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THE IMPACT OF FINANCIAL CRISES TO SOUTH AND NORTH EUROPE

A comparison in competitiveness

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ABSTRACT

Parliamentary elections and polls have shown that across Europe, voters are increasingly worried on the financial and sovereign crises and on the burden created to the lender countries in the Eurozone. Research on these crises has focused on the management of sovereign debts and on the banking crises (e.g. Frangakis 2011 & World Economic Forum 2005&2010, IMF 2008). This study compares the South (Portugal, Spain, Greece and Italy) with North Europe (Norway, Denmark, Finland and Sweden). One measures the relative performance in terms of GDP growth and competitiveness of the regions.

Our analysis shows that private and public social expenditures in South have gone up by 3 percent point during 1990 – 2003. Thus, the fiscal policy has supported the countries to grow by the Keynesian multiplier. At the same time, the differences in government debt and private voluntary social expenditure between the North and the South have continued to grow during the financial crises. Therefore, the comparison of the regions needs a diverse tool taking into account both different aspects of welfare and productivity.

The comparison of competitiveness of the countries as indicated by the IMF and WEF competitiveness reports show support to the Nordic countries. Additionally, the empirical analysis shows that the main reason for slow growth in the South is the public debt and not any cultural factor or environment.

Final part of thesis uses performance indices in explaining GDP growth. I rely on the Global Competitiveness Index of WEF with 115 countries from 2004–2005 to 2009–2010. According to the results, the Global Competitiveness Index predicts growth when controlling for capital formation, savings rate and government debt. The South might have some omitted competitiveness not viewable in the competitiveness index.

KEYWORDS: competitiveness of country, South and North Europe, financial crises

1. INTRODUCTION

When the financial crisis started in the United States, no one knew that it would turn into bank crisis and afterwards even into the sovereign debt crises in Europe, or that it would still be here in 2013. In the literature, there are many papers about how some European country did badly as compared to another one (e.g. OECD Economic Surveys 2006-2008 and the competitiveness indexes of World Economic Forum and IMF). The aim of these has been to clarify how to balance the state economy, why and how to do that. Yet, there is less research about how countries of similar sociological type made their way through the crisis. As we have seen, the crises have been more difficult and challenging to South Europe (Greece, Italy, Portugal and Spain) than to the North (Denmark, Finland, Norway and Sweden). The division of South Europe and North Europe arises not only from geography but also from sociology. Esping-Andersen's division of welfare states recognizes the differences between Scandinavia and South Europe.

While observing the changes that occurred in the given country groups, the aim is to identify the economic decisions of politicians that have supported the growth (or recovery) of welfare. The clearest difference between the South and the North is social securities provided by the government. As a result, the tax rate has been higher in the North than in the South. On the other hand, according to Social Expenditure Database of OECD (2007), South Europe has been providing increasingly more social support (as present of GDP) for its citizens from 1990 to 2003. Meanwhile the tax rate of the South has not totally followed this development. This unbalance has made it harder for South to support increased number of unemployed during the financial crises. Chapter 5 discusses in detail the social expenditure.

In order to examine the development during the financial crises, the data are collected for years 2005-2010 from the World Bank and using the Global Competitiveness Index of the World Economic Forum (WEF) for the same period. As the ranking of the index has a high error margin (partly because of the survey part of country analysis), and at the same time the theory is far from the praxis in this index (Rouvinen Petri 2005), our regression will primarily rely on the hard data instead of survey results. Rouvinen (2005) presented that the ranking in the index of WEF or IMF did not correlate with future growth, yet they correlate strongly with the present level of GDP and correlate slightly with the GPD growth in the past. In contrast to what Rouvinen (2005) found about the Global Competitiveness Index, the regressions show that the score of The Global Competitiveness Index does predict growth, when used with the other

explanatory variables of level of production development and level of welfare. In addition, the data are organized as panel database that is a more efficient way to approximate the growth of GDP taking into account country-specific characteristics.

This thesis is organized as follows. Chapter 2 presents the most important underlying theories and hypotheses. Chapters 3 and 4 present some country specific issues in South and North Europe. Chapters 5 and 6 focus on the econometrics of the South and North. The former estimates the level of social security in North and South Europe comparing them and the latter studies growth between 2004 and 2009. Chapter 7 concludes.

2. THEORY

In this chapter, I first discuss why openness in trade is the competent choice for consumers and firms. Section 2.1, Social Security, discusses a theory underlying the estimates of chapter 5, while section 2.2, The Competitiveness of Countries, briefly presents the ongoing discussion about the definition of competitiveness.

When one wants to compare many countries at the same time, it is efficient to refer to a country as one micro level actor. It is true that we miss some aspects of variation within a country, but that is out of our focus. This thesis is based on the Representative Consumer Model and Overlapping Generations Model (Harms, Philipp: 2008:44 & 119).

Here we discuss these models very briefly. In the former, the economy (i.e. country) is seen as a micro level player, for which utility in period t is retirement payment discounted to period t and the current level of consumption. What is remarkable in that is the consumption in the current period is reduced by consumption of those who are children in that period. In figure 1, consider generation $t-1$ in the period of t . One gets the ladder model, when one adds the utility of representative consumer's offspring. Again, for generation $t-1$, the utility is consumption in the period t and retired payment discounted to period $t-1$ and added the utility of the offspring. In the Overlapping Generations Model, every generation can be assumed to take in their utility function the utility of next generation, which then has the next generation's utility in his utility function. In this way, the utility function goes to infinite and represents all future generations.

Child	Work	Retired					
	Child	Work	Retired				
		Child	Work	Retired			
			Child	Work	Retired		
					
t-2	t-1	t	t+1	t+2	t+3		

generation t-2
generation t-1
generation t
generation t+1

Figure 1. Overlapping generation model (see more: Harms 2008:119)

Therefore, in period k when there is a baby boom, the current account is in deficit, because the economy needs funding for schooling and for raising the children. Assuming that the baby boom lasts only this one period, the current account in $k+1$ is in surplus. The biggest generation saves for retirement. In $k+2$, the generation is retired and consumes at least partly, what it has saved. At the same time, the current account is negative. If generations value “warm glow” (i.e. passing down, inheritance), then the phenomenon is smaller. In warm glow, leaving inheritance generates utility to the elderly.

In other words, the current account only tells the change in saving. Given some reasons of saving it is natural for CA to be negative when there are more elderly (or children) than in the working force. This assumption should be visible in Europe as savings for pensions, because there are currently more elderly than there are children. If we think this in the same way that figure 1 simplifies, working force is now larger than the working force in the next period. Therefore, the savings for pension should be dominating the current account, as generations are getting smaller. One possible reason for recorded unbalance is tax avoiding that result more savings disappearing into tax heavens (Zucman Gabriel 2013).

In addition to the presented representative consumer view, IMF (2008:95) remarks that competition in domestic market and imports are too often ignored in the research, even though openness to imports can make a country in question more competitive. Opening domestic market for foreign competition enables outsourcing and more freedom of choice for consumers.

Outsourcing to country that has cheap labor cost allows the efficient allocation of labor in the home country to more productive jobs, where they can additionally earn more. The cost of outsourcing is frictional unemployment until the employee finds a new job. For the higher educated employee this time is usually longer. At the same time, the firm can benefit in two ways. On one hand, it can keep prices at the same level and make a larger profit thanks to lower cost. On the other hand, firm can lower the price of products keeping the profit margin the same and make a larger return because of more demand. The nature of the demand tells which one is better for the supply of the product. For example, lowering the price of a luxury product reduces its demand.

2.1. Social security

Different countries arrange the social expenditure in different ways. Social expenditure consist of in social services (childcare and services for senior citizens and disabled), health expenditure and income transfers (which can be insurance based or social aid). Additionally, in the Nordic countries one has to pay taxes from the income transfer, which makes taxes per GDP higher than in the other countries (Kiander & Lönnqvist 2002: 86). However, the amount spent in self-financed social security is high at the global level in North Europe. In the recent data from OECD (2007), this crucial part of social security is within the total social spending (OECD Social Expenditure Database 2007). To clarify the importance of self directly paid securities, one should consider especially the United States, where the private sector provides the biggest part of social securities, such as pension security and health care. Kiander and Lönnqvist (2002: 87) explain that the total spending on social securities is 20 % of GDP in every developed country, when one acknowledges the private social securities. One can see the same result in OECD's data set, which gives amounts used until 2003. Chapter 5 discusses additional aspects of this data.

Yet, social security has a purpose in income distribution in North Europe. The Nordic Countries have pulled ahead in equality in comparison with the other European countries with a smaller public sector. One can see this for example, in women's participant rate in work force. In Scandinavia, women have the possibility to work, because daycare for children is comprehensive. However, in Spain, the immigration has lowered the wage rates making the daycare cheaper. Actually, the lower wage rate has partly forced women to work, when the husband is no longer earning enough for the whole family. Clearly, this does not add any welfare to the discussed family.

Given the previous discussion we will take the term "social security" to mean preparation to any reason for not working (i.e. recession, sickness and pension). From basic microeconomics, we know that people are risk averse and thus value constant income. Therefore, social securities are important for every citizen.

2.2. The Competitiveness of Countries

One can define the competitiveness of a country as an ability to attract firms with an efficient working environment. Such firms can increase the marginal revenue per person in the country. In the smooth (tax free, competitive market) world, the wage rate equals the marginal revenue of a worker. This makes a clear welfare impact on the country, if the firm chooses to expand in this country. Nations also compete for the proficient employees that can pay high taxes from their high salary. However, one should remember that countries do not compete as directly as companies do (Rouvinen 2005: 33), because the country provides business environment, which is much more than the tax rate, public schooling and steady political environment.

