmes, which support outcomes in the quantitative phase.

[...] create economic opportunities by stimulating demand for green building products and services. [Emira Property Fund 2012, 55]

The statement by Emira Property Fund implies that green initiatives in the form of green building commodities promote development of new business economic prospects. As such, there are economic first mover benefits linked with corporate greening policy.

At each of our operations and owned plantations, legal compliance (emissions, solid waste, effluent) and other specific company targets are monitored and appropriate action is taken to improve or mitigate identified environmental risks. [Sappi 2012, 83]

The above statement indicates that compliance may avert environmental risks which may also affect corporate profitability.

Through financing innovation we can turn climate challenges into market opportunities. [Standard Bank 2012, 82]

The company suggest that climate problems have also resulted in development of green financing developments which create market prospects that companies can take advantage of. In this regard, there are financial benefits associated with introducing financing mechanisms that support climate change mitigating initiatives at corporate level.

One of the financial risks associated with greenhouse gas (GHG) emissions is the introduction of a carbon tax in South Africa, which could result in increased cost for electricity and transportation, as well as higher operational costs related to GHG emission monitoring, reporting and accounting [...] We have established a four year history of our carbon footprint between 2009 and December 2012. We conduct an annual assessment of our carbon emissions with aim of improving our carbon intensity and reducing our absolute emissions. We also continue to participate in the carbon disclosure project [...] [Royal Bafokeng Platinum 2012, 71]

This above verbatim simply elaborates the view that carbon emission reduction approaches improve firm performance through minimisation of green financial risks.

Our clients can support environmental causes through the Green Affinity simply by choosing to use Nedbank Green Affinity banking, investment or insurance products. [Nedbank 2012, 62]

The statement above indicates that green innovation has resulted in a growth of green financial instruments. These green financial tools are, green bonds, green financing decisions, and green insurance products

which have been specifically designed to support practices which mitigate climate change.

Developing cost-efficient, high-performance and environmentally sound solutions is a cornerstone of our business strategy. [Mondi Group 2012, 4]

This statement reveals that JSE listed firms have incorporated environmental practices in their company policy. As such, environmentally compatible activities empower the company to experience costs reductions and gain competitive advantages through superior performance. The view establishes a connection between profitability and green investment practices.

Eco-wise branded product sales increased by an estimated 30% for the reporting period. In addition Builders Warehouse together with Ellies sold 225,000 LEDs and 22,000 water efficient showerheads through their 'Green Stand Partnership.' [Massmart 2012, 16]

The development of green products results in heightening sales which inevitably generates high profits for the company. Furthermore, green growth creates new markets to support the introduction of new green development mechanism products.

During the year Hyprop's Green Design and Environmental Sustainability Strategy was introduced and implementation began. The strategy outlines the opportunities, expected ease of implementation of each objective and resultant benefits. Opportunities include: Lower operating costs: related to energy, water and waste consumption [...] [Hyprop Investments Ltd 2012, 52]

The above verbatim illustrates that the firm's greening activities lead to minimised operating expenses through practices such as, energy efficiency, water efficiency and waste management (reuse, reduce, recycle). Therefore, the statement supports the quantitative outcome that profitability determines corporate green investment practices.

[...] energy already makes up just over 21% of our cost base amid a global trend of rising energy prices and shortages of supply. Under this strategy, we are targeting a 10% energy saving over the baseline by 2016 – subject to capital expenditure restrictions. To support our achievement of this target, all new mine developments must now meet a minimum requirement of at least 20% renewable energy use. [Gold Fields 2012, 86]

The statement indicates that green energy integration assists the company to support energy saving targets thereby creating opportunities that lower energy costs. Thus, green energy adoption leads to reduced energy expenses.

Overall Discussion

This section endeavours to substantiate corporate green investment benefits for both companies and the research community. Accordingly, the quantitative results phase of the research demonstrates that profitability influence green investment practices in JSE listed firms (see table 2 and its evaluation). Phi and Cramer's V test further satisfy this assertion by generating a positive direct relationship between profitability and green investment practices in JSE listed firms (see table 3). In this integration stage, the quantitative findings on profitability concur with results in the qualitative stage. For example, the study produced numerous drivers of profitability as a factor which supports green investment activities in JSE listed firms (see table 4). These motivators of corporate profitability strengthen the outcomes in the quantitative phase. In addition, the fifth section on company view regarding profitability as a factor which promotes green investment activities in JSE listed firms also support the drivers of profitability (see table 4) and the quantitative findings. Therefore, the results are important to encourage companies to identify competitive benefits through integrating green investment activities. Thus, there are some corporate green investment practices which have the potential to generate spin-off advantages to other components of the business operations. For example, energy efficiency, waste management and cleaner production are possible firm green activities which are beneficial in addition to producing reduced cost implications. In this regard, the findings of the association involving corporate green investment practices and profitability are important given the absence of adequate literature in the field. Hence, further study is required by implementing the same research using companies of another country (since the results of this study reflect the specifics of South Africa), in addition to undertaking multi-study explorations in which firms from various countries can be analysed and then later compared at the same time is important.

Conclusion

In light of global corporate reluctance and lack of interest regarding stimulation for green investment efforts, this study undertook a multiple case

study of 100 South African CDP companies on the Johannesburg Stock Exchange (JSE) to investigate the association between profitability and green investment practices. Thus the paper is necessary to outline a practical mechanism which adds towards subduing the traditional perception which explains that green investment activities generate financial losses to the company. Therefore, using Chi-square tests the findings indicated that profitability influences green investment practices in JSE listed firms. Moreover, a positive direct correlation between profitability and green investment practices in JSE listed firms was discovered (0.180). The study also managed to outline the drivers of profitability as a factor which spurs corporate green investment practices. Corporate perceptions from selected JSE listed firms regarding profitability also appear to support the green investment initiative. As such, an analysis of the results show that companies that adopts green policies and programmes do not necessarily experience reduced firm performance. Thus, integrating green investment initiatives generates dual benefits – reducing greenhouse gas emissions and improving corporate performance.

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The Fragility of Turkish Economy from the Perspective of Oil Dependency

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In an emerging economy, energy is a crucial input. Turkey as an oil dependent country, the volatility of oil price might affect more than thought. In this study, the impact of oil price changes in Turkish macroeconomy has been examined. A VAR model is built by using quarterly data from the first quarter of 2003 to the first quarter of 2013. Variables used in the model are Brent oil price, gross fixed capital formation, interest rate, US GDP and inflation. We believe that the analysis has demonstrated the fragility of Turkish economy to oil price volatility with its significant results in the relationship between oil price and main macroeconomic indicators. This study also shows the incredible need of sustainable energy policies to make a country's economy stable.

Key Words: oil price shocks, oil dependency, Turkey, macroeconomy, vector auto regressive model, gross fixed capital formation, inflation, interest rate

JEL Classification: O13, Q13, N75, P48, Q47

Introduction

The relationship between oil prices and macroeconomic performance has long been centre of attention in the literature. The literature has focused on different aspects of oil price and macroeconomy relationship. Early researches, inspired by the oil price shocks of the 1970s and 1980s and subsequent recession, concentrated mainly on developing theoretical models aiming at measuring the effects of higher energy prices on macroeconomic variables such as GDP, inflation, or productivity. Pierce and Enzler (1974), Mork and Hall (1980), and Hamilton (1983) investigated the negative relationship between oil price increases and the macroeconomic indicators. Nevertheless, this approach was questioned in mid 1980s when the sharp drop in energy prices did not lead to an improvement in economic activity. Accordingly, Mork (1989) argued for the

presence of asymmetry and showed that while oil price increases restrain real GDP growth, oil price falls do not cause any statistically significant effect. Lee, Ni, and Ratti (1995) provided evidence on the existence of asymmetry and showed that the effects of oil price increases were considerably higher in an environment of stable oil prices compared to an environment of volatile oil prices. Kumar (2005) support the validity of asymmetric impact of oil price changes on economic activities. More recently Zhang (2008) found that a rising trend in oil prices had more effect on growth than the impact of positive oil price shocks in Japan.

Theoretical studies have also examined the transmission channels of oil price changes to macroeconomy. Though providing significant insight about the channels, they did not present clear evidence whether oil prices have substantial impact on the macroeconomy. Several channels have been identified in the literature, namely supply side, wealth transfer, inflation, real balance and sector adjustment (Brown and Yucel 2002).

The impact of oil price changes varies depending on countries stage of development, composition of its economy and institutional structure. In the oil-importing countries, oil price shocks tend to have significant effects on macroeconomic variables. In these countries, increase in oil prices not only causes a rise in inflation and input costs, but also leads to a decrease on the demand of non-oil products, reflecting the lower purchasing power. Manufacturing and transportation is especially affected by the rise in costs. As weaker economic growth decreases labour demand, energy shocks could also have a negative effect on employment levels, particularly in the short term. On the fiscal side, government expenditures rise on the one hand and tax revenues drop on the other, leading to an increase in the budget deficit and interest rates. All in all, oil-importing small open economy countries are sensitive to the oil price shocks. Hence, the examination of the impact of oil price shocks on the macroeconomic variables is important in oil dependent, middle-income countries like Turkey. Given Turkey's high dependence on oil as main source of energy, its inadequate oil reserves and most of production process related to oil, one would expect that its economy would be affected through various channels. This study aims to analyse response of macroeconomic variables to oil price shocks in Turkey.

The average crude oil price (Brent) reached \$108.66 in 2013 when the oil consumption of Turkey was 719 thousand barrels per day (figure 1 and figure 2). Being known that there has been crisis in the history related to the shortage of oil supply and the oil price shocks, the rising trend



FIGURE 1 Brent Oil Price (US Dollars; adapted from British Petroleum 2014)

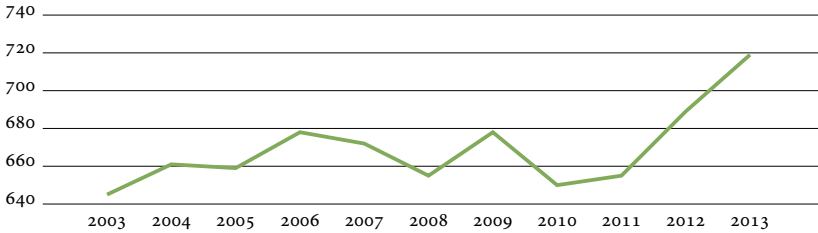


FIGURE 2 Oil Consumption of Turkey (thousand bbl/day; based on data from EIA, <http://www.eia.gov>)

of oil prices in the recent years has become centre of attention. As an oil importer country, Turkey has been expected to be sensitive to the changes in oil prices. This research aims to answer the vital question whether the macroeconomic indicators are significantly affected by the volatility of oil prices.

The remainder of this paper is organized as follows. The second section discusses the empirical evidence from the literature. The third section presents the data empirical methodology. The fourth section reveals the empirical results and the fifth section concludes.

