THE IMPACT OF THE ECONOMIC CRISIS ON THE INTERNATIONAL INVESTMENT POSITION OF THE EUROPEAN UNION

Bachelor thesis

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Abstract

Global integration is one of the leading concepts in recent economic developments. But with more integration, the new forms of economic risks arise. Since 2007/08 several European countries are struggling with respect to their economies, affecting the whole European Union. The following thesis deals with the global economic crisis and its impact on the external economic sector of the 27 European member states. Using a quantitative approach, the two opposite positions of Assets and Liabilities of the International Investment Position are analyzed. The main findings are that countries with higher impact of the economic crisis also indicate a decreasing external wealth of the economic sector.

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List of Abbreviations

GDP	-	Gross Domestic Product
High GDP Group	-	The group of countries that indicate growth rates above the European average in the period between 2007 & 2012
Low GDP Group	-	The group of countries that indicate growth rates below the European average in the period between 2007 & 2012
PIIGS countries	-	Portugal, Italy, Ireland, Greece, Spain
Post-Crisis	-	The period between 2007 & 2012
Pre-Crisis	-	The period between 2000 & 2006

Introduction

One of the leading concepts of the past two decades is the ongoing globalization and interconnection of countries around the world. The trade in goods, investment, and also human capital between countries is as easy as it has never been in previous periods. However, in their article, Milesi-Ferretti and Tille mention that '*the global crisis that started in mid-2007 brought an abrupt stop to the sustained rise in international financial integration over the previous decade'* (Milesi-Ferretti & Tille, 2011).

For a good reason, the two authors point to the year 2007 as a ceiling of the global integration process. The period after that marks a turning point in the positive development of global integration. With the occurrence of the global economic crisis in 2007/08, the perspectives on globalization changed tremendously. Whereas primarily considered as a positive effect, the last decade underlined the risks that arise due to further integration. The period of economic struggle affected people from all social backgrounds and from all over the world. This also affected the European Union to a large extend. Whereas *'the catalyst of the crisis was the overextended U.S. housing and mortgage markets, the surprising was the degree and speed of global spillovers'* (Claessens, Dell' Ariccia, Igan, & Laeven, 2010), The result of this unprecedented situations were insecure markets with investors that lost capital due to the underestimation of the risk factors, or because of refraining from secure investments because of the overestimation of potential risk.

Even though the tremendous increase in global capital flows started in the end of the last century, one of the most prominent examples of the global integration process actually dates back to the post-World War period. As a consequence, after some decades, the European Union with its unique institutional structure has become a highly integrated network of countries and their advanced economies. The underlying scope is that *'the member states of the EU hope this move will strengthen its economic position relative to the United States, China, and Japan'* (Eun & Resnick, 2012).

As indicated above, the economic crisis in 2007/8 also affected the then 27 European member states. Since then, the countries are struggling economically as well as politically with the newly arising situation. One of the striking points thereby is the different impact of the economic crises on the members of the European Union. Whereas countries like Germany and several others, e. g. the Netherlands or Denmark managed to prevent from deeper impacts on their economic system, others like Greece, Spain, and Italy are still suffering from the occurring economic recessions to a large extent. The result is a rising gap between the two groups of countries that makes it almost impossible to run the European Union to the advantage of every member state. The prevention of an economic crisis is therefore heavily dependent on the individual state and plenty of underlying variables and factors. Because of the inability of the European Union to act as a sovereign supranational body, calls for reformation are getting louder in the recent periods. Skeptical individuals are even calling for the splitting of the Eurozone into a Southern and Northern Euro.

Regarding the rising importance of foreign capital flows; the aim of the upcoming thesis is to check the impact of the economic crisis on the external position of the 27 European members in greater detail. Generally, the external position can be characterized by two contrary directions: liabilities of a state to the rest of the world, and assets that a country invested in the rest of the world. In order to simplify the comparison, two groups are formed on the variable of the economic situation of the EU average. For each dimension, an in-group analysis is conducted to measure whether there is a significant difference in the pre- and post-crisis period and, following this, the two groups are to be compared with each other. The subsequent comparison evaluates whether the economic crisis had a significant impact on the International Investment Position.