Rouvinen (2005: 32) proposes the following for the definition of country's competitiveness: nation's competitiveness is the welfare and its growth rate for present and future citizens. Yet IMF (2008: 9) defines competitiveness being the ability of the economy to utilize even more integrated international environment for a higher standard of living. However, IMF's definition might turn out to be irrelevant within ten years as the integration becomes self-evident. That is why it is unusable in the medium long run.

Competitiveness indices of both IMF and WEF (World Economic Forums) measure competitiveness in how the growth has occurred over time. Rouvinen (2005: 45) explicates competitiveness as one feature: competitiveness is a sum of many variables. The problem with the definition of Rouvinen is the measurement of the level of welfare now and in the future. First, we should be able to measure happiness in the present. Second, we should be able to prevent what it could be later. The problem is still open for solution and we will only provide one possible way of utilizing the current competitiveness index of WEF.

3. SOUTH EUROPE

In this chapter, we will focus on the South, as there are number of factors distinguishing South Europe from the North. Firstly, Portugal, Spain, Italy and Greece have contracted debts for a long time, and for them, saving their banks during the financial crises was too expensive. Secondly, Kiander and Lönnqvist (2002: 36) argue family's support compensating the weak housing benefits and the low unemployment benefits in the South. Young adults live with their parents longer in the South, because of the more expensive housing than in Scandinavia where the state provides support for paying the rent. As a result, the family living together in the South consists of people from many generations with even the elderly living under the same roof. In the traditional family, women take care of the children and partly of the elderly. In Middle Europe and the South, the women's participation rate in the work force is less than in the North, although the rate is constantly increasing in the South.

Figure 2 illustrates the characteristics of South Europe's competitiveness. The picture presents World Economic Forum's (2009) estimation of a nation's competitiveness with twelve pillars. The best grade is seven, which in figure 2 means the outside circle, i.e. the farther from the origin the curve is, the better the competitiveness has been. The black line represents the countries at the same development level (namely innovation-driven economies), which is the same for South and North Europe. At this level, growth does not come from adoption from other countries; a nation should self-develop more high technology as it already has the highest technology available. If we are optimists, we believe that there are limitlessly new ideas, innovations and new practices, while our final limitation is at the undeniable natural resources. Believing in this assumption, we end up trusting in engineering and specializing in a small area of research. The most competitive countries should be very advanced in the chosen area of interest.

To summarize the strengths, South Europe performed in health care and public schooling roughly as an average innovation-driven economy. According to World Economic Forum's results, both Spain and Italy were better than the median in the size of markets, yet also Greece and Portugal made it to the median grade. Additionally, WEF sees Portugal and Spain at an average level in the infrastructure pillar.



Figure 2. South Europe in comparison with other innovation driven economies. World Economic Forum (2009)

In the figure, one can clearly see the weakness of Italy in all the pillars other than health and primary education, business sophistication and market size. The biggest challenges are in institutions for Italy and in innovation for Greece. In this review, Portugal is placed surprisingly well. Yet, the review does not take into account the heteroskedasticity in regions within the country. In Portugal's case, the picture most likely holds information from the areas near the capital city, Lisbon.

Additionally, the qualitative survey has high margin of error due to partly complicated language in questionnaire. When one's first language is not English, this makes

misunderstanding more likely. We should not forget the high error margin of qualitative survey.

3.1. Production and Current Account

This section discusses the production in the South from an international trade perspective. South Europe has specialized in different areas of production with different degrees of success. Italy and Portugal had losses in export markets already before 2008. In contrast, IMF (2008) concludes that Greece and Spain had managed relatively well. Portugal, Spain and Greece all had remarkable income from service exports, and IMF (2008: 1–13) argues that Italy had reached the most niche positions. This means, Italy has found many small target groups willing to pay for specialized services. Additionally, Italy had managed in quality improving, reports IMF (2008).

Nowadays, over half of world's production is in services. Still, only one fifth of the international trade is from service sector. This follows from the localized nature of services. Transporting a service is not as easy as transporting a concrete product. One produces and consumes a service usually at the same time in the same place resulting in challenges for the service export. A clarifying example is travelling from Norway to Spain for a haircut because of having to pay a significantly lower price. The transaction cost (time and money spent on travelling) limit this transaction. The transaction cost exceeds the price difference between Norwegian and Spanish haircuts.

However, some services have become possible to export, thanks to the Internet. IMF (2008) reports Spain profiting in it. Yet, Spain is still concentrated in tourism, like the rest of South Europe. Compared to the EU 15, South Europe focuses strongly on tourism in the international trade. However, there are obvious differences between the southern countries. Greece, for example, also focuses on sea traffic services, while Spain offers business and finance services via Internet (IMF 2008: 68–67).

Meanwhile, the export of South Europe is geographically more intense than the average of the world (IMF 2008: 1–13). Especially Spain and Portugal have been quite slow in capturing a share in the new markets (such as Asia). Actually, South Europe has been also historically slower in moving from one production sector to another more profitable one in comparison to the OECD countries or the rest of the European Union.

According to IMF (2008: 77 – 81), the most important import countries for South Europe are Germany, France, Italy and Spain. This goes hand in hand with the gravitation model, where the distance and size of a country define the trade partners and the amount of trade. The gravitation model explains the dominance of Germany: Germany is enormous in terms of its GDP and small distance. For Greece the most important import countries in descending order are Germany, Italy and France, while for Portugal they are Spain, Germany and France (IMF 2008: 77 – 81).

Since 1980s, the openness of trade (approximated by the resulted amount of trade) has increased notably. The sum of exports and imports as percent of GDP has increased the most in Spain and Portugal 20 – 70 % (IMF 2008: 77 – 81). The openness rate has doubled in Italy and Greece. Most Southern European countries have entered to the international markets as countries with cheap labor costs, even though it is commonly known that the most successful developed countries have succeeded with branding and utilizing the newest technology. Competitiveness indices (from both WEF and IMF) believe that low labor cost is not one of the answers to obtaining welfare. Transferring to a high labor cost country is difficult, but worth considering in the long run in the light of current knowledge.

3.2. Technology and its utilization in South Europe

As mentioned in the beginning of this chapter, the growth is in the end constructed by new ideas about better products and production that is more efficient. Since the 1990s, the growth in the developed countries has come from technology. As opposed to South Europe, the size of high technology's field in the whole Europe has doubled during the past 20 years. Portugal and Greece have the lowest share of high technology in the South Europe (IMF 2008:33).

The share of dynamical fields, where one cannot predict how will be the next year, in South had grown in 1980s and 1990s, but the share has decreased in the beginning of 2000s. For example, game and fashion are one of these kinds. IMF (2008) reminds that the share of dynamical fields in South has never been in the same level as the average of Europe. Greece, however, is heavily concentrated in dynamic sea traffic. Additionally, Italy and Portugal are focusing on high technology products in both medical instruments and sharpness and ocular appliance. Meanwhile, Spain is focusing on computers and

online services. During 1980–1990, the share of traditional specializations (i.e. tourism) of GDP decreased in South Europe. Still, the share of low technology has decreased since 1990s, when Spain and Italy made it almost to the rate of an average European country. (IMF 2008: 32–34, 68, 71–72)

3.3 Portugal

Portugal has a diverse economic history. Portugal joined to the European Union in 1980s and liberalized its markets successfully: both the living standards and the gross domestic product per person improved. Yet the growth slowed down in the beginning of 2000s. The growth in labor productivity reflects this downhill. The output of one working hour improved only little over percent during 2000–2005 when it had risen by 3 % during 1970–85 and 4 % during 1985–2000. Additionally, the unemployment rate followed the development. As one result of the drop in productivity, the unemployment rate was rising since 2000 and doubled from 4 % to 8 % during 2000–2007. (OECD Economic Surveys 2008a: 18, 26&35)

During the whole 1990s and in the beginning of 2000s, Portugal has contracted debts. However, the government managed to get the public debt down from 6.1 % GDP to 2.6 % GDP. According to OECD Economic Surveys (2008a: 43), the change happened in 2005–2007. One has to remember that changes in GDP make the debt of GDP ratio differ. Trading Economics (2012) reports, that growth rate of Portugal was between 3% and 6 % in the end of 1990s. At least partly, the greater GDP supported the smaller public debt share in the end of 1990s. In 2003, the growth rate was negative resulting in heavier looking net foreign asset position and bigger public debt in terms of market's size. Trading Economics (2012) reports a slightly fewer than 2 % growth rate in 2004–2008. In the picture 3, one can see the public debt of Portugal from 1990 to 2007.

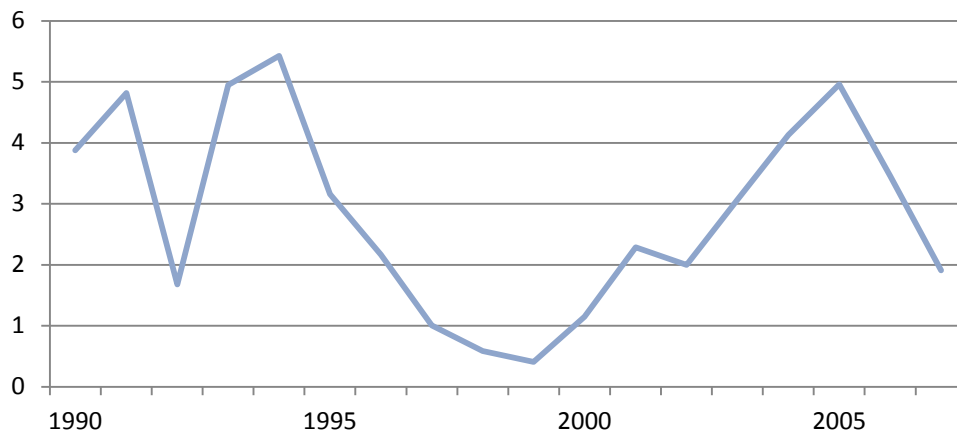


Figure 3. Public Debt in Portugal as a present share of GDP in 1990–2007. (OECD: <http://dx.doi.org/10.1787/342634764240>)

Additional specialties in Portugal are the labor market. The work participation rate in Portugal is high. According to OECD Economic Surveys (2008a), this phenomenon is explained by an unusually high participation rate of youths. This means less intangible capital accumulated for the future and so it does not serve the long run growth. However, the unemployment is most usual along the young, while they get mostly periodic employment. In Pisa research, Portugal scored weakly, but it did better in mathematics and reading than Italy or Greece. Even though Portugal scored weakly, the score did not statistically differ from the average of OECD countries, thus Portugal might still be on the average European level in primary education (OECD PISA 2009). (OECD Economic Surveys 2008a: 118,132–133)

IMF (2012) sees no significant improvement to the year 2012 in the competitiveness of Portugal. Portugal tries to improve its competitiveness via low price level and low wage level. WEF (2009: 260) regards the strict labor force provision and the red tape of government as the biggest weakness. Services make 74 % of GDP (WEF 2009–2010: 55).