Literature Review

Burbidge and Harrison (1984) studied the impact of oil prices on economic activity of US, Japan, the Federal Republic of Germany, the United Kingdom and Canada. The authors used monthly data considering the period between January 1961 and June 1982 by applying vector autoregression (VAR) model. The results showed that there is a uni-directional causality running from oil price shocks to macroeconomic variables which covers consumer prices index, total industrial production, short-term interest rate, currency and demand deposit and average hourly earnings in manufacturing although the results of some countries are unclear. Ferderer (1996) investigated the relationship between oil price volatility

and macroeconomy in US for the period between 1970 and 1990 by using VAR model. The author measured oil price volatility by using monthly standard deviations of daily oil prices and found that oil price volatility has a negative impact on US output. DePratto, Resende, and Maier (2009) questioned how changes in oil prices affect the macroeconomy in Canada, United Kingdom and the United States covering the period from 1971 to 2008. According to the results of their study, while higher oil prices have lower impact on supply side, they decrease the GDP level permanently. Tang, Libo, and Zhang (2010) investigated the effects of oil price shocks on China's macroeconomy by using Structural VAR model for the period between June 1998 and August 2008. Their results showed that while an increase in oil price has negative impact on output and investment, it has a positive impact on both inflation and interest rate. Ng (2012) investigated the relationship between oil price volatility and macroeconomy relationship in Singapore by using quarterly data from the second quarter of 1983 to the second quarter of 2009. According to the VECM results, a 1% increase in oil price adversely affects the investments (GFC) and decreases the GDP with 0.45% in the long-run. Besides, in the short-run the oil price volatility has a negative impact on investment, GDP and inflation. Ju et al. (2014) studied the impact of oil price shocks on macroeconomy of China by using Hilbert-Huang transform (HHT) and event study methodologies. Data covers the monthly period from 1983 to 2012. The results showed that while oil price shock has negative impact on GDP and exchange rate, it affects CPI positively in China. Katircioglu et al. (2015) investigated the relationship between oil price changes and the macroeconomic variables of gross domestic product (GDP), consumer price index (CPI) and unemployment for twenty-six OECD countries. The sample consists of the period between 1980 and 2011. By using Durbin-H panel cointegration tests, the authors revealed that oil price changes have statistical and negative effect on GDP, CPI and unemployment in many of the OECD countries.

The impact of oil price shocks on the economic activity of oil-exporting countries is rather different. For example, Iwayemi and Fowowe (2011) analysed the effects of oil price shocks on the macroeconomy of a developing oil-exporter country, Nigeria. The authors used Granger-causality, impulse response and variance decomposition methods by using the quarterly data from 1985:Q1 to 2007:Q4. Real GDP, government expenditure, inflation, real exchange rate and net exports were used as macroeconomic variables. Their results conclude that oil price shocks do not have

a major effect on the macroeconomic variables of Nigeria. While there is no causality running from oil shocks to output, government expenditure, inflation and real exchange rate, there is a uni-directional causality running from oil shocks to net-exports. Demachi (2012) studied the impact of oil price change and volatility on the macroeconomic variables of Nigeria. The author used Structural Vector Auto Regression (SVAR) model for the monthly period between January 1970 and May 2011. Macroeconomic variables that were taken into consideration were Nigeria's exchange rate, money supply, consumer price index and the policy interest rate. According to the results, both the oil price changes and price volatility is affecting exchange rate of Nigeria and as oil price increases, money supply increases.

In the literature there are also studies that investigate the asymmetric relationship between oil price shocks and macroeconomic variables. For example, Gilbert and Mork (1986) was the first that provide the asymmetry of oil price shocks on macroeconomy. The author investigated the impact of oil price changes on macroeconomy of seven OECD countries; the United States, Canada, Japan, Germany, France, the United Kingdom covering the period between 1967:3 and 1992:4. The results showed that, there is a negative correlation between oil price increases and GDP growth beside the presence of asymmetry. Their results vary from country to country. For example, while for the United States, both the increase and the decrease in oil prices affect the business cycle, an increase in oil prices negatively affects the economy in Japan. Furthermore, the economy of Norway bloom up with oil price increases and slows down with oil price decreases. Huang, Hwang, and Peng (2005) analysed the effect of oil price shocks on industrial production and real stock returns for United States, Canada and Japan covering the monthly period between January 1970 and September 2002. The authors used multivariate threshold model and found that the oil price changes are better to explain the macroeconomic variables compared to oil price volatility whereas oil price volatility are better to explain stock returns compared to a change in industrial output. Kumar (2005) investigated the impacts of oil price shocks on macroeconomy of India covering the period between first quarter of 1975 and third quarter of 2004 using VAR model. According to the results, there is a Granger causality running from oil prices to macroeconomic activities and oil price shocks affect industrial production growth negatively, which supports the presence of asymmetric impact hypothesis.

TABLE 1 Cointegration Test Results

Source	SS	df	MS	No. of obs.	41	
Model	899.641	4	224.9103	$F(4, 36)$	1.3800	
Residual	5871.43	36	163.0953	Prob > F	0.2606	
Total	6771.07	40	169.2768	R^2	0.1329	
				Adj. R^2	0.0365	
				Root MSE	12.771	

Variable	Coef.	Std. err.	t	$P > t$	95% conf. int.	
<i>usgdp</i>	2.94680	3.74590	0.79	0.437	-4.6502	10.5438
<i>interestrate</i>	0.10701	0.19224	0.56	0.581	-0.2828	0.4969
<i>inflation</i>	0.42905	2.86455	0.15	0.882	-5.3805	6.2386
<i>gfcf</i>	0.50015	0.44821	1.12	0.272	-0.4089	1.4092
<i>_cons</i>	0.97091	6.57348	0.15	0.883	-12.3607	14.3026

NOTES MacKinnon approximate p -value for $Z(t) = 0.000$. Test statistics = -5.559 . Dickey-Fuller test for unit root, 40 observations. Critical values for $Z(t)$: -3.648 (1%), -2.958 (5%), -2.612 (10%).

Data and Methodology

The main questions of this research have structured the hypothesis of research. The null hypothesis is that oil price changes have no impact on macroeconomic indicators such as growth, inflation or interest rate. The alternate hypothesis suggests the rejection of null hypothesis where it seeks for a relation between macroeconomic indicators and oil price.

A quarterly five-variable vector autoregression model (or simply; VAR) is used in this study. Taking into account that simple vector autoregression models provide better results than a cointegrated VAR in the short run (Naka and Tufte 1997; Engle and Yoo 1987; Clements and Hendry 1995; Hoffman and Rasche 1996), the suitability of the model was tested. Engle and Granger (1987) suggested a two-step process to test for cointegration (an OLS regression and a unit root test), the EG-ADF test, which is also carried out in this study. No cointegrating relationships was observed; so unrestricted VAR is found appropriate (see table 1).

The variables selected for the model are real gross fixed capital, consumer price index (CPI), interest rate, US real GDP, Brent crude oil price.

Econometrics model specifications are as follows:

$$\begin{aligned}
 gfcf &= f(\text{brenttl}, \text{interestrate}, \text{inflation}, \text{usgdp}) \\
 &= \beta_0 + \beta_1 \text{inflation} + \beta_2 \text{interestrate} + \beta_3 \text{brenttl}
 \end{aligned}$$

$$+ \beta_4 usgdp + \varepsilon, \quad (1)$$

where *gfcf* is Real Gross Fixed Capital Formation (First Differenced and Seasonally Adjusted), *interestrate* in Interest Rate (Seasonally Adjusted), *inflation* is Consumer Price Index (First Differenced and Seasonally Adjusted), *brenttl* is Brent Crude Oil Price (First Differenced and Seasonally Adjusted), and *usgdp* is US GDP.

The data mentioned above have been seasonally adjusted by computing a centred moving average. According to Bernanke et al. (1997), Hamilton and Herrera (2004) not only the oil price changes, but also other macroeconomic variables such as money supply, global developments affect an individual country's economy. For this reason, we put US GDP as a control variable to eliminate its affects. All variables are converted into Turkish Liras and data contains information from 2003 first quarter to 2013 first quarter. The starting date choice is motivated by the main incidents in the World. In 2003, the invasion of Iraq occurred, and the production of oil decreased due to the instability of the country. Therefore, the crude oil price increased sharply. In the analyzed period there are some other shocks originating from the global economic crises of 2008 that deepened after the corruption of Lehman Brothers.

Different databases are mined while building the model. Hence, Brent oil prices are taken from Bloomberg, where real gross fixed capital formation CPI, interest rate and inflation are taken from Datastream. Moreover, real US GDP is taken from St. Louis FED database.

Before studying the impacts of oil price changes on macroeconomic indicators, the stochastic properties of the data considered in the model was examined by analyzing their order of integration on the basis of a series of unit root. The stationarity properties of the time series data were examined yet purpose of the orders of integration in the all series is a crucial part of the research. Former studies have proved that mostly time series data are non-stationary at first level but become integrated (stationary) of order 1 (Engle and Granger 1987). A stationary time series practice then is one which has a constant first and second moments and whose probability distribution is stable over time. Stationarity in the data series needs to be ascertained because the estimation technique for the analysis is the Vector Autoregressive (VAR) model, which accepts all the variables in the system are stationary. Therefore, to evade false results and to guarantee that the variables fit into the estimation techniques, as in Etonam (2015), this study will conduct unit root test generally used in

TABLE 2 Unit Root Test

Variable	$Z(t)$	p^*
<i>brenttl</i> (level)	0.9361	-0.220
<i>inflation</i> (level)	0.9990	2.415
<i>gfcf</i> (level)	0.4008	-1.759
<i>interestrate</i> (level)	0.0002	-4.563
<i>usgdp</i> (level)	0.0076	-3.517
<i>brenttl</i> (first differenced)	0.0000	-5.053
<i>inflation</i> (first differenced)	0.0000	-5.690
<i>gfcf</i> (first differenced)	0.0277	-3.085

NOTES * MacKinnon approximate p -value for $Z(t)$. Dickey-Fuller test for unit root, 40 observations. Critical values for $Z(t)$: -3.648 (1%), -2.958 (5%), -2.612 (10%).

TABLE 3 Phillips Perron Test

Variable	$Z(\rho)$	$Z(t)$	p^*
<i>brenttl</i> (level)	-0.385	-0.203	0.9381
<i>inflation</i> (level)	0.594	2.613	0.9991
<i>gfcf</i> (level)	-4.229	-1.817	0.3723
<i>interestrate</i> (level)	-6.853	-4.271	0.0005
<i>usgdp</i> (level)	-18.776	-3.476	0.0086
<i>brenttl</i> (first differenced)	-26.347	-5.016	0.0000
<i>inflation</i> (first differenced)	-32.240	-5.677	0.0000
<i>gfcf</i> (first differenced)	-15.213	-3.016	0.0334

NOTES * MacKinnon approximate p -value for $Z(t)$. Phillips-Perron test for unit root; 40 observations; 3 Newey-West lags. Critical values for $Z(\rho)$: -18.220 (1%), -12.980 (5%), -10.500 (10%). Critical values for $Z(t)$: -3.648 (1%), -2.958 (5%), -2.612 (10%).

the VAR model to examine stationary properties in time series data. The Augmented Dickey-Fuller (ADF) test is used while investigating the stationarity of the variables. The results show that all of the variables follow a trend as evidenced by the previous literature except interest rate and US GDP. The first differences of the variables are taken to eliminate the trend at 5% confidence level as appear in table 2. For robust purposes, one can find Phillips-Perron test results in table 3.