The results are rather straight and indicate that within the two groups there is a change in the development of the external position on both, the assets and liabilities sides. However, the two dimensions differ regarding the relationship on the economic impact. The asset side indicates that there is a higher impact on

the international investment position for countries that have been hit harder by the economic crisis, whereas the liability side fails to reject this null hypothesis.

This research is a first explorative step into the topic of the International Investment Position. Following the introduction, the second part introduces into the theoretical background with its theories and concepts that are considered necessary. The third part then is defining the research questions. The fourth part reflects the methodological background, which is than applied in the fifth part of the analysis. The sixth part is concluding about the research question and is dealing with several recommendations for future research.

Theoretical Background

The introduction already clarified that, on a global perspective, there is a sustainable rise in international integration. As it is stated by Milesi-Ferretti and Tille (2011), *'global capital flows had steadily increased from less than 7% of world GDP in 1998 to over 20% in 2007, led in particular by a dramatic expansion of flows to and from advanced economies'*. The expansion of the global economy was interrupted by the occurrence of the global economic crisis. Because of the ongoing integration process it seems to be important to actually analyze the impact of the economic crisis on the external position of the European members. The upcoming thesis is an attempt to evaluate this position more closely.

In order to measure the impact of the economic crisis on the European economies, the thesis is going to use the gross domestic product as indicator. It summarizes the overall performance of countries by measuring the total income that is earned domestically, thereby including the income from foreign-owned factors. As Mankiw (2010) states, the general trend is that GDP is increasing over time, but in specific circumstances this flow is disrupted by so-called recessions or depressions. Especially in the most recent period the term of recession has been used in the context of the occurring economic crises.

According to Claessens & Kose (2013), '*the 2007-09 global* economic *crisis has been a painful remainder of the multifaceted nature of crises*'. The adverse implications are still measurable in several regions of the world and also the European Union has been largely affected. Mankiw (2010) describes the most recent economic crisis as a crisis of confidence. According to him, this kind of crisis prominently involves a vicious circle comparable with the upcoming steps:

1. The occurrence of problems within a banking system causes decreasing international confidence in respective economies
2. This lack of confidence results in increasing risk premiums as well as interest rates

3. Higher interest rates in line with the lack of international confidence diminish the prices of stocks and other assets
4. The diminishing of assets reduces the collateral value, which is necessary for bank loans
5. In line with point 4., the smaller collateral value in turn increases default rates on bank loans
6. The last stage is that these default rates result in problems within the banking system and, therefore, result in point 1, which closes the circle

The implications of this vicious circle are further underlined by Claessens & Klose (2013), who refer to the economic crisis as *'an amalgam of events, including substantial changes in credit volume and asset prices, severe disruptions in* economic *intermediation, notably the supply of external financing, large scale balance sheet problems'.* Additionally, Berkman et al. (2009) note that *'when the crisis hit, capital flows reversed, and currencies depreciated. In many cases this translated into financial constraints and a collapse in credit and in some cases into severe balance sheet problems'.*

Following the global economic crisis, *'the uneven growth performance of the different Euro countries, the unsustainably large public debts of some EU periphery countries, and the incompleteness of the euro project'* (Aizenman, Hutchinson, & Lothian, 2013) were causing an even deeper recession for several European members such the PIGS countries. The impact of the European Sovereign Debt Crisis is still measurable across the European Union and *'its first four years provide preliminary insights into the challenges facing the [European Union]'* (Aizenman, Hutchinson, & Lothian, 2013).

In the light of these crises, it is essential to repeat that the external sector of national economies has gained importance recently because of the ongoing global economic integration. In case of a crisis, it is therefore crucial to analyze its development more closely. Deeg & O'Sullivan (2009) argue in their article that *'the structure of different states determines the characteristics of their domestic*

economic system and, in turn, their integration into the global financial system'. Even though countries generally seek to maintain their sovereignty, global integration can have promising effects for both, developing and developed countries. Baldwin & Wyplosz state in this respect that '*matching and risk diversification are both easier when there is a large number of borrowers and lenders'* (Baldwin & Wyplosz, 2009).