3.4. Spain

Spain is very common destination for holidays. The services make almost 70 % of GDP. Yet it is in the development level of innovation driven economy as all countries in

South and North Europe. The biggest weaknesses of Spain, as a business environment, are difficulties in getting the finance and, like Portugal, labor force provision are too strict. (WEF 2009–2010: 11–12, 55, 284)

The specialty of Spain is growing population that results from immigration. OECD Surveys (2007: 22–23) regards immigration as positive force to Spain. More than one-half of GDP growth before year 2007 resulted from more labor. Yet this does not mean more GDP per person. OECD Surveys (2007: 22–23) thinks that the immigration has indirectly made the return on capital stronger. The pros are the return on capital growing more than in the Euro zone, OECD countries or in USA during 1996 – 2005. Yet cons are low development in productivity. The productivity of labor force has increased less than 5 %, when it has risen in USA 25 % and 10 % in Eurozone. On the one hand, immigration explains this; on the other hand, educational level explains this. According to OECD PISA (2010) Spain was statistically significantly lower level than the average of OECD countries in the primary education.

When considering the PISA results, it is unsurprising that R&D intensiveness is lower in Spain than the average of OECD country. Furthermore, there are fewer researchers in Spain per thousand of worker than in OECD countries on average, but Spain's researcher-worker rate is still the same as in EU15. However, the amount of patent per million citizens is low when compared with EU 15 or OECD countries. This follows from private sector's strategy that is limited in short perspective and so firms mostly copy practices from other companies. Indeed, Spanish firms adopt lots in comparison to EU 15. In other words, the growth has been mostly catching up. In result, the products are not innovative.

For example, only 40 % of firms with 10 or more employees had webpages in 2004. Only Portugal had less (30%). The percent in Italy was 45 and in Greece 50. Compared to Finland's 80 %, Denmark's 80 % or Germany's 70 %, the share of firms with web pages was relatively small in that year. (OECD Economic Surveys 2007a: 34, 39&41)

According to OECD Economic Surveys (2007a: 22-23), the immigration has approved the public sector in Spain by 0.5 % that is one-half of the surplus in the year 2005. The immigration has also lowered price level, which has made the women's work participation rate to grow by 30 %. Before the women's participation rate has risen 12, 5 % during 1996–2006. The even lower price lever has provided some advantage for Spain in the global price competition.

3.5. Italy

The advantages of Italy are the marked size, focused business and the level of health and childcare, reports World Economic Forum (2009–2010: 178). IMF (2008: 10) sees that Italy has managed well on marketing and in strategic management even though it is one of the less competitive in the ranking among the other South European countries. At the same time, the firms can set higher prices in a succeeded niche-position.

For small market positions, the competition is not as tough as the competition within the supply of standardized products. For special product, customers are more willing to pay more. The big firms mostly supply standardized products, which are undesired by the small consumer group of a possible niche. By providing standardized products, the big firms can use mass production and get access to decreasing unit costs. The combination that is not included to this mass production can be a profitable place for small firm.

Figure 4 illustrates how the export prices have developed in Italy in comparison to Spain and Germany. In Italy, the success in exports marketing and better quality had resulted in 20 %-units rise in prices during 1992 – 2006. Meanwhile, Germany's prices of exports had gone down by 14.5 %-units and Spain's prices of exports were fluctuating.

Nevertheless, why did the good development end? OECD Economic Surveys (2007b: 25) reminds that Italy's industry have enjoyed the devaluation of lira in addition to productivity development. After Italy joined to Eurozone in 1999, the inflationary spiral has slowed down (Commission 2011). IMF (2008:10) argues that Italy has switched from quantity to quality. OECD Economic Surveys (2007b: 26–27) supports this by arguing that low profit firms have not managed in Italy in comparison with high value added firms. In addition, the wage rate supports this observation

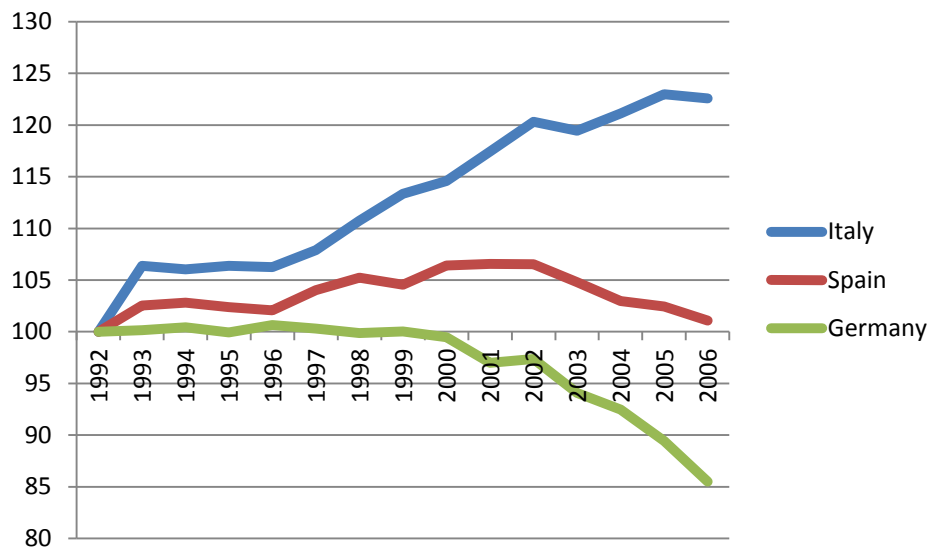


Figure 4. Italy, Spain and Germany with exports prices.

Figure 5 presents the differences in wages and in unemployment rates between Europe and Italy. One calculates the difference by subtracting Europe's value from Italy's one. It is obvious that on average the unemployment rate has been significantly higher in Italy than in Europe. In addition, the wage rate has been higher in Italy than in the rest of Europe, yet not as axiomatic as unemployment rate.

Wage rate was the highest in Italy during year 2001 and the biggest differences in unemployment rate were 2000 (2.4 % units) and 2001 (2.2 % units). Yet during the time 1987 – 2005, the highest unemployment rate in Italy was in 1997 and 1998, when the share of unemployed workers was over 12 %. Market disturbance is obviously present on the labor market of Italy. One reason for big changes in wages is high-expected inflation, which raises the demanded wages.

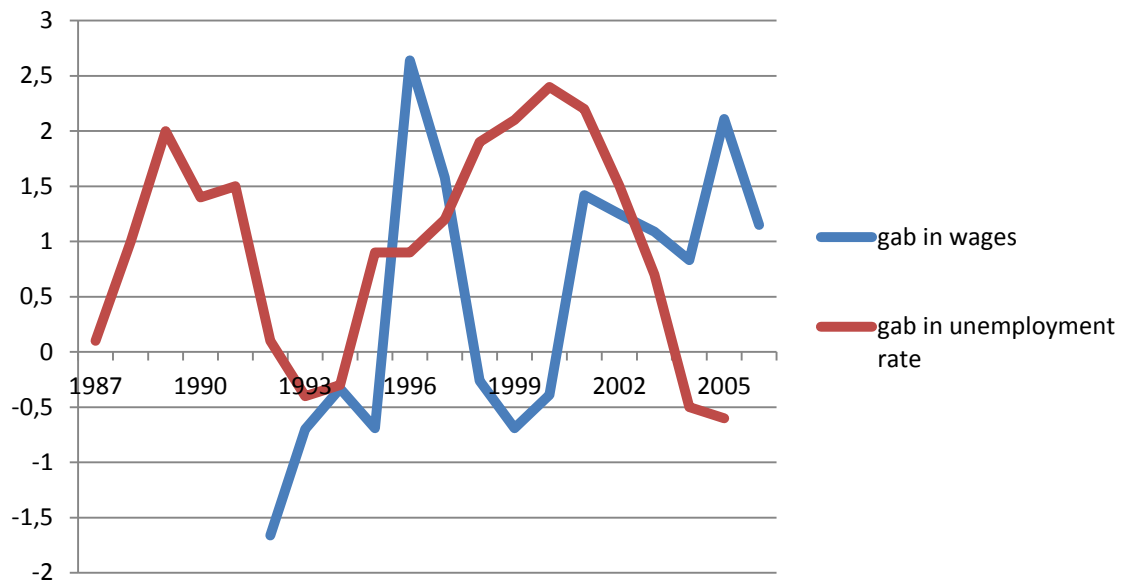


Figure 5. The differences between Italy and Europe in wages, %-units. (OECD: <http://dx.doi.org/10.1787/013328776038>)

Alternatively, the lack of educated labor may explain the unemployment rate. OECD Economic Surveys (2007b: 31) remarks that in 2004 Italy educated only one fourth of doctors of Finland's amount of new doctors and the amount of doctors in Italy is in the same level as in Hungary. Additionally, many citizens have completed only the basic education. According to OECD Economic Surveys (2007b: 31), 40 % of young adults and 60 % of middle-aged labor in 2004 had completed only basic schooling.