Because of the probability of missing critical information with too low lag order and growing estimation errors in a prediction with too high order (p), it is generally required in an autoregression to choose

TABLE 4 Lag Estimation Results

Lag	LL	LR	df	p	FPE	AIC	HQIC	SBIC
0	-465.277				75436.7	25.4204	25.4971*	25.6381*
1	-435.907	58.739	25	0.000	60429.4*	25.1842	25.6447	26.4903
2	-414.030	43.754	25	0.012	77354.9	25.3530	26.1972	27.7476
3	-385.827	56.407	25	0.000	80417.1	25.1798	26.4078	28.6629
4	-355.818	60.017*	25	0.000	97082.7	24.9091*	26.5208	29.4806

lag order that offsets the trade. The study uses five different information criteria namely; Likelihood Ratio (LR), Final Predict Error (FPE), Akaike Information Criterion (AIC), Schwarz Information Criterion (SIC), and Hannan-Quinn information criterion (HQIC) to select the ideal lag length. To determine the optimal lag length from the five criteria, an arbitrary choice of a maximum lag was chosen. As a result, 4 lags have been used, following the Akaike Information Criterion as in Bernanke et al. (1997), Lutkepohl (1982) which can be examined in table 4.

Results

In this section, the relation between the Brent oil price changes and economic activity is mainly discussed. In this multivariate model, it is essential to understand the direct impact of a variable as well as the indirect impact through third variables. So firstly Granger causality test was run. In fact, results show that there is significantly high correlation between all variables at least in one direction and the null hypothesis was rejected that the variables do not granger cause one another (see table 5). As could be seen from the impulse response function in figure 1, gross fixed capital formation and interest rate response a shock both in Brent oil price and USGDP; however, inflation does not response any of them.

For oil-importing countries like Turkey, one would expect that growth will suffer from the rise in crude oil prices. The results seem to be consistent with expectations. In the short run, even if one can observe a slightly positive movement, after one lag, it turns to negative and the affect dies by the 5th lag. As most of the production processes use oil as an input, an upward trend in oil prices cause goods to be more costly. Moreover, an increase in oil prices may result a decline in non-oil products due to lower purchasing power.

On the other hand, the insignificant correlation between crude oil price

TABLE 5 Granger Causality Wald Tests

Equation	Excluded	χ^2	df	Prob. > χ^2
<i>gfcf</i>	<i>inflation</i>	12.963	4	0.011
	<i>interestrates</i>	30.958	4	0.000
	<i>brenttl</i>	26.320	4	0.000
	<i>usgdp</i>	27.463	4	0.000
	<i>all</i>	91.260	16	0.000
<i>inflation</i>	<i>gfcf</i>	11.134	4	0.025
	<i>interestrates</i>	4.530	4	0.339
	<i>brenttl</i>	14.403	4	0.006
	<i>usgdp</i>	14.396	4	0.006
	<i>all</i>	41.054	16	0.001
<i>interestrates</i>	<i>gfcf</i>	5.900	4	0.207
	<i>inflation</i>	7.403	4	0.116
	<i>brenttl</i>	12.403	4	0.015
	<i>usgdp</i>	17.587	4	0.001
	<i>all</i>	44.521	16	0.000
<i>brenttl</i>	<i>gfcf</i>	3.511	4	0.476
	<i>inflation</i>	5.467	4	0.243
	<i>interestrates</i>	1.815	4	0.770
	<i>usgdp</i>	3.403	4	0.493
	<i>all</i>	32.895	16	0.008
<i>usgdp</i>	<i>gfcf</i>	3.685	4	0.450
	<i>inflation</i>	21.102	4	0.000
	<i>interestrates</i>	3.099	4	0.541
	<i>brenttl</i>	14.965	4	0.005
	<i>all</i>	35.105	16	0.004

and inflation could be explained with the efficient monetary policies. The Central Bank of Turkey (CBRT) put inflation target during those years and has successfully implied. CBRT has different means to reach their target, where interest rate is one of them.

When the Brent oil price goes upwards, an increase in interest rate may have balanced the expected negative impact of crude oil price against inflation. Disinflationary policies might have tempered the negative effect of high-energy prices on the inflation. Hence, in the impulse response

TABLE 6 Tests for Stability Condition

Eigenvalue	Modulus
$0.3534563 + 0.5782148i$	0.67769
$0.3534563 - 0.5782148i$	0.67769
$0.6338675 + 0.1804856i$	0.65906
$0.6338675 - 0.1804856i$	0.65906
$0.0859971 + 0.6187699i$	0.62472
$0.0859971 - 0.6187699i$	0.62472
$-0.3098156 + 0.3781089i$	0.48883
$-0.3098156 - 0.3781089i$	0.48883
-0.3688598	0.36886
-0.1025409	0.10254

function graph, shocks in oil price cause an increase in interest rate. This indicates that CBRT has successfully used interest rate as a means of their disinflationary policies.

In the model, USGDP was put as control variable. Turkish macroeconomy positively responds to the global developments, when there is a rise in US GDP, the positive impact stays till the fourth lag before it dies afterwards. However, interest rate policies cannot be interpreted by the global developments, as the responses can be both positive and negative.

The model can also be tested if it is stable by checking all eigenvalues of modulus less than 1 (Lütkepohl 2006). A stable process is one that will not diverge to infinity. An important fact is that stability implies stationarity thus it is sufficient to test for stability to ensure that a VAR process is both stable and stationary. The stability of the equation was so tested with Eigen value and concluded that all the Eigen values stand inside the unit circle (see table 6). Hence, VAR results satisfied the stability and stationarity condition.

Conclusion

In 2013, the average crude oil price, precisely Brent oil price reached \$108.66 (British Petroleum 2014) and the oil consumption of Turkey was 719 thousand barrels per day (Energy Information Administration 2014). The average oil production of Turkey was 58.1 (Energy Information Administration 2014) in the same year, which shows the huge gap between production and consumption.

The aim of this study is to demonstrate the possible risks of a country's dependence on an energy source. In the recent environment, where

alternative means of energy besides fossil fuels is the centre of attention, macroeconomic indicators was seen to be responsive to the volatility of fossil fuel price shocks. In this sense, the impact of oil price changes in Turkish macroeconomy has been examined by using seasonally Brent oil price, gross domestic product (GDP), gross fixed capital formation, interest rate, US GDP and inflation based upon the data set which covers the quarterly data from the first quarter of 2003 to the first quarter of 2013.

The impacts of oil price increases on the Turkish economy are analyzed by using a VAR model. Based on the results of our analysis, a meaningful relationship of oil prices with gross fixed capital formation and interest rate is examined. However, it is observed that inflation does not response to a rise in oil prices. This could be explained by mitigating effect of disinflationary polices implemented during the analysed period.

The results of our study underline the fragility of Turkish economy to the oil price increases. Reducing oil dependency could increase the resilience of Turkish economy. Like in the portfolios in stock markets, for the economy it could be useful to diversify the energy resources to reduce the negative impacts. Exploring these sources and their potential impacts to the Turkish economy could be the subject of further studies.

The volatility of oil price has reached another level at the time this study is being conducted. Hence, another further research question was raised due to the downward movement of the oil prices. The negative impact of the oil price upward movement was observed in this study; however, possible existence of an asymmetry is still an unanswered question. Anybody who is interested in that area would contribute to the literature by investigating if a downward trend in oil prices has a positive impact on macroeconomic indicators and if the magnitude is similar.

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Corporate Financial Structure of Nonfinancial Quoted Companies in Nigeria

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Corporate financing decision of firms has remained a debatable issue in both corporate and academic discussions. The present study aims to investigate the factors responsible for the financing decision of firms in Nigeria. To achieve this, 63 nonfinancial firms listed on the Nigerian stock exchange were selected based on data availability for the period of 2001 to 2010. Financial firms were excluded because of their similar regulatory framework and in order to ease the comparability of results. While most studies focused on debt-ratio as a measure of leverage, the present study uses the ratio of total debt and total assets. The empirical findings from the static panel regression analysis confirms that Nigerian firms tends toward internal financing through retained earnings, equity and other short term funds, against long term financing majorly through debts and other long term loans. One factor that could be said to account for this decision is the ill developed bond market in the country as well as the accessibility of firms to long term finances from the existing sources that is marred with high interest rates and huge collaterals.

Key Words: corporate finance, leverage, profitability

JEL Classification: G32, L25

Introduction

Modern corporate finance literature have provided answers to the factors responsible for the emergence of firms choice of capital structure as well as factors considered when changing their pattern of financing. Changes in corporate finance pattern by firms result in adjustments in the position of existing fund providers, equity and debt and thus changes in the reactions of these capital holders. Accordingly, company financing decisions involve a wide range of policy issues. At the macro level, they have implications for capital market development, stock and securities price determination, interest rate determination and regulation and at the micro

level, they have implications for corporate governance, organizational development and structure (Green, Murinde, and Moore, 2012; Isola, 2012). In addition, the choice of pattern of capital largely affects the sustainability of financial flows into countries, most especially developing countries, as these funds flow depends heavily on the health and viability of the corporate sector.

Vast amount of literature that describe and attempt to explain observed capital structure choices are carried out on firms in developed countries. However, in developing countries capital structure of firms may be different from what is obtained in developed countries for several reasons. According to Demircug-Kunt and Maksimovic (1999), four broad reasons exist why in developing countries capital structures of firms may differ. First, differences in the level of economic and financial market development in terms of per capita income, capital market development, sophistication of financial intermediaries and corporate ability to raise external funds. Second, difference in institution in terms of legal and corporate regulatory framework, pricing regulations and investors' protection. Third, smaller firm sizes observed in developing countries, and finally the differential tax treatment of debt and equity.

The framework for discussing firms' choice of capital structure in developing countries has been explained in empirical literature from two broad determinants, agency theory explanation and the tax system. From the agency theory view, it addresses the distinct conflicts of interests that arise between investors holding different classes of securities. The conflicts arise because holders of one class of investors (typically equity-holders) act as agents for other investors and take decisions that affect the value of the firm as a whole. As a result, these investors have an incentive to engage in opportunistic behaviour that increases their payoffs at the expense of other classes of investors (typically debt-holders) and the firm as a whole (managers and other stakeholders). The second important determinant of capital structure is the tax system. Since firms' financing choice affect their tax liabilities because the total amount of tax liability of their investors both personal and at corporate levels, differs according to the proportion of equity and debt securities. This differential treatment of investment returns induces investors' preferences for holding equity or debt securities and firms attempt to satisfy these preferences by optimally altering their capital structure (Demircug-Kunt and Maksimovic 1999)

Against this background, this study seeks to examine the corporate financial behaviour of quoted firms in Nigeria. The study by Isola (2012)

was conducted on textile firms in Nigeria using a balance sheet approach. Essentially, this study seeks to extend this work by considering all non-financial quoted firms in Nigeria. It investigates the gearing and leverage ratio of firms in the non-financial sector as a measure of financial risk and the factors that determine this ratio. The rest of the paper is structured as follow: the second section presents a review of theoretical literature while the third section presents empirical literature review. The fourth discusses the methodology and data issues as related to the study, while the fifth section presents the estimation results and discussions. The last section concludes the study.