But as much as an ongoing global integration brings diversification of risks, another contrasting phenomenon occurs. Whereas the closed economy of a nation ideally merely needs to deal with domestic factors, *'operating across borders must deal with the forces of three kinds of environments – domestic, foreign and international*' (Ball, Geringer, Minor, & McNett, 2010). With the additional two dimensions, foreign, and international, the system gets more complex, which implies that it is more difficult to assess the market conditions. '*The owner of an investment must consider […] uncertainty*' (Baldwin & Wyplosz, 2009) and even more uncertainty regarding the two additional global dimensions. In relation to the crisis of confidence that was described by Claessens & Kose (2013), *'savers obviously prefer no or little risk*' (Baldwin & Wyplosz, 2009). Whereas Baldwin & Wyplosz (2009) describe the concept of risk during periods of normal economic conditions, Mankiw (2010) relates the concept to economic downturns and clarifies that risk is an important decision factor for investors. If the risk is too high, investor recoil from investment deals. At a general level*, 'periods of enhanced global risks are associated with much smaller volumes of gross capital flows, as investors […] pull back from accumulated positions that were built up during normal times but look outsized in a higher-risk environment'* (Lane, 2012).

The aim of this thesis is to analyze the effect of the crisis on the external position. The development of the two opposing forms (assets and liabilities) of external activities result in a different impact on the overall external wealth of a country. As Lane (2012) states, *'all else equal, capital gains on foreign assets and capital losses on foreign liabilities improve the net international investment position and such gains in external wealth can provide a stabilizing force if excess returns are*

earned during crisis periods'. A rise on the assets side and a decrease in the liabilities side are therefore preferable for the economic wealth of a country within the external sector.

Research Question

Regarding the abovementioned theory, the resulting main research question is going to:

'What is the impact of the economic crisis on the International Investment Positions of the European Union members?'

In order to clarify and structure this thesis, several sub-questions and their hypotheses are used.

The scope of the thesis is appropriate to analyze the external position with regard to their assets and liabilities. Therefore the first question is:

I. ***Is there a significant change in the assets position of the International Investment Position in the aftermath of the crisis?***

Following the theory, two hypotheses need to be tested under this sub-question:

H_1: There is a significant difference in pre- and post-crisis phase of the assets of the International Investment Position.
H_2: Countries that are hit harder by the crisis, will face a higher change in the asset position of the International Investment Position.

After the analysis of this statement, the opposite direction is analyzed:

II. ***Is there a significant change of liabilities of the International Investment Position during the crisis?***

Again, one can test the question with two hypotheses:

H_3: There is a significant difference in pre- and post-crisis phase of the liability position of the International Investment Position.
H_4: Countries that are hit harder by the crisis, will face a higher change in the liability position of the International Investment Position.

The previous parts are analyzing the two opposite directions independently. For the analysis of the International Investment Position, it is however necessary to put them into their original setting. Lane (2012) mentions their specific role for the external wealth of an economy. When applying his statement to the International Investment Position, it is finally possible to evaluate the impact of the economic crisis.

H_5: Countries that are hit harder by the economic crisis will face a decrease in the net growth rates of the International Investment Position.

Methodology

The theoretical description clarified that the independent variable is the economic crisis and the dependent variable is the external economic sector of the European countries. The variables were formulated as research questions in the previous section. In order to analyze the research questions in a correct manner, the following section explains the methodological implications of the research. Beginning with the research design, the upcoming part also focuses on topics such as the case selection, the operationalization and the strategy for the data collection and analysis.

Research Design

In order to determine the research design, the most important question is, whether to choose a qualitative or quantitative approach. Either direction has advantages and shortcomings that need to be evaluated. An important factor is that the main aim of the thesis is to analyze the impact of the economic crisis on all members of the European Union.