As the unemployment rate in Italy has been higher than in the Europe as whole (OECD Economic Surveys 2007b: 22), it is not surprise that GDP growth between 1995 and 2005 has not been as high in Italy as in the rest of Europe. At least the price of luxury products in world market has been rising (OECD Economic Surveys 2007b: 27). However, the higher price of exports compared to price lever in home country puts stress on prices in home markets and on wage rates. This may have been one reason of lower competitiveness in these days.

3.6. Greece

Greece is better than the average developed country only in market size, according to WEF (2009–2010: 156). For example, the Greek markets are bigger than the Finnish one. WEF describes inefficient bureaucracy as the most problematic factor in Greek business environment, as one fourth of respondent in the inquiry of WEF find it inefficient. Respondents find also corruption and strict labor market provision as enervating factors (WEF 2009–2010: 156).

Especially the unemployment of young adults and those returning to the labor market is high. The unemployment rate is, according to OECD Economic Surveys (2007c: 85–86), one of the highest in the OECD countries. The government has not set up a minimum wage, yet there is a wage limiting the whole economy. Mostly the young suffer from this, meanwhile the wage distribution is enormous (OECD Economic Surveys 2007c: 89). In sum, high unemployment rate and high cost of dismissal limit the growth in Greece, which results in meager hiring.

IMF (2008: 34) specifies Greece as the South European country with the smallest high technology industry. In Greece, the sea traffic is dominating. Still, IMF (2008: 69–70) continues saying that Greece has managed to improve profits in service industry better than the other South European countries from 1995 to 2006.

As many European countries, Greece has *pay-as-you-go* system in pension (Kiander & Lönnqvist 2002: 134). The costs of elderly are high as they live longer than expected. Yet many have retired before age 65, which burden the weak system even more (OECD Economic Surveys 2007c: 67–68).

Additionally, tax avoidance challenges the government. Government loses not only the income tax but also the capital gains tax, when a job is performed under the table, (cf. Nupponen 2011). Another possibility in Greece could be financing by inflation, yet as part of Eurozone and with free capital flows, this is impossible without a big loss in the competitiveness of Europe. Lewis Nathan (2011) would not call the crises in Europe as Euro crises, because Euro is current money. Lewis (2011) also notes that Los Angeles had same problem, yet no one suggested Los Angeles to leave the dollar. Additionally one should keep in mind that there are more unsuccessful repayment programs than successful ones (exclusive Sweden and reparations in Finland after the war).

4. NORTH EUROPE

The classification of Esping-Andersen specifies the Nordic countries as very homogenous welfare country group with high trust on the other citizens. OECD Economic Surveys (2008b: 20) describes the trust in the Nordic countries to be substantially richer than in other countries. At the same time, the total tax ratio is very high, because the state insures every citizen against both sickness and unemployment. The most distinguishable sociological feature is *from cradle to grave* principle (Kiander & Lönnqvist 2002: 37).

One criticizes this principle for decreasing the savings rate as government insures everyone and everything. The country transfers the money from another household, and so there will not be any provision savings. On the other hand adding human capital into savings would raise the savings rate notably. Kutzbetskin (1971:77) describes education and on work training as an investment with the opportunity cost of spending work hours in it.

The reallocation of income is a central aim in welfare politics, from this follows the higher total tax rate reflects than a tax rate covering only the pure costs of welfare state. According to Kiander and Lönnqvist (2002: 97–98), the aim is to reallocate income between households and between the lifespan of individual. Taxation covers income transferences, from which one pays tax again. This raises the total tax rate more in comparison with other nation groups. Additionally, reallocation between households results from the free education.

One should educate oneself and work hard, if one wants a better income than the amount of income transfer. Yet, entrepreneurial activity can be uncommon because of employee's higher legal standing, which makes enterprise less productive choice to the individual citizen. Additionally in the given tax rate, accumulating enough capital for own firm takes a long time.

Nevertheless, only way to become rich is via entrepreneurial activity. In the Nordic countries, there is some small-business activity, although the other country groups have it more. Additionally, Sweden and Denmark have been good examples of combining the high employment and providing unemployment benefits. In any case, the depression in 1990s showed that the system is incapable of supporting a long lasting and high unemployment rate. (Kiander & Lönnqvist 2002: 147–148)



Figure 6. The Nordic Countries with other Innovation-driven Economies. Source: World Economic Forum (2009)

As opposite to South Europe, North Europe has obvious competitiveness in many of the 12 pillars of WEF (figure 7). Sweden and Denmark provide better business environment than the average innovative-driven country, even though the market size is at the average level only in Sweden. Goods market efficiency is at the median level in Finland and in Norway whereas in Sweden and Denmark it is better than the average. In labor market efficiency, Denmark is dominating the North Europe in 2009.

WEF (2009) observes that North Europe, and especially Sweden, is clearly better than the average in technological readiness. The North has also succeeded in innovation, where only Norway is at average level. As figure 7 presents, WEF (2007) did not find the same kind of growth potential in Norway as in the rest of the Nordic countries, who

had training in university and education itself as a comparative advantage. Overarching factors in figure 7 were strong institutions and macroeconomic stability.

North Europe refers to Denmark, Finland, Norway and Sweden, because also Iceland is part of the Nordic countries. Yet, Iceland is not part of Europe that is why it is not with in the comparison. We can conclude that the North has a comparative advantage in macroeconomic stability, strong institutions, higher education & training and technological readiness. Additionally, especially Finland and Sweden are very innovative.

4.1. Finland

Finland specialized in telecommunications during 20 years and changed in 1990s from adapting society into technology developing. Gerd Schienstock (2004: 23) argues that the specialization in telecommunication was one-sided choice and offered a big risk with high-expected growth possibilities.

In the future, the even longer expected lifetime and low birth rate make the *pay-as-you-go* system unbalanced. The good part is that the government has raised the amount of fund, when the big age group was working. There are estimations in which the change in age structure is significant after 2020.

In PISA, Finland is better than the rest of Nordic countries. Other special aspects are conscription and wars in immediate history. After wars, Finland has caught the developed countries. Today, WEF (2009&2010) finds the high tax rate and strict labor provision as the most restrictive factors in business. In both years, 20 – 25 % of the respondents mentioned them. In 2009, 18 % of respondents mentioned receiving finance and 13 % mentioned the tax statute. However, 13 % of respondents in 2010 find the tax statute as a hindering factor.

Rouvinen (2005: 36) remarks, that the working time in Finland is at a high level only when compared to general working time in Europe. To catch up USA and Asia, one should start working on Saturdays. Rouvinen (2005: 36) proposes also that the low rate of working time in Finland makes GDP per capital lower. While IMF and WEF have rated Finland as one of the ten most competitive in 2000–2005, Rouvinen (2005) finds ranking too good considering the ranking of Finland in GDP per person: 15–20.

4.2. Sweden

In Sweden, the policy has been growth oriented and liberal. Corruption is uncommon and it is typical to trust in fellow citizens (OECD Economic Surveys 2008b: 20). The government has preferred full employment policy emphasizing higher employment rate than the rest of North Europe. Kiander and Lönnqvist (2002: 148) argue that this has strengthened the welfare state and the economic growth. Employment rate is internationally high, as the women participate actively in the labor force.

Additionally, early retiring is uncommon in Sweden as opposed to the most of developed countries, while the general working time per person does not exceed the average of OECD (OECD Economic Surveys 2008: 33). In other words, the economy allocates work more widely in Sweden. Citizens have adapted to the tax rate in respecting leisure in addition to the salary. This is an optimum, as one does not have to pay so much tax with lower income and have leisure. This is visible in longer maternity leaves and more months of days off. Additionally, another citizen gets a job. However, this is more costly to the firms resulting in a slight disadvantage for Swedish competitiveness.

OECD Economic Surveys (2008a: 18) criticize Sweden for internationally high unemployment along the young and the immigrants, who are usually less educated. Moreover, there are long-term unemployed from the economic meltdown in 1990s. Yet according to OECD Economic Surveys (2008a: 35), it is likely that the immigrants do not participate in labor markets as actively as the local population in Sweden.

Because of the big size of public sector, tax rate is high. Figure 8 illustrates the tax rates in Sweden, Denmark, Finland and EU15. Sweden has higher tax rate than Finland, who has higher tax rate than EU15. Sweden taxes roughly as much as Denmark. Especially after 1994, Denmark's tax rate has been almost the same as the Swedish rate. The taxation has been approximately one-half of GDP in Sweden, where as it is been 40 % in EU 15 during 1985–2007. Alternatively, taxation is good thing, if that prevents the excessive indebtedness.