Theoretical Review

The growth of the firm either through the expansion of existing plants or diversification into new areas involve implicit financing decision to raise the needed funds (Isola 2012). Koutsoyiannis (1982) classified financing sources into internal and external sources. However, three notable sources of funds are available to firms in financing their corporate activities namely, equity, debt and retained earnings. Theoretical arguments on the factors that determine the choice among these sources of fund dates back to the pioneer work of Modigliani and Miller (1958) often referred to as irrelevance proposition. The position of these scholars is that in the presence of some assumptions, firms' structure of capital does not affect the firms' market value. Among others, some of these assumptions include perfect capital market, no transaction costs, homogeneous expectation about future earnings by investors, and no corporate tax. However, a number of these assumptions were not applicable in reality and were relaxed in subsequent studies and the consequences discussed among which include the relevance of firms' capital structure to firms' value.

The social and private costs of an agent's action due to incomplete alignment of the agent's and owner's interests were brought to attention by the seminar contributions of Jensen and Meckling (1976) on agency costs. A significant fraction of the effort of researchers have since been devoted to models in which capital structure is determined by agency costs, that is, costs due to conflicts of interest among actors in the firm – managers, shareholders and debtholders – based on equity and debt issue. One of these conflicts is the shareholder-manager conflicts, which stems from the separation of ownership and control. Contrary to the shareholder's interest of firm value maximization, managers prefer to exert less effort

and have greater perquisite levels, such as luxuriant office and corporate jets, etc. (Jensen and Meckling 1976). In this case, increasing the managers' equity holdings will help to align the interests of shareholders and managers. On the other hand, keeping managers equity investment constant, increasing the debt level also helps to mitigate the loss of conflicts between shareholders and managers. Essentially, debt forces managers to pay out cash and consequently reduces the ability of managers to spend on perquisites.

Another form of agency conflict is the shareholder and debtholder conflict. The elementary phenomenon of this conflict is that the shareholders or their representatives make decision transferring wealth from bond holders to shareholders (Harris and Raviv 1990). Certainly, the bondholders being aware of the situations in which this wealth expropriation may occur, therefore, will demand a higher return on their bonds or debts. One way to minimize these conflicts is that firms with high growth opportunities should have lower leverage and use a greater amount of long-term debt than firms use in more mature industries (Niu 2008). The conflicts can also be mitigated by adjusting the properties of the debt contracts, for example, the adjustment can be done by including covenants such as adding limits on the dividends payment or setting restrictions on the disposition of assets as discussed by Smith and Warner (1979). Alternatively, debt can be secured by collateralization of tangible assets in the debt contracts that are thoroughly discussed in Stulz and Johnson (1985). The issue of convertible debt or debt with warrants can serve as another way of mitigating the conflicts as shown by Jensen and Meckling (1976) or Green (1984), because convertible debt will have lower agency costs than plain debt.

The Pecking-Order theory proposed by Myers and Majluf (1984) is based on the hypothesis that financing flows is hierarchical, and that firms prefer internal over external financing and debt over equity owing to the asymmetry of information possessed by the inside managers. The nature of information asymmetry in this case is that managers or insiders know more about the company's prospects, risks and values than the knowledge outside investors possess. Hence, as a result information asymmetry between insiders and investors, if firms need to finance the new projects through equity issuance, the equity may be under-priced by the market. Also, further to the assumption that managers acts to protect the interests of existing shareholders, the managers may as well forgo the positive net present value (NPV) project if it would require the issue of new equity,

since by this issuance, it would give much of the project's value to the new shareholders at the expense of the old (Myers and Majluf 1984).

Numerous empirical studies have been carried out to analyse the validity of each and all of the above theories, however no unique consensus exists among researchers as to which theory best explains the composition of firms' capital structure. This reason may be attributed to the fact that these theories differ in their emphasis and coverage. The next section presents a review of some of the empirical literature on the determinants of corporate capital structure.

Empirical Literature Review

This section reviews some empirical studies on the determinants of corporate financial structure. Many studies exist on corporate capital decisions, however few studies shed light on the common determinants of capital structure for different companies (Christian et al. 2012). On the relationship between these factors and companies' capital structure, Harris and Raviv (1990) summarized a number of empirical studies from US firms and suggested that 'leverage increases with fixed assets, non-debt tax shields, investment opportunities and firm size and it decreases with volatility, advertising expenditure, probability of bankruptcy, profitability and uniqueness of the product.' However, subsequent studies have updated our understanding about the determinants of capital structure.

Empirical studies yield no consistent conclusions on the direction of relationship between these determinants and capital structure, measured using leverage. Contrary to theoretical propositions, most empirical literature found that leverage is inversely related to profitability for firms in both developed and developing countries. Chang, Chean, and Liao (2014) examine the relative importance of various determinants of capital structure of Chinese listed firms from 1998 to 2009. Their findings suggest that profitability is the most prominent factor that determines capital structure of Chinese firms. Other factors such as asset growth, state influence and institutional environment also shape the capital structure decisions of these firms.

Serghiescu and Vaidean (2014) used the data of 20 Romanian firms for the period 2009–2011 and they also found that profitability, company size, tangibility of assets, liquidity and asset turnover determine capital structure of firms. Their empirical findings showed that profitability, asset tangibility and liquidity ratio negatively impact capital structure measured as total debt ratio of the firms. On the other hand, they showed

that company size and asset turnover affect firm leverage positively. The study submitted that profitability has the highest impact on choice of capital structure among all determinants.

Handoo and Sharma (2014) identified the most important determinants of capital structure of 870 listed Indian firms between 2001 and 2010. They found that factors such as profitability, growth, asset tangibility, size, cost of debt, tax rate and debt servicing capacity have significant impact on the leverage of the firm. In another study by Chang, Chean, and Liao (2008), they used all firms contained in the Annual Compustat Industrial files between 1988 and 2003. They found that growth is the most important determinant of capital structure choice. This is hierarchically followed by profitability, collateral value, volatility, non-debt tax shield and firm uniqueness.

Volatility or business risk is another important determinant of corporate financial structure that has been empirically evaluated (Huang and Song 2002; Halov, Heider, and John 2009). Volatility represents a firm's probability of financial distress and it is generally expected to have inverse relationship with leverage. Halov, Heider, and John (2009) studied a large unbalanced panel of all firms in the CRSP-Compustat database from 1971–2001. They found that volatility is an important factor in explaining capital structure choices of firms. They showed that the effects are over and above the traditional determinants of capital structure such as profitability, size, tangibility of assets and risk level.

Delcours (2007) investigated whether capital structure determinants in transitional economies support or differ from the traditional capital theory determinants of capital structure in western economies. Their findings support the traditional capital structure theories. However, they further showed that capital structure in transitional economies are explained by institutional factors like financial constraints in banking system, disparity in legal systems governing firms' operations, shareholders and bondholders rights protection, development of the equity and bond market and corporate governance. Joeveer (2013) studied the firm, country and macroeconomic determinants of capital structure in transition economies. He found that firm-specific factors are the main determinants of variations in leverage for listed and large unlisted companies.

Based on the foregoing discussions on the findings of recent empirical studies on the determinants of capital structure. We seek to examine the firm specific factors that determine the capital structure of listed firms in Nigeria. However, the constraint of data availability restricts the con-

TABLE 1 Summary of the Determinants of Capital Structure

Determinants	Definitions	Theoretical predicted signs	Major empirical studies result
Profitability (ROA)	Earnings before interest and tax divided by total assets	Positive/negative	Negative
Size (SIZE)	Natural logarithm of sales	Positive/negative	Positive
Tangibility (TANG)	Fixed assets divided by total assets	Positive	Positive
Growth Opportunities (GRWT)	Growth rate of sales	Negative	Negative
Volatility (VLTY)	Standard deviation of earnings before interest and tax	Positive/negative	Negative

NOTES Adapted from Huang and Song (2002).

sidered variables to profitability, firm's size, asset tangibility, growth opportunities and volatility. Table 1 presents the variables, their respective definitions as used in this study, the theoretical a priori predicted signs and the result from major empirical studies.

Methodology, Data and Sample

Understanding how companies finance their activities is predominantly a matter of measurement: to document the ways in which different companies at different times and in different institutional environments have financed their operations; and to identify possible implications of these financing patterns. Empirical studies on company financial pattern have documented some fundamental issues encountered when taking methodological decisions. According to Christopher, Murinde, and Suppakitjarak (2003), there are two interlinked strands. The first issue concerns the data source: whether to use the aggregate company sector statistics that form the basis of the national accounts, or individual company accounts data from company reports. On the other hand, the second question is conceptual and it relates to whether to use balance sheets (stocks of assets and liabilities) or flows of funds (sources and uses, or cash flows) to measure financing.

Another issue that arises from the second strand is on the whether to use market values or book values in calculating balance sheet data. In de-

cluding on answers to these questions, the central issues to consider are the purpose to which these data are to be used. The strengths and weaknesses of different methodological issues were extensively discussed by Christopher, Murinde, and Suppakitjarak (2003).

Despite several strengths and weaknesses of the different methodologies available in the corporate financial structure determinants literature, it is strongly believed that much and more can be learnt from company accounts and from their balance sheets, which inform our choice of using company account. Another motivation for our choice of company accounts is the availability of such data, as public quoted companies are statutorily required to publish their financial reports and accounts on annual basis.

In order to evaluate both theoretical and empirical submissions on the determinants of capital structure as reviewed in the previous section, regression analysis is adopted. The Ordinary Least Squares (OLS) regression technique is sought to evaluate how each of these factors determine corporate financing structure of firms in Nigeria. However, because of the cross-section and time dimension features of the data, the static panel regression analysis, which comprises the fixed and random effect model, in addition to the pooled OLS, is used for the estimation.

Following the empirical discussion in the previous section, the model to be estimated in panel econometric form could be specified as:

$$\begin{aligned} \text{LEV}_{(i,t)} = & \alpha + \beta_1 \text{ROA}_{(i,t)} + \beta_2 \text{SIZE}_{(i,t)} + \beta_3 \text{GRWT}_{(i,t)} \\ & + \beta_4 \text{VLT Y}_{(i,t)} + \beta_5 \text{TANG}_{(i,t)} + \varepsilon_{(i,t)}. \end{aligned} \quad (1)$$

The Dependent variable, leverage (LEV), is measured in this study following Welch (2011) as the ratio of total debt and total assets. ROA is defined as the ratio of firm's earnings before interest and tax divided by total assets; SIZE is the natural logarithm of sales; GRWT is defined and measured as growth rate of firm's sales; VLT Y is the standard deviation of earnings before interest and tax, and TANG is fixed assets divided by total assets. i represents the cross-section identifier (that is, the firm) and t represents the time identifier (that is the sample period 2001 to 2010) while ε is the error term.