The qualitative approach allows for an in-depth analysis of a few units. However, it lacks with regard to the generalization. Just because one event occurs in one country of the European Union, does not mean that the same necessarily applies for another country as well. The general economic settings of countries are too different. In contrast to that, the quantitative approach guarantees at least the possibility to generalize, because all the European member states can be sorted into groups and these can be evaluated respectively. The possibility of generalization also causes the disadvantage of the quantitative approach. Because of the group selection, an in-depth analysis is hardly to examine. The data of the countries are generalized into a group statement and in this it is barely possible to conclude to the behavior of an individual country during the economic crisis. Keeping the scope of the research in mind, the actual factor for choosing the quantitative approach is the generalization and the fact that all the

member states are included. When dealing with the general setting of the research, it is also necessary to state that the research is going to follow the principles of a natural experiment. As a natural experiment, the treatment already occurred in the past, which implies that the researcher cannot influence the result on a post-hoc basis. Also Gerring (2011) emphasizes that *'non-randomized designs generally involve the ex-post evaluation of data generated naturally, that is, without manipulation or control of the researcher'*. Non-randomized experiments can follow several design strategies like time series, cross-sectional or a panel design. For this research, the panel design seems to be eligible because it is a design '*in which several observations are taken from each unit and there is some variation in X through time and across units'* (Gerring, 2011).

The panel design follows the same patterns as a randomized experiment and therefore the '*Nonequivalent Comparison Group Design with dependent Pre-test and Post-test'* (Gerring, 2011) is going to be applied. The pre-test and the control group *are* mainly established to prevent from threats to validity. The pre-test is thereby going to focus on the status before the occurrence of the crisis and because of this it is suggested to be unaffected from the independent variable. *The* control group *mainly* considers comparable intentions like the pre-test, but on a spatial dimension, whereas the pre-test aims to relate the effect to a pre-crisis situation, the aim of the control group is to establish a group that enables the treatment group to be compared to a group that is less affected by the economic crisis. In this regard, it is stated that under normal conditions, the control group should be untreated, but due to the fact that it is hypothesized that the economic crisis affected all the countries somehow, one cannot establish a non-affected control group. In order to picture the research design clearly, *Appendix 1* summarizes the abovementioned facts graphically. The result is a model with a time and a spatial dimension.

Case Selection

In total, 27 European member states exist (excluding the recent accession of Croatia). Following the introduction that mentioned the division into two groups of countries within the European Union, the research design suggests to create respective two groups out of these countries. One is the actual *'Lower GDP Group'*, wherein the effect of the independent variable is higher, and the other one is the *'Higher GDP Group'*, wherein the effect of the independent variable is lower or even zero. *'Because the groups are nonequivalent by definition, selection bias is presumed to be present'* (Shadish, Cook, & Campbell, 2002). However, the existence of a pre-test makes it possible to estimate the possible size and direction of the bias.

In order to select the countries in the two groups, one needs to find a selection variable. Regarding the fact that the thesis is going to analyze the impact of the economic crisis, it seems appropriate to select the countries according to the impact of the crisis. The problem here is that the economic crisis as such is not measurable easily. It has no numerical size or ordinal measure, but still there is an opportunity to sort the countries into the two groups. The economic crisis has a distinct impact on the national economies. Mostly, the impact is considered negatively. So rather than using a measure for the economic crisis, one can use a measure that evaluates the overall status of an economy. As stated by Mankiw (2010), the GDP growth evaluates the overall economy on an annual basis by comparison with the previous year and therefore can be used as a substitute for the impact of the economic crisis. In order to allocate the countries into the *'Lower GDP Group'* and *'Higher GDP Group'*, one needs to recode the interval measurement into a categorical one. The cutting point between the countries that are hit more severely and the countries that prevent the economic crises more successfully is set at the EU-27 average of GDP growth.

Now that the selection variable as such is defined, one needs to further clarify the time period. Even though the economic crisis dates back to the years 2007/08, the probability of a delayed effect of the impact of the economic crisis

on the GDP growth might be present. The solution is to use the average values for the period between 2008 and 2012. Countries that indicate a relatively low growth rate on average are selected in the *'Lower GDP Group'*, whereas the countries with high growth rates are selected in the *'Higher GDP Group'*.