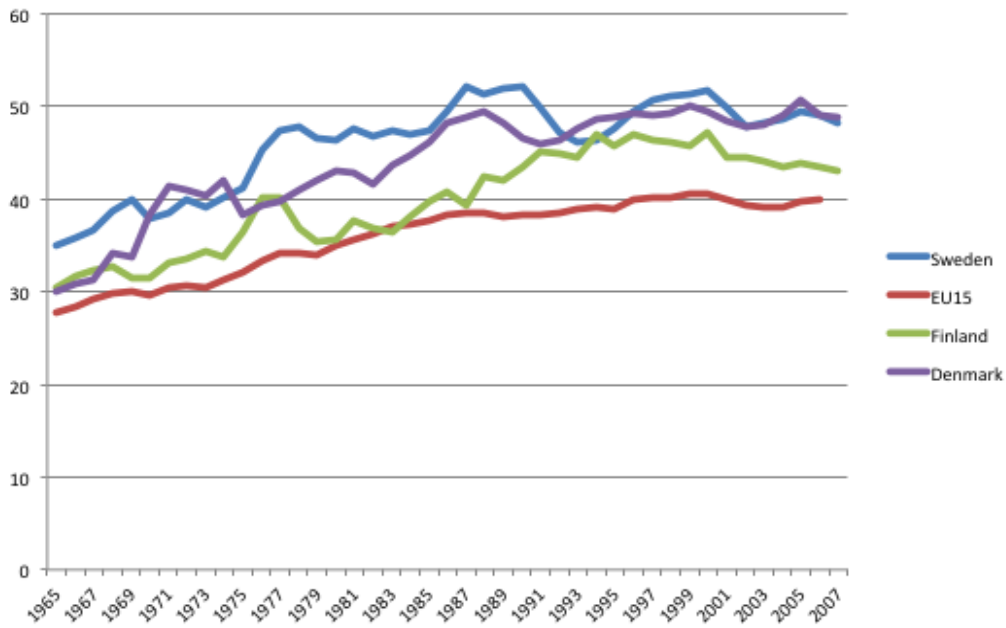


Figure 7. Taxation in Sweden. (OECD: <http://dx.doi.org/10.1787/485340448136>)

Sweden's taxation has been very high, yet Sweden has paid back the government debt during the 2000s. Nevertheless, Auerbach, Kotlikoff and Willi (1999: 397–398) argue that tax transfer system is one of the most confusing in the world. They also note that the transfer system does not implement parity between the generations, when observing the net taxation over the lifetime. One has to pay more taxes than one gets back from the government because of slantiness in the pension scheme.

4.3. Norway

The specialty of Norway is the oil resources. Norway has founded Sovereign Wealth Fund (SWF) to save some capital for future generations and to smooth production shocks in energy industry over time (OECD Economic Surveys 2008c: 28). The value of the fund was ~ 90 % of yearly GDP in 2008. When one gets higher revenue from oil than from its processed product, there is no reason to produce for exports. This is why the fund allocates the revenues abroad, in order to keep exchange rate and price level enough low so that also other than oil industries can make a profit in Norway.

The price level is high and the immigration to Norway has been hefty (OECD Economic Surveys 2008c: 72–73). Especially real estate prices have doubled in Norway from 1980s to 2000s (OECD Economic Surveys 2006: 132). However, the most likely explanatory factor is insufficient construction.

Even though Norway has property, it still faces the same kind of problems with labor force as the other OECD countries. The population is ageing, the costs of welfare state being already high like in the other Nordic countries. However, OECD Economic Surveys (2008c: 65) records high work participation rate (73 %) and lower unemployment rate than in other OECD countries on average (2.1 % in 2007).

Norway is generous in the sickness compensation. Auerbach, Kotlikoff & Willi (1999: 369, 371) describe, how the sickness is covered from the first absence day in Norway when Sweden has raised the deductible. The Norse have generally accepted, that after the natural resources (such as oil and gas) are dried up, Norway will become like the other Nordic countries, tough with SWF (OECD Economic Surveys 2008c: 35).

The educational level of adults has been high in Norway, yet the results of PISA are falling even though spending in education is increasing (OECD Economic Surveys 2008c: 35, 92). Norway invests notably more money per students than the other countries emphasizing the length of the way to school (OECD Economic Surveys 2008c: 98). In 2000, Norway was in the middle class in OECD countries, yet in 2006, Norway was under the average of OECD countries.

4.4. Denmark

The current account of Denmark has been positive 1995–2005, yet not as strongly as the other Nordic countries' current accounts, which have been at their best 8 % of GDP. However, Denmark survived best from the economic meltdown in 1990s, when its current account was 3 % of GDP at its best. Meanwhile, the average of other Nordic countries was 2 % of GDP. Additionally, the net borrowing of Denmark had smaller variance than the variance in net borrowing of other Nordic countries. However, Denmark paid back the government debt in 1980–1985 (at its best over 10 %). At the same time, the unemployment rate was higher than the average of Nordic countries 1980–2005, but it was lower than in the Eurozone. (OECD Economic Surveys 2006: 21)

According to OECD Economic Surveys (2006: 138), the labor markets and product markets are flexible. Yet, rent markets have many provisions, which support the demand of flexible owner-occupied flat. The price of flat has risen 60 % during twenty years before 2005. OECD Economic Surveys (2006: 132) finds the inefficient use of land contributing to the price rise.

The aging of population affecting the developed countries challenges also Denmark. Yet, Denmark has lowered the incentive of staying in the workforce. The voluntary pension system enables retiring early. At first, the system was meant to those in physically demanding jobs. Additionally, the level of the benefit was first so high that staying at the job was not profitable as the total pension reduced. In the statistics of OECD Economic Surveys (2006: 64–68), the unemployment of 57–58 years old citizens is higher than the unemployment of 50 years old. It is also higher than the unemployment of 57–58 ages in Finland as well, even though Finland has the elderly unemployment peak during the same ages. After the peak, the unemployment returns to the level of the 50 years old in Denmark. There is no significant drop. Meanwhile, in the other Nordic countries the unemployment rate drops afterwards. OECD Economic Surveys (2006: 64–68) explains that the unemployed elderly usually retire in other Nordic countries, while the employed ones tend to stay in the labor markets.

5. STATISTICS OF SOUTH AND NORTH

This chapter provides a statistical outlook into the comparison of the North and the South. First, we discuss a crucial part of Competitiveness Index, namely the survey. Then we move on comparing the rankings between the South and the North.

World Economic Forum (2005: 216) use indices were one is the lowest and ten is the highest value. The index has significant variation in the survey responses per country. In some cases, the value of index is very small for some respondents, resulting in a margin of error being bigger than 5 %. It is thus possible that randomness is dominating the results.

From the perspective of South and North Europe, Finland provided the fewest responses (36) in 2005 and Italy most (141) in the survey part of competitiveness study by WEF. In addition, Sweden (44) and Portugal (42) had few responses compared to Italy. In 2009, Sweden had 38, Denmark 49 and Finland 53. Spain got the most, namely 103. Lack of responses is an important issue in other parts of the globe. In 2005, the smallest number of responses was slightly over 20. In 2009, that number was already over 30. Therefore, we can conclude that the statistics of South and North are more reliable than in other parts of globe. As Rouvinen (2005: 44) argues, the margin of error in ranking in competitiveness index is approximately from five to ten ranks and concludes that one has to remember the results being just directional. Table 1 summarizes the ranks and scores of North and South Europe.

In order to get ranking and score for a country group, one has to do some calculations. In (arithmetic) mean, the extreme low and high values dominate more than the middle numbers that we are interested. We obtain middle value of rankings through median. As the score numbers do not differ from each other as much as ranking, the arithmetic mean gives a good approximate of middle result. Table 1 reports the median for ranking and mean for scores.

Table 1. The Nordic countries and South Europe in The Global Competitiveness Index.

	Ranking			The Value of Index (Score)		
	2005	2009	2012	2005	2009	2012
Finland	1	6	3	5,94	5,43	5,55
Sweden	3	4	4	5,65	5,51	5,53

Denmark	4	5	12	5,65	5,46	5,29
Norway	9	14	15	5,4	5,17	5,27
North Europe	3,50	5,50	8	5,66	5,39	5,41
<i>Standard deviation</i>	3,40	4,57	5,92	0,22	0,15	0,15
Portugal	22	43	49	4,91	4,40	4,40
Spain	29	33	36	4,8	4,59	4,60
Greece	46	71	96	4,26	4,04	3,86
Italy	47	48	42	4,21	4,31	4,46
South Europe	37,50	45,50	55,75	4,55	4,34	4,33
<i>Standard deviation</i>	12,46	16,09	27,35	0,36	0,23	0,32

As one can see in table 1, all the countries in North Europe have been among the 15 most competitive according to WEF (World Economic Forum 2005, 2009 and 2012). The competitiveness of North Europe has though decreased in comparison to other world over the time. The competitiveness of South Europe has declined more clearly than that of North Europe over the period covered. One reason is the problems of Greece.

The Greek business environment is no longer the 46th – it is 96th. In 2009 and 2012, the most competitive country in South Europe was Spain. Italy is an exception in the South: its score is the only one that has slightly improved. Italy has made clear improvement and was ranked 42th in 2012. The score of both Spain and Norway have fluctuated, first decreasing and then increasing a little.

During the financial crises, within the groups studied the standard deviation has increased in ranking, yet decreased in the scores from 2005 to 2009.

If one wants to compare the standard deviation of different samples, one should calculate the variation multiplier by dividing the standard deviation by the mean. The variation multipliers of North Europe are 3 % (2009) and 4 % (2005). For South Europe, the multipliers are 5 % (2009) and 8 % (2005). Clearly, the dispersion is bigger in South Europe than in the Nordic countries. This is no surprise: Nordic countries are a very homogenous group. An interesting research subject would be how Finland has made it into top three and how Sweden has managed to stay in top five. This is however beyond the scope of this research.

Table 2 presents the budget balances of Nordic countries and South Europe in 2004 and 2008.

Table 2. Yearly budget balance over GDP, %.