The financial reports and accounts of firms in the financial sector (banks, insurance and equity trusts) have a striking different structure from firms from the nonfinancial sector (Chen 2004). Financial firms are characterized by similar regulatory framework, therefore in order to

TABLE 2 Descriptive Statistics

Variable	(1)	(2)	(3)	(4)	(6)	(6)
Leverage	0.449	0.021	0.520	1.160	4.170	34.100
ROA	0.058	0.024	0.604	10.400	-6.860	72.600
Growth	14.300	0.072	1.810	0.127	0.038	2.700
Size	0.133	0.018	0.447	3.37	-0.199	14.200
Volatility	0.138	0.017	0.416	3.020	8.960	100.000
Tangibility	0.744	0.026	0.665	0.893	7.690	88.500

NOTES Column headings are as follows: (1) mean, (2) standard error of the mean, (3) standard deviation, (4) coefficient of variation, (5) skewness, (6) kurtosis.

ease the comparability of results, only nonfinancial quoted firms are included in the sample. The basic source of our data is the annual financial report and accounts of each of nonfinancial firms quoted on the floor of the Nigerian Stock Exchange (NSE). 63 firms were included in the sample as a result the availability of the data needed for the empirical analysis. In addition, the sample period captured is between 2001 and 2010. This selection is based on only firms with complete information related to the variables of the specified model.

Results and Discussions

This section presents the estimated results based on the empirical model specified earlier as well as the discussion of the results. The section starts with the descriptive analysis of the variables presented in table 2. The table shows an average value of leverage at 45% which indicates that the movement of debt to asset ratio is around 0.45. In addition, there is a considerable variation in the leverage ratio with the coefficient of variation around 1.16 indicating a substantial variation. The ROA shows an average value of 5.8% with the coefficient of variation at 10.4. Other variables in the table also indicate considerably interesting descriptive results. The skewness and kurtosis used to measure the location and variability of the data set show that all the data are positively skewed except ROA and Size.

Table 3 shows the correlation matrix for the variables. The correlation matrix shows the correlation between each pair of the variables. The result shows a negative correlation between leverage and each of ROA, size and growth, although the negative correlation between growth and leverage is negligible. Al-Sakaran (2001) in his study confirms the negative correlation between profitability and debt ratio is also confirmed. On

TABLE 3 Correlation Matrix

Variable	(1)	(2)	(3)	(4)	(6)	(6)
(1) Leverage	1					
(2) ROA	-0.4778	1				
(3) Size	-0.1602	0.2767	1			
(4) Growth	-0.0652	0.1252	0.0766	1		
(5) Tangibility	0.1191	-0.3623	-0.0413	-0.0368	1	
(6) Volatility	0.2276	-0.5658	-0.2077	-0.1000	0.2985	1

TABLE 4 Panel Regression Result

Variables	Pooled OLS	Fixed Effect	Random Effect
Constant	0.6116 (0.1318)**	2.1440 (0.6299)**	1.1145 (0.3409)**
ROA	-0.0149 (0.0194)	-0.2597 (0.0968)**	-0.0995 (0.0477)*
Size	-0.0036 (0.0562)	0.0516 (0.0503)	0.0229 (0.0406)
Growth	-0.0683 (0.0706)	-0.0028 (0.0656)	-0.0122 (0.0604)
Volatility	-0.0411 (0.0285)	0.0080 (0.0281)	0.0004 (0.0300)
Tangibility	-0.4476 (0.0657)**	-0.3349 (0.0786)**	-0.3577 (0.0814)**
R ²	0.2343	0.2225	-
Number of observations	630	630	630

NOTES Standard errors are shown in parenthesis. * $p < 0.05$. ** $p < 0.01$.

the other hand, tangibility and volatility both exhibits positive correlation with leverage.

The result of the Hausman test carried out returns a value of -13.00 . However, the test warns that the data used in estimation fails to meet the asymptotic assumptions of Hausman test. Hence, we may not conclude that the random effect is better than the fixed effect. Therefore, the test is inconclusive. Hence, the pooled OLS, fixed effect and random effect panel estimation were carried out in the empirical estimation and the results of each of the panel regression models are presented in table 4. The signs of the explanatory variables in each of the estimated model are consistent, except for size and volatility which are negative in the pooled OLS estimation but positive for both fixed and random effects model.

Generally, the results of the regressions are consistent with theoretical predictions and empirical results of existing studies. Profitability measured as ROA is negatively related to leverage and statistically significant. As firms profitability increase, their leverage ratio reduces. This finding

is consistent with the empirical results of Wiwattanakantang (1999) and Booth et al., (2001).

On the relationship between leverage and size, the estimation shows a positive coefficient. If size is defined to be an inverse proxy for the probability of bankruptcy, the positive and significant coefficient show that it should have less or no effect on the firms' leverage. This positive relationship is confirmed by most empirical studies. Examples include Rajan and Zingales (1995) and Huang and Song (2002).

Contrary to theoretical predictions, tangibility is inversely related to leverage. Although the coefficient is not statistically significant, one reason for such negative relationship may be that the non-debt part of total liability (especially short term liabilities) of a firm does not need collaterals. This result is in line with the findings of Rajan and Zingales (1995), Huang and Song (2002) and Sakatan (2010). The variable of growth was found to be negatively related, although not statistically significant, to leverage which indicates that sampled firms in the course of their growth used more equity financing than debt financing. In other words, growing firms need huge cash flows to sustain their growth and enhance further expansion. However, because of the economic climate of the country in terms of non-availability of loanable funds and high interest rates charged by financial institutions, most firms result to internal financing as their major source of capital.

The coefficient for volatility recorded in both the fixed and random effects model are very low and statistically insignificant. Thus, indicating that the relevance of business risk on the financing structure of Nigerian firms is not confirmed in the models. This result is also consistent with the findings of Sakatan (2010) in the case of Saudi Arabian firms.

Conclusion

This study examines the forces that determine the capital structure of firms in Nigeria and it shows that these forces are quite similar to what obtained in other countries based on empirical investigations. Although the economic climate of Nigeria exhibits a less robust regulatory and legal framework, the factors that affect financial structure are also similar to the rest of the world.

The empirical findings of this study shows that Nigerian firms tend toward internal financing through retained earnings, equity and other short term loans, against long term financing majorly through debts and other long term loans. One factor that can be said to account for this

decision is the ill developed bond market in the country. In addition, the accessibility of firms to long term finances from the existing sources is marred with heavy cost through high interest rates and huge collaterals.

Conclusively, the results of this study have presented some further insights on the determinants of corporate financing decisions of Nigerian firms. The study shows that firms in the Nigerian capital market prefer internal to external source of finance. However, further empirical investigation is needed to reflect the macroeconomic and institutional influence on the capital choice of Nigerian firms. In addition, a larger and more comprehensive list of firms is needed for a more detailed study.

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Impact of Population Ageing on Education Level and Average Monthly Salary: The Case of Slovenia

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Population ageing is a contemporary problem, which does not only mean changing demographic structures, but also affects economy. Based on our research we cannot reject our main research thesis that population ageing has a significant impact on human capital in Slovenia. Using multiple regression analysis, on cross-section data of Slovenian municipalities, we cannot reject our first hypothesis that population ageing in Slovenia leads to lower education level and our second hypothesis that population ageing leads to lower average net monthly salary. Main contribution of this research therefore is the finding and empirical confirmation of the specific impact that population ageing has on human capital based on specific case of Slovenian cross section data. Results of the research imply that some measures have to take place in order to mitigate the unfavourable effects of population ageing on human capital.

Key Words: education level, average salary, population ageing, human capital, Slovenian municipalities

JEL Classification: E24, R23

The Phenomenon of Population Ageing

The fundamental motivation for our research are the significant population ageing (figure 1) in Slovenia, across Europe and in many other countries and the various mostly unfavourable economic consequences that arise from those demographic changes.

For instance, in Slovenia, the average age of Slovenian population rose from 35.9 years in the year 1991 to 42.4 years in the year 2014 and ageing index from 53.6 to 120.5 in the same period. Similarly, the share of old people (people who are 65 years old or more) in total Slovenian population increased from 12.6% to 17.7% from the year 1991 to 2014. The long run

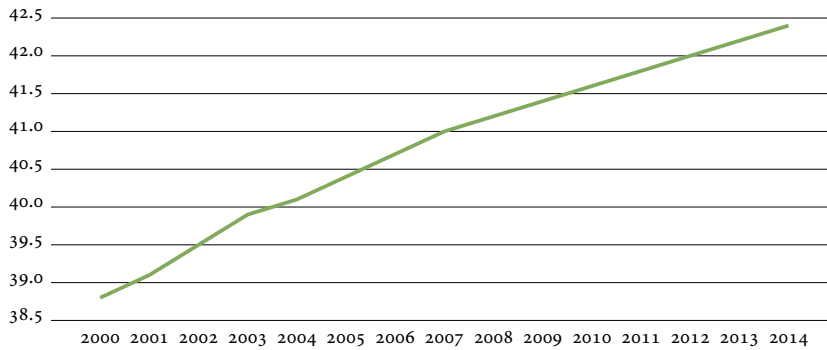


FIGURE 1 Average Age of Slovenian Population, 2000–2014 (based on data from Statistical Office of the Republic of Slovenia, <http://pxweb.stat.si>)

projections forecast natural increase in Slovenian population to be -6.7 in the period 2045–2050 if constant fertility is assumed (United Nations 2015), which will further increase the share of old and decrease the share of young people in Slovenian population. According to United Nations projections, in the year 2050, the share of old people in total Slovenian population will reach 30.4%, while median age will rise up to 48.2 years according to the medium projection variant (United Nations 2015). According to the main scenario of the Eurostat population projections, in the year 2050, the median age of Slovenian population is projected to be 46,8 years, the share of old people in total Slovenian population 29,8% and old dependency ratio 53,9% (Eurostat 2015).

The evident population ageing has not only economic, but also social, psychological, cultural, institutional and political consequences (Malačič 2008, 795) and therefore requires changes and adjustments in many different fields. Obviously, population ageing affects living standard of some country, the quality of life and welfare, which are quite a complex concepts (Mandič and Filipovič Hrast 2011, 16–17; Dubska 2010; Osberg and Sharpe 2011, 1–5; Watson, Pichler, and Waallace 2010, 1–3).

Of course, the fact that people are living longer and longer is not a problem but a huge achievement of a society. The problem is the disturbed balance between the relative number of young and old people due to the low fertility and to too slow response of the government with necessary reforms, which would help to adjust the new demographic reality.

In the second section, we review some previous research about effects of population ageing on human capital and labour market. In the third section we present our research hypotheses, methodology, assumptions, limitations and data used. In the fourth section, econometric results are

summarised and in the fifth section our key findings and implications are presented. Conclusions are drawn in the sixth section.