Following the mentioned strategy to sort the countries into the different crisis groups, *Table 1* represents the allocation of the 27 European member states:

Table 1: Case Selection

Case Selection		
GDP group:	**Lower Growth Rate**	**Higher Growth Rate**
Countries:	Denmark	Austria
	Estonia	Belgium
	Finland	Bulgaria
	Greece	Cyprus
	Hungary	Czech Republic
	Ireland	France
	Italy	Germany
	Latvia	Luxembourg
	Lithuania	Malta
	Portugal	Netherlands
	Slovenia	Poland
	Spain	Romania
	United Kingdom	Slovakia
		Sweden

Operationalization

In this case, the independent variable is the economic crisis. The period after the occurrence of the economic break-down should be considerably different than the period prior to the crisis. In addition to this, countries that are more affected by the crisis should show higher changes in the aftermath of the crisis. Regarding the term of the economic crisis, the time dimension needs to be clarified. The

period between 2000 and 2012 is selected in order to prevent from any economic downturns that occurred in the decades before.

In the light of the thesis, the term "economic crisis" needs to be clarified as well. The initial idea was to use the global economic crisis in 2007/08 as a cutting point for the analysis. However, when analyzing the post-crisis period, it became clear that the struggling behavior of the European Union could not only be traced back to the period of 2007/08. Other variables such as the European Sovereign Debt Crisis had an influence on the development of the GDP as well. In line with the possibility of a delayed effect, the term economic crisis refers to the whole period after the global economic crisis. This actually leads to the main problem of the thesis. The economic system is quite complex and because of this, it is barely impossible to exclude the existence of cofounders. Probably the economic crisis was one of the main occurring events in the last decade, but it is not possible to exclude the possibility that a country was actually not affected by the crisis, but however suffered a recession in GDP because of other reasons. In order to prevent from these cofounders, it would be necessary to extend the model, but during the research process it became clear that this would exceed the scope of the thesis. In order to maintain this scope, the occurring developments are therefore related to implications of the economic crisis.

In order to describe the external sector, the International Investment Position is selected as an appropriate measure for the analysis. *'Compiled at a specified date, the [International Investment Position] is a statistical statement of (i) the value and composition of the stock of an economy's financial assets, or the economy's claims on the rest of the world, and (ii) the value and composition of the stock of an economy's liabilities to the rest of the world'* (European Central Bank, 2007). Generally, the two parts are influenced by quite different factors, which is the reason why they need to be analyzed separately. However the net international investment position is stating whether a nation is a net receiver or net lender of international investments. *'A net debtor means that international liabilities exceed international assets'* (European Central Bank, 2007).

When dealing with the external position of the European members, other statistical methods exist that can be used for an analysis respectively. Another prominent measure for this is the Financial Account of the Balance of Payment. Generally, the Balance of Payment is a '*statistical statement that systematically summarizes, for a specific time period, the economic transactions of an economy with the rest of the world*' (European Commission, 2013). Separated into three accounts, its *'financial account covers all transactions associated with changes of ownership in the foreign financial assets and liabilities of an economy*' (International Monetary Fund, 2009).

Both, International Investment Position and Financial Account, are composed of the positions of direct investment, portfolio investment, other forms of investment, financial derivate and reserve assets. Regarding this fact, it becomes clear that the two statements are actually related to each other. Also, the European Central Bank (2007) states that *'the [international investment position] and the financial account of the [Balance of Payments] share many sources and methods of compilation […] so as to stress their close relationship'*. However, the advantage of the International Investment Position is that a change in stocks can be related to several factors, including flows of the Balance of Payments, but also '*to revaluations reflecting changes in exchange rates, prices, etc. or to other adjustments (e.g. reclassifications, corrections, uncompensated seizures)'* (European Commission, 2013). Regarding the fact that possible confounders are mentioned here, it is easier to identify their influences on a later stage more appropriate. This is the reason that the International Investment Position was selected as the dependent variable in this study.