	2004	2008	Δ
Norway	11,5	18,8	7,3
Finland	1,9	4,1	2,2
Denmark	1,3	3,0	1,7
Sweden	0,7	2,5	1,8
Spain	-0,3	-3,8	-3,5
Portugal	-2,9	-2,6	0,3
Italy	-3,0	-2,7	0,3
Greece	-6,1	-3,7	2,4

WEF reports in table 2 above the budget balances as percent of GDP making comparison over time more challenging, as there are significant changes in GDP during the financial crises. Still, one can see that every country (excluding Spain) has experienced an increase in public spending surplus relative to GDP until 2008. South Europe has remained in public deficit, while until the financial crises the Nordic countries have paid back the debt or saved for the future's challenges. From representative consumer model, we know that countries with aging population should be saving for covering the pensions.

In figure 9, the savings rate is from 2004 and 2008. The savings rate consists of both public and private savings.

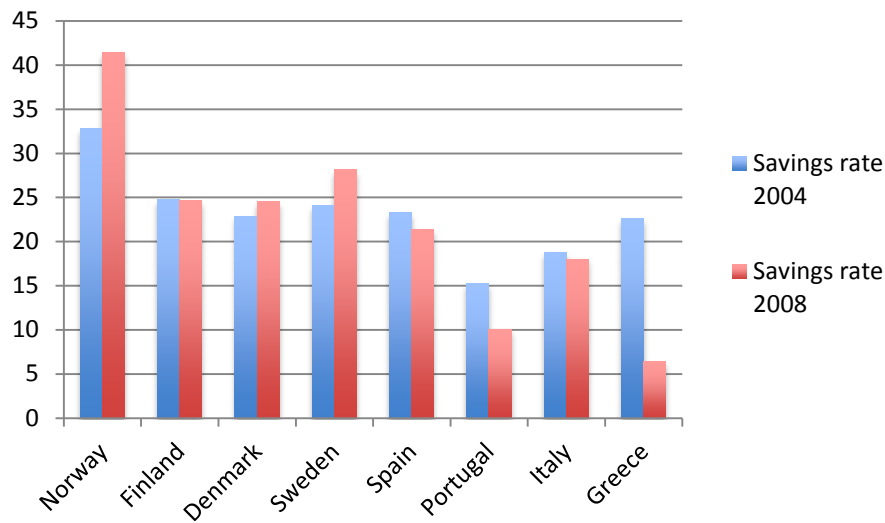


Figure 8. Savings rate as present units of GDP.

In macroeconomics, the optimal savings rate is often considered 20 % in the developed economies. Savings that are more than 20 % of GDP tend to result in ineffective investments, as the stock of capital become out of date or wear out. This means, maintaining the stock needs more investments than the rate of return.

On the other hand, one should proportions high savings rate to the demand of loans and funding. Before the financial crisis hit to Europe, the savings rate was clearly over 20 % in the North. Meanwhile, in the South the public debt depressed the nationwide savings rate. Still, the savings rate of the South was positive, as it should be according to representative consumer model. Additionally, the savings rates of Spain and Greece were relatively competitive in comparison to the median of the Nordic countries presented. Although one should note, the data lose a part of savings according to Zucman Gabriel (2012), who shows that a significant amount of savings ends up to tax heavens in Europe. Additionally this data do not yet record investments in intangible capital. Thus, the figure is missing education, marketing and product development and savings in the tax heavens.

At the same time inflation was, according to WEF (2005&2009), 0.1 – 1.1 % in North Europe and 2.3 – 3.2 % in South. Finland had almost deflation, as the inflation was only 0.1 %, which strengthens motivation to save. The low inflation rate has meant that the real return has been higher than in South Europe. The development of savings rate in the

South was the opposite of North Europe, where the rate grew. Only in Italy the savings rate grew by 0.7 % of gross domestic product.

In the Global Competitiveness Report, there are also qualitative factor about access to loans. Yet, when comparing results from 2005 and 2009, one must be careful. In 2005, the worst mark in inquiry stated that it was impossible to get a loan. The best mark stayed for easy to get funding. Yet in 2009, the range was from very difficult to very easy. This kind of disparity is common. WEF has tried to make inquiries easier to understand for non-native English speakers. As a result, the conclusions presented from more than one survey have bigger marginal error than one survey has by itself.

Table 3. Rankings in access to loans in the competitiveness index of WEF.

	2005	2009
Finland	1	3
Norway	8	6
Sweden	14	11
<u>Denmark</u>	<u>3</u>	<u>12</u>
Spain	34	51
Portugal	17	52
Greece	29	58
Italy	73	118

Finland was the easiest country to get loans in 2005, according to the Global competitiveness index of WEF. Finland stayed in the top five in 2009, when Denmark's ranking dropped from top five to top fifteen. Norway stayed in top ten, while Sweden stayed in top fifteen. Only in Finland and Norway, the survey gave access to loans as strengthens. Additionally, only Norway and Sweden got slightly better ranking than in the year before.

Before the financial crisis, Portugal was quite close to North Europe as it placed in the top twenty. Only Italy was clearly far away from others. In 2009, the difference was even clearer. Spain, Portugal and Greece were on top sixty and Italy did not make it to the top 100.

5.1. Social Expenditure

The total social securities are approximately same size in every country, when one perceives the private social expenditures. Citizens pay for both public social security and voluntarily the private social expenditure. Yet in some countries, a part of private social expenditure is compulsory to have. These compulsory ones are adding the public social safety and welfare, but the companies are providing the security service instead of the nation.

Usually private compulsory social expenditure is the missing value in the data of OECD (2007), even though they are services of the public sector outsourced to private sector. Because of this, one cannot approximate the total social expenditures with public spending directly from the data.

Yet, the data has the voluntarily private social expenditures reported. Given that the level of social security is generally in the same level, one can approximate the need to widen nation's provided security. Hypothetically, the Nordic countries should have less voluntary private social expenditure as they already have from cradle to grave principal in action in North Europe.

According to the social security database of OECD (2007), the share of social security expenditure has been larger in North Europe than in South Europe and it has been growing since 1992. Additionally, the standard deviation has grown from 0.4 to 0.7. Yet, the standard deviation of South Europe has been fluctuating between 0.8 and 1. In 2003, Norway had 1 % of GDP in private voluntarily social expenditure, while Sweden had 2.4 %. At the same time, Greece had most and fewest private social securities.

In North Europe, the biggest increase in private social security expenditure was 1992–1993, when Finland had recession and the private social security expenditure growth by 0.5 % of gross domestic product. Meanwhile, Sweden's expenditure grew by 0.7 % of GDP and expenditures of Norway stayed the same.

At first, the comparatively large private social security expenditure rate in the North may seem to be inefficient. Yet, the last recession proved that the welfare system is incapable to handle simultaneous crowd unemployment. Additionally, private saving for pension has had good inducements to help with public pension system's slant.

Figure 10 illustrates the adjustments of the total social security expenditure of country groups. These include all available expenditures of OECD (2007) social securities database. As mentioned, the mandatory private social security expenditures are missing from many countries. Health, elderly, unemployment benefits and other social

expenditures are reported as present of GDP. Education and schooling are not included, which lowers the social expenditure in the Nordic countries.

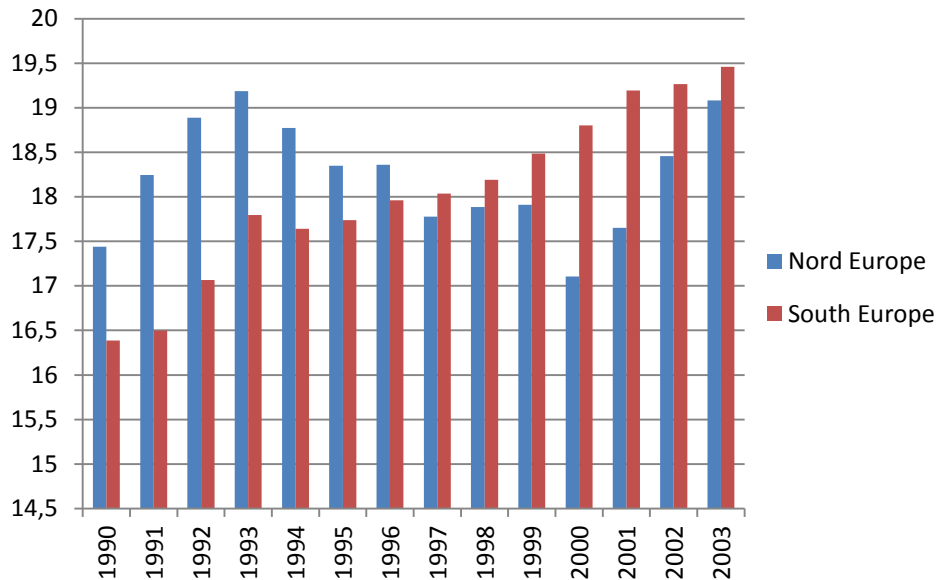


Figure 9. Total social expenditure without the private sector's mandatory ones (percent of GDP). Source: OECD: www.oecd.org/els/social/expenditure

The amount of social security in North Europe is fluctuating during 1990–2003. The expenditure follows the amount of unemployment. The highest peaks are during recessions, when the yearly GDP is low and there is higher unemployment than usually. As opposed to the North, the South's the trend is emergent.

The exception in South Europe is Italy, where all total social security expenditures are documented 1990–2003. Figure 11 presents more precisely the trend of Italy, which is not like the others in South Europe. Italy has actually no trend as the expenditures share of GDP has been between 20 and 22 % of gross domestic product. From 1990 to 1993, the progress was like in the rest of South Europe. The social expenditure grew. Yet from 1994 to 1996, the social security expenditure's share was falling. Then the expenditures have been growing (except in 1998) to the year 2003. Still, the level of social expenditure was the same as in 1992 or 1993.