Some Previous Investigation of Impact of Population Ageing on Human Capital and Labour Market

Much different research has already investigated impact of population ageing on human capital including on its education level and cost. Here we present findings based on the results of some previous empirical studies. These findings are not subjective personal opinions of these researchers but are inferred from their quantitative analyses.

Malačič (2008, 796) emphasizes, that population ageing has impact on economic activity, economy structure by activities and economic process phases: on production, distribution, trade, consumption, savings and investment. He also adds that population ageing means also an ageing of workforce, which leads to a decrease of innovativity, productivity and consequently to a decrease of economic activity. New knowledge, fresh challenges, innovative ideas, propensity to growth are attached mostly to young people, so young economies create a fast economic and social development, provide development and modernisation (Malačič 2003, 294).

Malmberg (2011, 279) proves that population ageing negatively affects economic growth. Based on human capital theory and theory of life cycle, he found out that an increase in an active workforce and an increase of its savings caused that the economy was growing, however the growth was slowed down and income was reduced when dependent (supported) population was increasing. Similar effects of population ageing might be observed regarding technological changes and innovation.

Dimovski and Žnidaršič (2007, 2–15) show that there are different consequences of population ageing for labour market like an increase of expenditures for pensions for healthcare, social security and care for old people, a decrease in the number of people who constitute workforce, a decrease of workforce motivation, competencies and knowledge, a changed perception of work and life, an ageing workforce, lack of workforce, loss of knowledge and loss of experiences and skills.

In their research of human capital impact on economic growth by Slovenian municipalities, Bojnec and Novak (2005, 158) also confirm that age structure of human capital (because of population age structure) is an important determinant of the level of economic development.

Some researchers (Campbell and Siegel 1967; Handa and Skolink 1975; Sloan et al. 1990) pointed out the importance of the size of young gener-

ations of some population for higher education attainment of that population. If population is older, that means that younger generations are relatively smaller compared to generations of old people. In addition, today that means an increasing relative number of those older people who were typically less included in higher education when they were young compared to today's young generations. Consequently, that leads to lower aggregate population education level. Moreover Caron et al. (2005) and Dixon (2003) confirm that older populations are less educated because older people find it more difficult to learn and to acquire new knowledge because they have more difficulties with their memory, find it more difficult to concentrate and focus and are less motivated. Besides, knowledge of older people is more likely to be outdated compared to knowledge of younger people (Vanags 2007).

Similarly, Čepar and Bojnec (2013; 2014) prove a negative impact of population ageing on demand for higher education, which probably leads also to lower relative number of higher education graduates and lower general population's level of education attainment. Lower fertility results in smaller generations of traditionally young students, which consequently results in lower absolute and relative number of graduates.

However, on the other hand, there are some researches proving that population ageing is actually increasing the populations education level. Just recently, Kluge et al. (2014) at the Max Planck Institute for Demographic Research conducted a study on German population, which is with its median age 44.3 years the second oldest population in the world. They found out that an increasing population ageing is actually increasing education level and productivity through a continuous lifelong learning and additional education of adults and older people who constantly update and build up their skills, competencies, knowledge and experiences throughout their lives.

Higher share of older people in population age structure means less innovations, lower professional mobility, slower follow up to technological improvements, pension and healthcare system problems, financial and labour market problems; population ageing affects consumption and savings as well as economic development and growth of a country (Redek and Godnov 2007, 125–6). Consequently, a country's welfare measured by income per capita might be reduced. Population ageing affects public as well as private sector, which further on affects investment, labour force supply, tax rates and wage growth (Miles 2005, 1–3).

Similarly, Dixon (2003, 70–4) as well as Johnson and Zimmermann

(1993, 1–22) in their research find out that a workforce ageing brings an increase in labour cost, an outdated knowledge, an increase of structural unemployment, a decline in work competences, an increase in disability and sick benefits and consequently lower revenues and economic activity.

On another hand, there are also some researchers who do not see an increased cost of labour associated with older workforce as a problem and some researchers who prove the opposite effect of population ageing on wages. Some believe that higher salaries of older people is justified and compensated by their higher work results, work efficiency, accumulated knowledge and many years' experience about work process – know-how (Disney 1996). On the other hand, their productivity might be lower due to a higher risk for health issues and sometimes consequent early retirement which builds a pressure on a pension system (Auer and Fortuny 2000) and a downward pressure on their salaries (Skirbekk 2003; Thießen 2007) through a decreasing productivity of older people. Serban (2012) is one of those researches who believe that population ageing decreases labour cost in a short run. A downward pressure on aggregate salaries is also conducted through lower aggregate population education level of older populations however that is in some cases offset by several salary benefits and extras which increase overall older people's salaries (Fallick, Fleischman, and Pingle 2010).

Obviously, there are also many other different consequences of population ageing that have already been explored in different contexts and different relations by other researchers. However, we can see from the previous research, that the population ageing impact on population education level and salaries is not quite clear and unambiguous. Next, in our empirical investigation, we are focusing specifically on consequences of population ageing for education level and average monthly salary in case of Slovenian municipalities and present our original findings. We want to see whether our empirical study supports those previous studies, which prove a negative impact of population ageing on education level and salaries or those, which prove a positive impact and what are other particular differences of the results of our research compared to previous researches.

The Research Hypotheses, Methodology, Assumptions, Limitations and Data Used

In this section, we present the research hypotheses and the methodology, which was used to achieve the goals of the research and to test the research

hypotheses. Next, we present the assumptions on which our research is based as well as its limitations in a sense of its scope, geographical limits and time frame. Finally, the most important data used in this investigation is explained.

THE RESEARCH HYPOTHESES

It is obvious already from the review of the previous investigation and research, that there are many different consequences of population ageing for human capital and labour market. In our research, we wanted to statistically test the human capital effects of population ageing on cross section data about 210 Slovenian municipalities in the chosen year 2009. Our *main research thesis* is:

Population ageing is an important factor, which significantly deteriorates the quality of human capital in Slovenia.

In order to test our main research thesis, we set the following two hypotheses:

HYPOTHESIS 1 *Older populations have lower education level.*

HYPOTHESIS 2 *Older populations have lower salaries.*

It follows from the literature review, that there are different and in some cases contradictory findings regarding the (unfavourable) consequences of population ageing for labour market. Some studies prove a positive and some a negative influence of population ageing on populations education level and average salaries. Using cross section data for Slovenia, we want to test, what is the role of population ageing for the two chosen human capital dimensions (education level and salaries) in case of Slovenia, especially what is the direction of the influence of population ageing on them.

METHODOLOGY

In order to test the main research thesis and the two hypotheses set, we run several regression models. First, we collected secondary data from the databases of Statistical office of Republic of Slovenia. The data refer to several demographic and economic variables by 210 Slovenian municipalities for the year 2009. Statistical observation units are Slovenian municipalities. The cross section data enable us to exclude any time related effects from the analysis. The cross section demographic and economic data were properly arranged, transformed and entered into a statistical computer package SPSS, which was used for regression analysis.

First, bivariate and later also multivariate regression models were tested in order to analyse the connection between variables, which measure population age structure, and variables, which measure education level and average monthly salary in Slovenia. Variables, which measure education level and average monthly salary in Slovenia were used as dependent variables and variables, which measure population age structure, were used as explanatory variables. The general form of the regression models used in case of the first hypothesis was:

$$\begin{aligned} \text{Educ. level indicator} = & \alpha + \beta_1 \text{determinant}_1 + \dots + \beta_n \text{determinant}_n \\ & + \text{error term } \mu \end{aligned} \quad (1)$$

and in case of the second hypothesis was:

$$\begin{aligned} \text{Salary indicator} = & \alpha + \beta_1 \text{determinant}_1 + \dots + \beta_n \text{determinant}_n \\ & + \text{error term } \mu. \end{aligned} \quad (2)$$

An advantage of a regression analysis compared to correlation analysis is that it allows us to estimate the percentage of the variance of the dependent variable (education level or average net salary in our case) that can be explained by the variability of the in the model included explanatory variables. Next, correlation analysis tells us only how strong is the association between the variables, while regression analysis explains which variable is the cause and which the consequence is. Regression analysis also allows us to estimate beta coefficients, which show the strength of the impact of a particular explanatory variable on the observed dependent variable. Conducting *t*-tests within the regression analysis, we also statistically tested the statistical significance of the explanatory variables. So regression analysis provides richer information for interpretation of results compared to a simple correlation analysis. Using regression analysis, we estimated parameters of the models and chose the best fitting models based on the standard error of the models, adjusted determination coefficient, *F*-tests and *t*-tests. In the regression analysis, some control variables were employed too, in order to eliminate their effects from the explanatory power of the demographic variables.

RESEARCH ASSUMPTIONS AND LIMITATIONS

Assumptions of our investigation mostly refer to the indicators, which are used to measure population ageing as well as education level and average monthly salary. We assume the following. Lower percent of peo-

ple with tertiary education means lower quality of human capital. Lower monthly average salary means lower quality of human capital. Lower share of young people or/and higher share of old people, and/or higher ageing index, and/or lower natural population increase means older population age structure.

Limitations of our investigation narrow the scope of investigation and address some methodological problems. Most important limitations are the following. The research is conducted using data for all Slovenian municipalities for the chosen year 2009; consequently, the results of the research are valid for the whole Slovenia for the year 2009. We were especially interested in analysing variations across cross section observation units in some chosen year and not in variations over some time period. Generalisation of those results on other countries is limited and depends on the specificities of those other countries. When analysing average wages, we were limited on net average monthly wages. The choice of the proxy measures or indicators used in our investigation depends also on the data availability. The size of a municipality was proxied by the number of its population and the gross investment by the number of enterprises. Due to the data confidentiality, the data on gross investment by municipalities were not available. Our research does not investigate all the factors of education level and average salary but focuses on population ageing factor only.

DATA USED

All secondary data were collected from the databases of Statistical office of Republic of Slovenia. The data refer to several demographic, human capital and other socio-economic variables by 210 Slovenian municipalities for the year 2009.

Demographic data were mostly used to measure population ageing. Below is a list of demographic data used in regression analysis (see http://www.stat.si/doc/pub/rr776-2002/met_izracun/izracun.htm):

- *Average population age* is defined as a weighted arithmetic mean of a certain group of people.
- *Ageing index* is calculated as the number of persons 65 years old or over per hundred persons under age 15.
- *Natural population increase per 1,000 population* is the rate between the difference between the number of live births and the number of deaths of a chosen area in a chosen calendar year in a numerator and

the number of population in the middle of the same year and of the same area in the denominator multiplied by 1,000.

- *Net migration population increase per 1,000 population* is the difference of immigrants and emigrants of an area in a period of time per 1,000 inhabitants in the middle of the same year and of the same area. A positive value represents more people entering the area than leaving it, while a negative value means more people leaving than entering it.

The data below were used in a regression analysis to measure human capital conditions:

- *Percent of people with tertiary education* is defined as a ratio between the number of population with a tertiary education attainment (ISCED level 5 and 6) and total population in a chosen year and municipality multiplied by 100.
- *Average net monthly salary* is gross monthly salary less social security and income tax.