Regarding the two opposing directions of external activity (assets and liabilities), one needs to apply the theoretical background to the framework of the research. For the thesis, this means that the higher the growth rates for assets, the better the external wealth. In contrast to that, the external wealth of a country increases in case that the growth rates of liabilities decrease.

Regarding the operationalization, one finally needs to mention that the observational data has to be restated. Whereas the European Commission is publishing the data as real values, the values need to be adapted to the comparative approach of this thesis. When observing the real values of the variables, they are dependent on each other on the time dimension. However this fact changes, when braking down the total volumes into the percentage of change compared to the previous year. For an analysis of the European member states, this seems to be more appropriate because it excludes the volume of the external activities of the European member states and therefore the values are made more comparable.

Data Collection and Strategy for Analysis

Now that both, the groups and the variables, have been identified, the next step is to clarify the data collection and the actual strategy of the analysis. The European Union publishes data on the International Investment Position on an annual basis. The data is publicly accessible and, therefore, the data set should be the main source for the quantitative data.

The countries are already sorted into the *'Lower GDP Group'* and *'Higher GDP Group'*. The topic "Research Question" explained how the main research question of this thesis can be analyzed via the formulated sub-hypotheses. The first step is an in-group analysis of the pre- and post-crisis period. The first point of interest is, whether the post-phase significantly differs from the period before the economic struggle. As stated previously, the aim of covering all the European member states is given most appropriately by the quantitative approach. With the aim of numerical data, it is possible to evaluate a total sample of 27 with each other on the basis of clearly identified variables. Ideally, the data set consists of 351[1] units. The general first approach is the analysis of the in-group changes

[1] 27 EU countries * 13 years = 351 data units

from the pre- to the post-crisis phase. The countries in the two selected groups are analyzed independently.

Regarding the actual analysis, the appropriate quantitative method still needs to be identified. For this purpose, different methods exist, ranging from parametric to non-parametric tests and further ranging from univariate to multivariate analysis. These questions can be answered by focusing on some things in more detail. The independent variable is covered by the case selection and therefore has no influence on the definition of the test, which leads to the fact that the International Investment Position as such is the only relevant variable for the determination. Moreover, the time period defines the two groups of the variable, which are the data units in the pre- and post-crisis sub-groups. The difference or the change should be determined between the two sub-groups.

Regarding these facts, an *'independent t-test for the difference in means'* seems to be an appropriate test, but before using the test, several assumptions need to be tested. In this respect, De Veaux et al. (2011) suggest several assumptions that need to be testified beforehand:

1. *Randomization Condition*
2. *Independence Assumption*
3. *Independent Group Assumption*
4. *Nearly Normal Condition*

Starting with the *randomization condition*, it is necessary to state what the aim of the condition actually is, because as such the units are not drawn on a random basis and they are not selected randomly into the two groups. The randomization condition should guarantee that the researcher is neither actively participating in the creation of the data nor in the group selection. Regarding the fact that the European Commission published the data at the end of 2012, and the research as such was initiated in 2013, a direct relation between data and researcher can be rejected. This actually makes the research to a natural experiment. The given data is used to make a different analysis. No influences on

the side of the researcher exist. Even though the groups were selected on purpose, the researcher chooses a selection variable in form of the independent variable in order to sort into the two groups. Thereby the selection was done on numerical arguments (see case selection) that were not influenced by the researcher. Keeping the aim of the condition in mind, it seems to be appropriately fulfilled to continue with the test.

The most striking position in this part is the *independence assumption*. So far, the 351 data values are drawn and with the 'independent t-test for the difference in means', they would be ready to be analyzed. But, after rethinking the assumption, it became clear that the values actually are not independent from each other as they depend on the countries they are drawn from. For instance, in case of an economic crisis, the post-crisis values of one country might be affected by exactly the same factors and therefore they would be biased. It also becomes clearer when thinking about an extreme outlier. The more values that are taken into account, the more the shape is actually influenced in the direction of the outlier. However, this does not prevent from conducting the 'independent t-test for the difference in means'. In order to circumvent the problems of the dependency, one just need to calculate the mean values for both time phases. In this case, just one value for each country and each period exists, which are independent from the other variables.