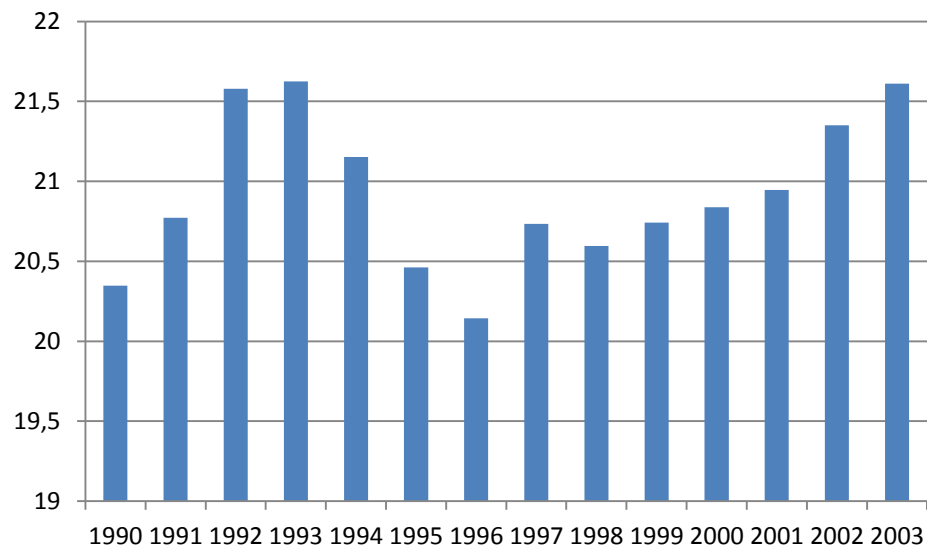


Figure 10. Total social expenditure of Italy. (OECD: www.oecd.org/els/social/expenditure)

6. COMPETITIVENESS INDEX AND GROWTH

There have been discussions about the trustfulness and statistical significance of Global Competitiveness Index. This chapter provides a new examination with data from 2005 and 2010. First, we discuss the features of the data. Second, we discuss the econometrical interpretation of the growth prediction in competitiveness context. In other words, we compute the growth model using the competitiveness index. After defining the model, we then use it for comparing the South and the North.

The data is from two Global Competitiveness Reports 2004 – 2005 and 2009 – 2010. Additionally, the production side inflation is from World Bank. The GDPs are from years 2004 and 2009, because the Global Competitiveness Index used these. The limitation in the data collected is that the rankings 2004 – 2005 and 2009 – 2010 have partly different countries leaving 115 countries for the estimation. In this research, the scores of the index explain growth of real gross domestic product.

We use score instead of ranking for two reasons. First, with score we get rid of ordinal scale. Second, Rouvinen (2005) notes the ranking being sometimes different even though they had score of the same value. Rouvinen (2005) finds that The Global Competitiveness Index correlates slightly with the current level of GDP but not with the future level. Additionally, Rouvinen (2005) criticizes the error margin in the survey part of Global Competitiveness Index that stays also in the scores. In this thesis, the panel regressions have more explanatory variables than only the score in order to correct the effect of possible errors in the survey.

Table 4. Variables.

Variable	Obs.	Mean	Std. Dev.	Min	Max
Score 2004	114	4,00	0,86	2,37	5,94
Real GDP	228	239647,2	1009900	7,00	12700000,0
Savings rate	229	22,33	10,55	-3,20	61,30
Capital	230	0,86	2,42	-6,48	7,19
Life expectancy	230	69,97	10,18	36,00	83,00
Exports share of GDP	230	47,91	32,91	8,10	234,30
Changes in:					
Capital	114	3,36	1,08	1,92	8,29
Government debt	114	-0,33	0,64	-2,37	2,13

In estimation with country cases, panel regressions are preferred, because a panel supports more individual heteroskedasticity and is effectual in estimating changes (Babi Baltagi: 2007: 4, 6). As described in chapters 3 and 4, there is a lot of variation between countries – even within the sociological group of welfare state. This feature suggests the use of panel regression.

Barro (2012: 3-5) summarizes the disadvantages of inclusion and exclusion of country fixed effects in panel regressions. He presents that there is a tradeoff between two forces. Barro (2012:4) points out that exclusion of fixed effects usually biases the effect of past GDP to be higher. However, samples that are small in time dimension suffer in the fixed effect estimation resulting in a lower convergence rate. Barro (2012:5) points out that fixed effect panel regressions are also likely to bias other explanatory variables. As one can see in the table 6, capture growth is present in generalized least squares model, where one explains change in GDP. As one does not benefit adding more frequency between the observation period (Barro 2012: 4 & 19), it is unbeneficial to estimate in this data with fixed effect.

As discussed in theory, the level of gross domestic product affects the growth rates. This is one of the aspects in the index and so omitted in scores. GDP roughly approximates welfare; it gives a picture of market size and consumption possibilities. In this estimation, government debt is in percentage of GDP in the given year.

Table 6. Explaining the level of GDP and the change in GDP.

Variable	OLS		GLS		RE	GLS		
	log(GDP)		log(GDP)		log(GDP)	d1.log(GDP)		
Log(score)	6.016	***	2.769	***	4.210	***	0.272	***
	(0.298)		(0.0396)		(0.392)		(0.0683)	
Government debt	0.003	*	-0.002	***	0.007	***	-0.002	***
%GDP	(0.00171)		(0.00033)		(0.00165)		(0.00031)	
Log(Capital)	0.808	***	0.954	***	0.823	***	-0.042	***
	(0.0243)		(0.00400)		(0.0198)		(0.00324)	
Savings rate	0.010	*	0.009	***	0.017	***	0.008	***
	(0.00575)		(0.00097)		(0.00571)		(0.00054)	
Constant	0.115		5.272	***	2.243	***	2.545	***

	(0.424)	(0.0755)	(0.562)	(0.0644)
Wald Chi		102265		14429.6
R squared	0.91		0.89	
Number of obs.	227	222	227	111
legend:	*p<.1 **p<.05***p<.01			

Table 6 illustrates four models. The first one forecasts the level of GDP with ordinary least squares (OLS). Second model uses general least squares and third model uses random effect (RE). Last one explains the change in GDP with the same variables as previous models.

In the OLS model, logarithm of score and capital are highly significant (1 %) explanatory variables. Government debt and savings rate are significant at 10 % level. Estimation corrects robustness, leaving the R squared to 91 %. In other words, the model explains 91 % of the phenomenon, yet the number of explanatory variables lifts the reported R squared. According to OLS model, one percent higher score correspondences on average in 6 % higher level of GDP. The confidence level of the effect of 1 % higher score, with 95 % certainty, is between 5.5 % and 6.6 %.

GLS model explaining the level of GDP considers autocorrelation while running heteroskedastic panel estimation. The Wald chi is high (102265) and its problem value is zero, suggesting that the explanatory variables together explain the level of GDP. Additionally, every explanatory variable explains growth in 1 % error margin. According to GLS model, percent change in score should result in 2.8 % higher GDP. With 95 % confidence interval, the effect of 1 % more score should lift GDP at least 2.7 % and 2.8 % at the most. This model also gives a negative coefficient to government debt. If a country amortize one percent in government debt share of GDP, that should be visible, with 95 % certainty, in 0.24 – 0.11 % higher level of GDP. Likewise, cumulating more debt cuts the level of GDP -0.17 % on average. Additionally, it is worth noting that the coefficient of the constant term is relatively high (5.3) and its standard deviation (SD) is considerably small (0.076), 1.4 % of coefficient.

Random effect model (RE) reports one percent rise in score to result in 4.2 % increase in the level of GDP with 95 % confidence interval from 3.4 % to 5.0 %. Standard error is 0.39, which is 9.3 % of the coefficient's value. RE suggest a small positive effect (0.7 %) of an increase in debt by one percent. All explanatory variables are significant at the level of 1 % Wald chi is high again, namely 2712.8 and its problem value is zero. R squares are relatively high, within 95 %, between 87 % and overall 89 %.

The fourth model explains the change in GDP (i.e. growth rate) with levels of explanatory variables using panel generalized least squares estimation. Wald chi is high (14429.6), with zero problem value and all explanatory variables are statistically significant at level of 1 %. Estimation considers no autocorrelation, as this model sees only one period, because of calculating the change in GDP. The model forecasts capture growth in the coefficient of logarithmical capital. The coefficient is -0.042 meaning that less capital-intensive economies grow faster. A country having one percent more capital will grow in the rate of 4.2 % less than the compared country.

However, the capital share of GDP in 2012 was comparatively the same across the North and the South. The capital share was 19 % in Finland, 25 % in Norway, 19% in Sweden, 18 % in Denmark, 20 % in Spain, 18 % in Italy and 16 % in Portugal but only 14 % in Greece (The World Bank 2013).

Next, we estimate the growth and the level of GDP with Barro's (2012) suggestion of having dummy variables for all countries. The addition of many explanatory variables, however, takes too many degrees of freedom from this data. Therefore, estimations Group1 and Group2 run a panel regression with the North, the South and the rest of Europe dummy variables. The rest of world is omitted variable. In this way, we get some heteroskedasticity into explanatory variables while saving degrees of freedom. The standard deviations are in parenthesis.

Table 7. GLS estimations explaining GDP growth, GDP level with region dummies.

Variable	Group1		Group2	
	d1.log(GDP)		log(GDP)	
Competitiveness index	0.520 (0.0357)	***	5.163 (0.229)	***
Government Debt over GDP	-0.003 (0.00037)	***	0.005 (0.00114)	***
Capital	-0.240 (0.00906)	***	0.827 (0.0126)	***
Savings rate	0.005 (0.00094)	***	0.017 (0.00350)	***
South dummy	0.097 (0.0312)	***	1.184 (0.249)	***
North dummy	-0.524 (0.0287)	***	0.369 (0.212)	*
Rest of Europe dummy	-0.112	***	0.637	***

	(0.0159)		(0.0669)	
Constant	2.103	***	0.945	***
	(0.0717)		(0.293)	
Wald chi	1899.09		7632.39	
Number of obs.	112		227	
Number of groups	112		116	

Capital, competitiveness index (scores) are logarithmic. In region dummies, reference is the rest of the world.