In our regression analysis, we included additional independent variables in order to control for the ‘size of the municipality’ (measured by the number of population), ‘the existence of a university in a municipality’ and ‘the number of enterprises in a municipality.’ By the size of the municipality, we tried to capture the positive synergies and economies of scale that may occur in bigger municipalities. By the existence of a university in a municipality, we wanted to capture the positive effects of the availability and accessibility of higher education and the many other positive effects of a university on the local environment. By the number of enterprises, we wanted to capture the economic activity by municipalities. When analysing the dependence of economic welfare on the population ageing, we wanted to test, whether the presence of the control variables changes the results of the regression analysis or not.

Econometric Results

In this section, we present statistical results only. Their contextual interpretation and the reasoning which is in behind is provided in section five. In order to test each of the two hypotheses we run several bivariate and multivariate linear and logarithmic regressions. In all the regression models, we analysed the explanatory power of the independent explanatory demographic variables as well as the strength and the direction of the association between an indicator of human capital conditions and an indi-

cator of population ageing. Using regression and correlation coefficients, we measured the existence and the direction (positive/negative) of the association and impact that was assumed for each factor in each hypothesis. Using adjusted determination coefficient we wanted to measure the share of the variance of the particular human capital indicator that could be explained by the independent variables including population ageing. On the basis of *t*-test results, we tested statistical significance of each individual explanatory variable, where on the basis of *F*-test results we tested statistical significance of the regression model as a whole. Within the regression analysis we run many different models, however only those which were significant and those with highest explanatory power were selected for interpretation in this paper. After the control variables were entered into the initial regression models, we checked if the direction of the influence or statistical significance or the explanatory power of the explanatory demographic variable were changed or not and again for final interpretation used the most appropriate models. Our intention was not to find all the factors that influence the particular human capital aspect (percent of people with tertiary education in case of the first hypothesis and average net monthly salary in case of the second hypothesis), but to show that population ageing is one of them. That is also why we first started with bivariate models.

RESULTS OF THE REGRESSION ANALYSIS OF THE FIRST HYPOTHESIS-EDUCATION LEVEL OF POPULATION

We run several linear and non-linear regression models where the percent of people with tertiary education (measuring one aspect of human capital conditions) was a dependent variable and ageing index, population's average age (both measuring population ageing) together with some control variables were independent variables.

Preliminarily we calculated spearman correlation coefficient between dependent and independent variables, which all confirmed the later in the regression analysis calculated relationships between the percent of people with tertiary education and population ageing expressed by the regression coefficient beta. Spearman correlation coefficient (*r*) in the first three models shows, that older population is associated with lower percent of people with tertiary education.

As we can see from regression analysis results in table 1, all the included independent variables in all three regression models are statistically significant, while *F*-test shows that all four models as a whole are statisti-

TABLE 1 Regression Models Results: Logarithm of the Percent of People with Tertiary Education Depending on the Logarithm of the Population Ageing Indicators and Control Variables and some Descriptive Statistics, Slovenia, 2009

Item	Regression coefficient (β)*		
	Model 1	Model 2	Model 3
Constant	9.006 (0.007)	4.066 (0.000)	0.038 (0.048)
Log. of average age	-3.969 (0.050)	-	-
Log. of ageing index	-	-0.714 (0.043)	-0.377 (0.001)
Log. of no. of population	-	-	0.223 (0.001)
Log. of no. of enterprises	-	-	0.870 (0.000)
<i>F</i> -test	3.794 (0.050)	3.791 (0.043)	2437.733 (0.000)
Adjusted <i>R</i> ²	0.282	0.306	0.672
Spearman's <i>r</i>	-0,541 (0.000)	-0,563 (0.000)	-0.563* (0.000)

Average age = 41.4 (min. = 36.9, max. = 49)

Ageing index = 117,8 (min. = 65.4, max. = 323.9)

Number of population = 2,042,335 (min. = 320, max. = 278,314)

Number of enterprises = 160,931 (min. = 14, max. = 33,223)

Percentage of people with tertiary education = 24.6% (min. = 5%, max. = 42%)

NOTES * Exact two-tailed significance levels in the brackets. *N* = 210. Based on data from Statistical Office of the Republic of Slovenia (<http://pxweb.stat.si>).

cally significant too. Based on *t*-tests ($\text{sig.}(t) < 0.05$) and based on *F*-tests ($\text{sig.}(F) < 0.05$), we may always reject the null hypothesis that there is no influence of the logarithm of the population ageing indicator on the logarithm of the percent of people with tertiary education, taking almost no risk of making the type I error (which would be the incorrect rejection of a true null hypothesis). Thus we may conclude from all the three models that the population ageing has an influence on the percent of people with tertiary education in Slovenia.

Adjusted determination coefficient (adj. *R*²) from the first two models tells us that around 30% of the variation of the logarithm of the percent of people with tertiary education could be explained solely by the variation of the logarithms of the in the model included population ageing indicators by the Slovenian municipalities (28.2% in the first model and 30.6% in the second model). That is actually quite a lot, considering that no other explanatory variables are included in those first two models. After some control variables are added, the explanatory power of the model is increased to 67.2% (model 3) however the direction of the impact of pop-

ulation ageing indicator remains unchanged and statistically significant. Our main purpose was simply to show that population ageing itself has some significant impact on the percent of people with tertiary education.

When average age is increased by 1%, the percent of people with tertiary education is decreased on average by 3.969% (model 1). When ageing index is increased by 1%, the percent of people with tertiary education is decreased on average by 0.714% (model 2) or by 0.377% holding other variables constant when control variables are included (model 3). Higher number of enterprises increases the percent of people with tertiary education, as well as does the higher number of people.

At the bottom of the table 1 we can see some descriptive statistics for Slovenia in 2009 (an average of 210 municipalities) and extreme values for the municipality with the highest value and for the municipality with the lowest value. For example, the ageing index recorded in 2009 in Slovenia was 117.8, meaning that there were on average 117.8 persons who are 65 years old or over per hundred persons under age 15. The average age of Slovenian population recorded in 2009 in Slovenia was 41.4 years.

RESULTS OF THE REGRESSION ANALYSIS OF THE SECOND HYPOTHESIS: AVERAGE NET MONTHLY SALARIES

Also in case of the second hypothesis testing, we run several regression models; however we present here only those, which were most statistically significant and consistent.

Again we first calculated spearman correlation coefficient between dependent and independent variables, which all, also in the case of the second hypothesis testing, confirmed the later in the regression analysis calculated relationships between logarithm of the average net monthly salary and population ageing expressed by the regression coefficient beta (table 2). Spearman correlation coefficients (r) show that higher population ageing is associated with lower average net monthly salary. Here we assume that the natural population increase per 1,000 population could be used as a long term proxy measure of population ageing. We assume that the lower the natural population increase, the older the population will be in the future. Similarly we believe that the net migration population increase per 1,000 population will influence population ageing. Higher net migration population increase per 1,000 population is leading into lower average age of population. We explain that by assuming that higher net migration population increase means higher number of net immigrants, which are generally younger, working-age people, who con-

TABLE 2 Regression Models Results: Logarithm of the Average Net Monthly Salary Depending on the Logarithm of the Population Ageing Indicators and Control Variables and Some Descriptive Statistics, Slovenia, 2009

Item	Regression coefficient (β)*		
	Model 1	Model 2	Model 3
Constant	3.389 (0.000)	2.892 (0.000)	2.897 (0.000)
Log. of average age	-0.290 (0.049)	-	-
Log. of the nat. pop. increase	-	0.026 (0.000)	-
Log. of the net mig. pop. increase	-	-	0.017 (0.002)
F-test	3.253 (0.049)	19.151 (0.000)	9.797 (0.002)
Adjusted R^2	0.377	0.148	0.069
Spearman's r	-0,624 (0.000)	0,390 (0.000)	0.277 (0.000)

Average age = 41.4 (min. = 36.9, max. = 49)

Natural population increase = 0.015% (min = -0.172, max. = 0.125)

Net migration population increase = 0,056% (min. = -0.228%; max. = 0.831%)

Average net monthly salary = 930 € (min. = 530 €, max. = 1,148 €)

NOTES * Exact two-tailed significance levels in the brackets. $N = 210$. Dependent variable: Logarithm of the average net monthly salary. Based on data from Statistical Office of the Republic of Slovenia (<http://pxweb.stat.si>).

sequently decrease the average population age. These results were confirmed and upgraded by the regression analysis.

Adjusted determination coefficient (adj. R^2) tells us that even more than one third of the variation of the logarithm of the average net monthly salary could be explained solely by the variation of the logarithms of the in the model included population ageing indicators by the Slovenian municipalities (37.7% of the variation in the first model, 14.8% in the second model and 6.9% in the third model). Again, these adjusted R^2 are quite high, considering that there are no other explanatory variables included in the models, while that is obvious, that there also other factors influencing the average net monthly salary. However our main purpose was not to build a model of all facto, but was simply to show that population ageing or its determinants have some significant impact on the average net monthly salary.

The beta regression coefficients from table 2 show that when average age is increased by 1%, the average net monthly salary is decreased on average by 0.29% (model 1). When natural population increase is increased by 1%, the average net monthly salary is increased on average by 0.026%

(model 2). When the net migration population increase is increased by 1%, the average net monthly salary is increased on average by 0.017% (model 3).

At the bottom of the table 2 we can see some descriptive statistics for Slovenia in 2009 (an average of 210 municipalities) and extreme values for the municipality with the highest value and for the municipality with the lowest value. For example, the average natural population increase per 1,000 population recorded in 2009 in Slovenia was 1.5 persons, and the average net monthly salary was 930 €.

Key Findings and Implications

Based on the results of our empirical investigation we came to the following key findings. In the first part of our empirical study, we investigate the impact of population ageing on population education level. Based on spearman correlation coefficients, but most importantly on the regression analysis results, we see that higher average age and higher ageing index decrease the percent of people with tertiary education. Even, when the control variables are employed in the regression model, the negative direction of an influence of population ageing variables on the percent of people with tertiary education stays the same (stays negative) and the statistical significance is still ensured. We believe that population ageing means an increasing share of those older people who were typically less included in higher education when they were young, compared to today's young generations. Consequently that leads to lower aggregate population education level. Younger generations, which are typically included in formal (tertiary) education, are declining due to the declining fertility and consequently there is lower inflow of young educated people. Older people also find it more difficult to learn and to acquire new knowledge because they have more difficulties with their memory, find it more difficult to concentrate and focus and are also less motivated compared to young people. Consequently, knowledge and competencies of older people are more likely to be outdated compared to younger people which number is in decline.

Our findings are thus consistent with the results of some other recent studies, which prove, that population ageing decrease populations' education level (Caron et al. 2005; Dixon 2003; Vanags 2007) and oppose to some other studies which try to prove the opposite (Kluge et al. 2014). We confirm the high importance of population ageing as a factor of populations' education level, since based on our empirical findings, population

ageing explains around 30% of the education level variations, which is not negligible.