Estimation in column Group1 explains the change in GDP in years 2005 – 2010 using a heteroskedastic panel that covers 111 countries. Explanatory variables are from the initial year 2005. The value of Wald chi is zero and the country dummies are significant at the level of 1 %. The coefficients include capital, which has negative coefficient and confidence interval is entirely on negative side (from -0.26 to -0.22). Additionally government debt share of GDP has a negative effect on the growth rate of GDP. One percent more government debt of GDP slows growth down from 0.022 % to 0.036 % with 95 % certainty. Therefore, government debt share in Spain 55.7 % in 2011 slowed the growth rate down from 1.21 % to 1.99 %. Meanwhile, Greece debt (106.5 % GDP) resulted in slowdown of approximately 3.2 % in growth (World Bank 2013). However, the growth rate in Finland slowed down by 1.4 % because of 47.7 % debt in 2011. However, savings rate affects positively growth.

It seems that the model predicts less growth to whole Europe, excluding the South compared with the rest of the world. According to Group1 estimation, the North is likely to grow from 0.6 – 0.5 slower than the rest of the world and the Rest of Europe from 0.081 to 0.14 slower. Yet with 95 % certainty, the model predicts 0.03 – 0.16 higher growth for the South. Estimation in column two Group2 explains the level of GDP. The model suggest that score predicts the level of GDP. An increase of score figure by a unit increases GDP by 5.2 %. In this model, the North is not statistically significant while the South, the rest of Europe and the other same explanatory variables are significant at 1 % level. If we think the models above can predict growth, we can expect that Finland, Sweden and Germany should experience lower growth of GDP than the rest of the world in the becoming years, if savings rate, government debt share and capital remain constant. Meanwhile, WEF (2012) reports for Finland a score of 5.55 with a third in the ranking, for Sweden a score of 5.53 (ranking is fourth) and for Germany a score of 5.48 (ranking is sixth). In 2013, WEF still ranked Finland as third with score of 5.54, yet Germany is now better than Sweden being the fourth (with score of 5.51), while Sweden is ranked sixth with same score as USA: 5.48. Spain is highest ranked in the South: 35th with score 4.57. However, South Europe should be growing even a higher rate, according to the Group1 model explaining growth.

6.1. The Re-Examination of the Estimations

A crucial aspect is, whether or not the coefficients of presented regressions statistically differ, if we omit the score of competitiveness. Table 8 reports four GLS estimations allowing heteroskedasticity in the data. The regressors are the same than in table 7 in GLS with capital. The columns on the right hand side of table 8 report GLS estimation without capital. The Wald Chi value drops when explaining level of GDP without capital, although the problem value is still zero.

Government debt was lowering GDP growth in competitiveness estimation by 0.3 %. When estimating without the competitiveness score, we get coefficient of -0.002 with capital and -0.003 without. The results differ in explaining the GDP level. While competitiveness regression suggests a positive influence (0.5 %), GLS without capital suggest a negative effect of 1.7 %. Although, GLS with capital gives almost as high positive influence as competitiveness GLS: 0.3 %. Indeed, Government debt and capital correlate positively (see table 5). Possibly government debt, that supports capital accumulation in firms (via low tax rate or direct transforms), can be a positive influence to the level of GDP.

Interestingly, GLS with capital estimates approximately the same effect of the capital share of GDP than the competitiveness GLS. While explaining first differentiates of GDP, GLS with capital reports -0.25 and competitiveness GLS reports -0.24 coefficients. Both are statistically significant in 1 % error margin. The same applies to the level of GDP: coefficients are close each other: 0.894 and 0.827 in competitiveness estimation.

GLS with capital suggest much higher effect of savings rate than estimation with competitiveness. Effect to growth with capital is 1 % and to GDP level 4.6 %. GLS without capital suggest 3 % effect to growth and 4.8 % effect to the level of GDP. In the competitiveness estimation, coefficients were 0.5 % to growth and 1.7 % to the level of GDP. Thus, GLS without competitiveness gives significant effect of savings to the level of GDP capturing the stability of economy; saving is more optimal choice for representative consumer, when he can better forecast the productivity in next period.

Table 8. GLS estimations explaining GDP growth and level without competitiveness.

Variable	GLS with Capital		GLS	
	d1.log(GDP)	log(GDP)	d1.log(GDP)	log(GDP)
Government Debt over GDP	-0.002 (0.00023)	*** 0.003 (0.00123)	** -0.003 (0.00003)	*** -0.017 (0.00332)
Savings rate	0.010 (0.00113)	*** 0.048 (0.00221)	*** 0.003 (0.00018)	*** 0.048 (0.00878)
South dummy	0.148 (0.0434)	*** 2.028 (0.246)	*** -0.259 (0.00235)	*** 3.662 (0.656)
North dummy	-0.304 (0.00764)	*** 2.050 (0.123)	*** -0.411 (0.00722)	*** 1.947 (0.464)
Rest of Europe	0.012 (0.00699)	* 1.571 (0.0598)	*** 0.076 (0.00420)	*** 0.977 (0.330)
Capital	-0.253 (0.00590)	*** 0.894 (0.0123)	***	
Constant	2.649 (0.0339)	*** 7.185 (0.0466)	*** 3.022 (0.00182)	*** 8.865 (0.313)
Wald Chi	44590.87	16389.73	289680.41	172.08
N	112	227	112	227

However, some of the region dummies differ. The results slightly differ for the rest of the Europe. The GLS without competitiveness forecast slightly positive effect to growth, but slightly positive effect to the level of GDP. Yet, the coefficient of GLS with capital estimating growth is statistically significant only with 10 % error margin. Meanwhile, GLS with competitiveness suggest slightly negative to growth and positive to the level of GDP. However, GLS with capital estimates to the South a clearly positive effect to growth and level of GDP, while without capital suggest a negative growth effect and a significant effect to the level of GDP. For the North the coefficients have the same sign. The effect to growth is negative yet to the level of GDP, it is positive.

To sum up, the results with competitiveness index are reliable at least for government debt, capital share of GDP, South and North dummies (in signs only). For the rest of the Europe, it is hard to give an estimate, as there are many different countries in the group.

7. CONCLUSIONS

South and North Europe are different in many manners, although they use partly the same currency, form a trade union and are in the same tectonic plate. For example, social security expenditure fluctuated in the North before the financial crises while the trend was increasing in the South. That is, the fiscal policy supported consumption. Therefore, the comparison needed a diverse tool taking into account more than the level of production and cultural differences. For valuating successfulness of policy and implementing it, we may follow the competitiveness of country. The competitiveness considers additionally other aspects of business environment.

Our analysis shows that private and public social expenditures in South have gone up by 3 percent point during 1990 – 2003 (OECD Social Expenditure database 2007). Meanwhile, the social expenditures in the North have been fluctuating. However, the score of competitiveness of South was decreasing, from 2005 to 2009, while the North has been internationally competitive business environment.

We can conclude from OECD database that the social expenditures in South Europe seemed to be growing to the level of the Nordic countries. However, the increase was too extensive as compared to the level of economics activity. Financial crises as of 2009 forced South Europe to decrease social spending again in the beginning of 2010s. Meanwhile, the private social expenditure has increased in North Europe. The system's weakness has been found in the recession in the beginning of 1990s and people might be preparing for worse, as the voluntary private social spending is constantly rising in the North.

The competitiveness of a country is an ability to attract profitable employers with an efficient working environment. Additionally, it is the attractivity, which gets and keeps the highly performing employees and entrepreneurs in the country. The clearest definition is the proposal of Rouvinen (2005: 32): nation's competitiveness is the welfare and its growth rate of present and future citizens. Rouvinen (2005: 45) explicates competitiveness as one feature: competitiveness is a sum of many variables.

The final part of thesis analyses competitiveness and GDP growth. Rouvinen (2005) finds that the score of Global Competitiveness index does not explain the changes in gross domestic product in a long run. Indeed, by itself score does not explain or predict growth. This study found a positive relation. The change in score is shown to explain growth with different explanatory factors in the medium run.

It was surprising that in the region dummy estimation, the coefficients of the South were always higher than the coefficients of the North. In other words, the estimation forecast higher growth to the South than to the North or to the rest of Europe. Additionally, the South should be possible to grow faster than the average of the world, because the rest of the world was the omitted variable in the regression. This suggests that the current level of GDP might be significantly lower than the natural level of GDP with the given estimated competitiveness.

The North should also be alert by the effect of indebtedness as the population is ageing and countries like China are providing increasingly more quality products. Additionally, one should keep in mind that the Global Competitiveness Index changes yearly even though competitiveness hardly changes so fast, as corporations prefer a stable business environment. In order to stay at the top level also in the future, the policy has to remain responsible and consider pensionable shakeup.

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Appendix A. Life Expectancy in Competitiveness and Growth

Table F presents the effect of score, capital, government debt and life expectancy in the long run. As opposite to the fixed effect model, GLS model with first differences does not allow country specific factors because they do not change. Even though the sign of score is different from fixed effect model, this is not a conflict: competitiveness in the present does not mean that the country may be competitive and hence fast growing, in a long run.

Table 9. Long run GLS model.

d.log (GDP)	GLS
d. log (score)	-1.8679 *** (0.1669)
d. capital	0.6917 *** (0.0233)
d.log (government debt)	0.0066 (0.0195)
d. life expectancy	-0.0548 *** (0.004)
Constant	0.8654 *** (0.063)
Wald chi	2105.55
P-value of Wald chi	0
N	112