According to the control variables within the regression analysis results, higher number of enterprises increases the percent of people with tertiary education, as well as does higher number of people. We believe that is because enterprises attract younger working-age people with higher education attainment. On the other hand, many municipalities with lower number of people have older population age structure, since emigrant are normally younger working-age people with higher education. Besides, many municipalities with higher number of people are younger also because bigger municipalities are more likely to have universities or at least some faculties and are together with their better infrastructure and other positive externalities generally friendlier to young people and families, which additionally attract younger people and consequently increase education level. Based on all the above mentioned findings, *we cannot reject our first hypothesis* that older populations have lower education level.

In the second part of our empirical study, we investigate the impact of population ageing on average monthly salaries. Even though, the population ageing is obviously not the only factor, we found out that municipalities with higher average population age have lower average net monthly salary. Moreover, in municipalities where natural population increase is higher and where net migration population increase is higher, the average net monthly salary is higher too. We believe that higher natural and net migration population increase is associated with younger populations. The first one is obvious while at the second one we believe, that is because immigrants are generally younger, working-age people who with their families (also children) consequently decrease the average age of population in which they are immigrating to. With our empirical findings we join to the group of researchers who prove that older people have lower education or more outdated knowledge, lower productivity and lower efficiency also due to the health issues, are less flexible and less innovative and consequently have lower salary (Redek and Godnov 2007, 125–6; Skirbekk 2003; Thießen 2007; Serban 2012). Our findings do not support those studies, which prove that accumulated experiences and salary benefits offset factors that decrease older people salaries (Disney 1996; Miles 2005, 1–3; Fallick, Fleischman, and Pingle 2010). Our empirical study confirms the high importance of population ageing as a factor of populations net average monthly salaries, since based on our empirical

findings, population ageing explains more than one third of the average salary variations, which is a significant share. Based on all that findings we *cannot reject our second hypothesis* that older populations have lower average salaries.

Our empirical findings might also be useful for governing economic policy. The findings imply that demographic processes like population ageing significantly impact the quality of human capital, meaning that proper population policy might also be used as an instrument of a labour market policy in a wider sense. Higher fertility and higher number of children per family does not mean lower prosperity and welfare in a long run as it was speculated sometimes but just the opposite.

Finally, our findings imply that population ageing is leading into lower society's economic welfare, since lower aggregate education level and productivity do not go hand in hand with economic growth.

Conclusion

The main contribution of our study is that we upgraded the various theoretical views and interpretations of some other researchers with our own original and specific empirical findings regarding the interrelation between population ageing and quality of human capital. Throughout the body of empirical research, which is presented in the literature, we may find various examples of population ageing impact on population's education level and average salary. Here we bring forward another empirical evidence of a negative impact of population ageing on aggregate education level and average monthly salaries, which is consistent also with some other previous research. However on the other hands, in the literature, we may also find studies, which prove the opposite.

Yet, based on our research we cannot reject our *main thesis* that population ageing is an important factor, which significantly deteriorates the quality of human capital in Slovenia. Most probably that could also be explained by the lower productivity and flexibility of the ageing labour force, its lower and outdated knowledge and competencies. Thus we may conclude that, even though, the quality of older people's human capital (education level, productivity, . . .) might be improving over time, it is still much lower compared to that of younger generations. We do not disagree with those studies, which prove that the quality of human capital even in older populations is improving over time 'ceteris paribus,' due to many reforms and steps within the population policies, which concern older people. However we see the findings of our study as another proof, that

younger populations are still more competitive in terms of human capital, compared to the old ones, meaning that population ageing, holding other things constant, is a negative process, which negatively affects a society's economic welfare and wellbeing.

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**Baltske poti od liberalnega modela trgovine
do neo-merkantilizma v Evropski uniji**

Viljar Veebel

Gospodarski napredek Baltskih držav po ponovni vzpostavitvi neodvisnosti je bil tesno povezan z liberalno ideologijo in vrednotami njihovih gospodarstev: odprtost za investicije, preprost davčni sistem in nizka davčna obremenitev, liberalna trgovinska politika in fleksibilen trg dela. Za razliko od Baltskih dežel so se nekateri njihovi glavni partnerji v Evropski uniji (EU) osredotočili na vzpodbujanje svoje gospodarske rasti z neo-merkantilističnim pristopom širjenja izvoza, ki ga je podpirala ekonomska struktura teh dežel – izvoznic visoke tehnologije in investicijskega blaga. Posledično pa, med tem ko Baltske države pričakujejo, da v širšem kontekstu ostale države – članice EU z njimi delijo vizijo liberalnega tržnega gospodarstva, regionalni trgovski in sodelujoči partnerji njihovih motivov ne razumejo v celoti. Trenutno potekajoča raziskava razpravlja o tem, ali praktična implementacija in potrebe evropskega neo-merkantilizma zadoščajo gospodarskim in socialnim potrebam Baltskih držav. Poleg tega se študija še dodatno osredotoča na vprašanje ali bi Baltske države v praksi morale biti pripravljene za evropski neo-merkantilistični projekt v prihodnjih letih.

Ključne besede: Evropska unija, Baltske države, merkantilizem, protekcionizem, liberalna trgovina

Klasifikacija JEL: B2, F1, F5

Managing Global Transitions 13 (3): 213–229

**Dobičkonosnost kot dejavnik ki vzpodbuja prakso korporativnega
zelenega investiranja v Johannesburgu**

Fortune Ganda, Collins C. Ngwakwe in Cosmas M. Ambe

Aktualne študije kažejo nepripravljenost podjetij in pomanjkanje interesa za podporo pobudi zelenega investiranja. To delo se je poglobilo v povezavo med dobičkonosnostjo in praksami korporativnega zelenega investiranja v 100 južnoafriških CDP (Carbon Disclosure Companies – podjetja, ki merijo svoja okoljska tveganja) podjetij na JSE (Johannesburg Stock Exchange). Po izvedenih hi-kvadrat testih so rezultati pokazali, da dobičkonosnost vpliva na prakse zelenega investiranja v firmah s seznama JSE. Še več, ugotovljena je bila pozitivna neposredna korelacija med dobičkonosnostjo in praksami zelenega investiranja v firmah

z JSE seznama. Raziskava torej kaže, da lahko firma postane uspešnejša in njena dobičkonosnost višja, če med svoje dejavnosti vključi zeleno investiranje.

Gljučne besede: dobičkonosnost podjetij, prakse zelenega investiranja, podjetja s seznama JSE, projekt razkrivanja ogljika (Carbon Disclosure Project – CDP), Južna Afrika

Klasifikacija JEL: M14, Q01 Q53, Q54, Q56
Managing Global Transitions 13 (3): 231–252

Občutljivost turškega gospodarstva z vidika odvisnosti od nafte

Eren Yıldız in Merve Karacaer Ulusoy

V razvijajočem se gospodarstvu je energija ključni vložek. Turčija je dežela, odvisna od nafte in nestanovitnost cen te surovine lahko ima nepredvidljive posledice. Ta študija se je osredotočila na vpliv sprememb cen nafte na turško makroekonomijo. VAR model (Vector Autoregressive Model – vektorski avtoregresivni model) je bil izdelan z uporabo četrletnih podatkov iz obdobja med prvim četrtletjem leta 2003 do prvega četrtletja leta 2013. Spremenljivke, uporabljene v modelu so cena nafte brent, bruto investicije, obrestna mera, ameriški BDP in inflacija. Verjameva, da je analiza prikazala občutljivost turškega gospodarstva na nihanja cen nafte s pomembnimi rezultati na področju odnosa med ceno nafte in glavnimi makroekonomskimi kazalniki. Ta študija kaže tudi na neverjetno potrebo po trajnostnih energetske politikah, z namenom stabilizacije državnega gospodarstva.

Gljučne besede: šoki zaradi cen nafte, odvisnost od nafte, Turčija, makroekonomija, vektorski avtoregresivni model, bruto investicije, inflacija, obrestna mera

Klasifikacija JEL: O13, Q13, N75, P48, Q47
Managing Global Transitions 13 (3): 253–266

Korporacijska finančna struktura nefinančnih kotirajočih podjetij v Nigeriji

Wakeel Atanda Isola in Lateef Olawale Akanni

Odločitev o korporativnem financiranju podjetij ostaja sporno vprašanje tako v korporativnih, kot tudi v akademskih razpravah. Pričujoča študija želi raziskati dejavnike, odgovorne za finančne odločitve nigerijskih družb. Za potrebe raziskave je bilo 63 nefinančnih družb, kotirajočih na nigerijski borzi izbranih glede na razpoložljivost podatkov za obdobje od leta 2001 do leta 2010. Finančne družbe so bile izločene zaradi njihovih podobnih regulativnih okvirjev in z namenom, da bi se

olajšala primerjava rezultatov. Med tem ko se večina študij osredotoča na delež dolga kot ukrepa finančnega vzvoda, ta uporablja razmerje med skupnim dolgom in bilančno vsoto. Empirične ugotovitve statične panelne regresijske analize potrjujejo, da se nigerijske družbe nagibajo k notranjemu financiranju preko zadržanih dobičkov, kapitala in drugih kratkoročnih sredstev in so proti dolgoročnemu financiranju, v glavnem temelječem na zadolževanju in drugih dolgoročnih posojilih. Dejavniki ki lahko govori v prid te odločitve je slabo razvit trg z obveznicam v državi, kot tudi slabša dostopnost do dolgoročnih načinov financiranja iz obstoječih virov, ki jo še dodatno poslabšajo visoke obrestne mere in visoke zavarovalne vsote.

Ključne besede: korporativne finance, finančni vzvod, dobičkonosnost

Klasifikacija JEL: G32, L25

Managing Global Transitions 13 (3): 267–280

Vpliv staranja prebivalstva na raven izobrazbe in povprečno mesečno plačo: primer Slovenije

Žiga Čepar in Marjetka Troha

Staranje prebivalstva je aktualen problem, ki ne pomeni le spreminjanja demografskih struktur, temveč tudi vpliva na gospodarstvo. Na podlagi naše raziskave ne moremo zavrni temeljne raziskovalne teze, da ima staranje prebivalstva statistično značilen vpliv na človeški kapital v Sloveniji. S pomočjo uporabe multivariatne regresijske analize na presečnih podatkih o slovenskih občinah, ne moremo zavrni naše prve hipoteze, da staranje prebivalstva v Sloveniji vodi v nižjo ravne izobraženosti in naše druge hipoteze, da staranje prebivalstva vodi v nižje povprečne neto mesečne plače. Glavni prispevek te raziskave so torej ugotovitve in empirična potrditev glede specifičnega vpliva, ki ga ima staranje prebivalstva na človeški kapital in sicer na podlagi specifičnega primera presečnih podatkov za Slovenijo. Rezultati raziskave nakazujejo, da bi bilo potrebno sprejete ukrepe, ki bi ublažili neugodne vplive staranje prebivalstva na človeški kapital.

Ključne besede: raven izobrazbe, povprečna plača, staranje prebivalstva, človeški kapital, slovenske občine

Klasifikacija JEL: E24, R23

Managing Global Transitions 13 (3): 281–299