The *independent group assumption* refers to the fact that the selected groups shall not be related to each other. De Veaux et al. (2011) state that this is the most important assumption among the above-mentioned. It was already figured out in the previous paragraph that the data units depend on the country. The same relation holds true for the relation between the pre- and post-crisis group. They still depend on the country. Now that the two assumptions are not fulfilled, it is necessary to rethink the problem. This leads to the fact that the chosen 'independent t-test for the difference in means' cannot be applied due to the actual lack of independence between the groups. But in case that the two groups are related, there is a slightly different test which is actually using the same model, the t-model. The *'pooled t-test'* is designed to conduct an analysis in such a

case. In this example, the dependence is based on the country and the two mean values in pre- and post-crisis stage exist. The difference for the related values is calculated and it is checked whether this difference is significant or not. The assumptions are the same like the ones for the *'independent t-test for the difference in means'*. The only difference is that the two samples need to be related.

Keeping this in mind, the last condition that is needed to check for is the *Nearly Normal Condition*. Now that the t-test was adapted to the assumptions and conditions, also the sample size is going to change. The means for the pre- and post-crisis phase are calculated, which has an impact on the size of the sample. Rather than the formerly 351 data values that were collected for the 27 countries in 13 years, the mean values for the pre- and post-crisis phase restructure the former size. Due to the fact that for each EU member the average is taken in the pre- and post-crisis period, it totals into 27 pre-crisis and post-crisis means. Keeping the case selection in mind, the *'Lower GDP Group'* composes values of 13 countries, whereas the *'Higher GDP Group'* covers about 14 countries. In the data, we will actually see that France is a special case in the *'Higher GDP Group'*, because no data was published by the European Union. For each sub-group of the variable, the Nearly Normal Condition has to be checked independently, because now the sample size is relatively small. In sample sizes that include about 40 cases or more, '*the Central Limit Theorem starts to kick in no matter how the data are distributed*' (De Veaux, Velleman, & Bock, 2011). Anyways the easiest possibility for such a check is to create a histogram for the frequencies before conducting the test. If the shape follows the bell shape of a Normal distribution, one can continue with a 'pooled t-test for the difference in means'.

As much as the pooled t-test brings a decline in statistical power regarding the smaller sample size, it opens better opportunities to actually analyze the countries' development as such. Whereas a sample size of 351 with an *'independent t-test'* would have generalized the country-specific values into values of the *'Lower GDP Group'* and *'Higher GDP Group'*. With the 'pooled t-test' and the comparison of the mean values of the pre- and post-crisis phase, the

mean values are calculated on a country-basis, which makes it easier to refer to the European member states more explicitly. However, the possibility of referring to specific dates in the period between 2000 and 2012 is not possible anymore. The only possibility is to refer to the mean values of the two time groups and thus, of the pre- and post-crisis phase. Still, the design is considered appropriate for the scope of the research, because it indicates the impact of the period of economic struggle on the European member states.

Now that the first hypothesis was analyzed, it is necessary to compare the in-group changes of the '*Low GDP* Group' and '*High GDP Group'* with each other. The statistical method is the usual *'independent t-test for the difference in means'*. This is the actual part were the difference between *'Lower GDP Group'* and *'Higher GDP Group'* are calculated and in this respect it is tested whether the countries that show lower growth rates in the aftermath of the crisis also show more significant impacts in the International Investment Position.

Data Analysis

Following the theory and the methodological part, all necessary information are gathered in order to start the analysis. In the theory it was already stated that the International Investment Position is mainly composed of the liabilities of the country with the rest of the world, whereas the assets are forms of capital that the respective country invested in rest of the world.

Assets

With regard to the period of economic crises, the analysis starts with the asset position of the International Investment Position and therefore it analyses the capital that a country is investing abroad. The groups are already established and therefore it seems appropriate to look at the development on the time line of both, the *'Lower GDP Group'* and *'Higher GDP Group'* that were established within the case selection. *Figure 1* summarizes this development within the period between 2000 and 2012.

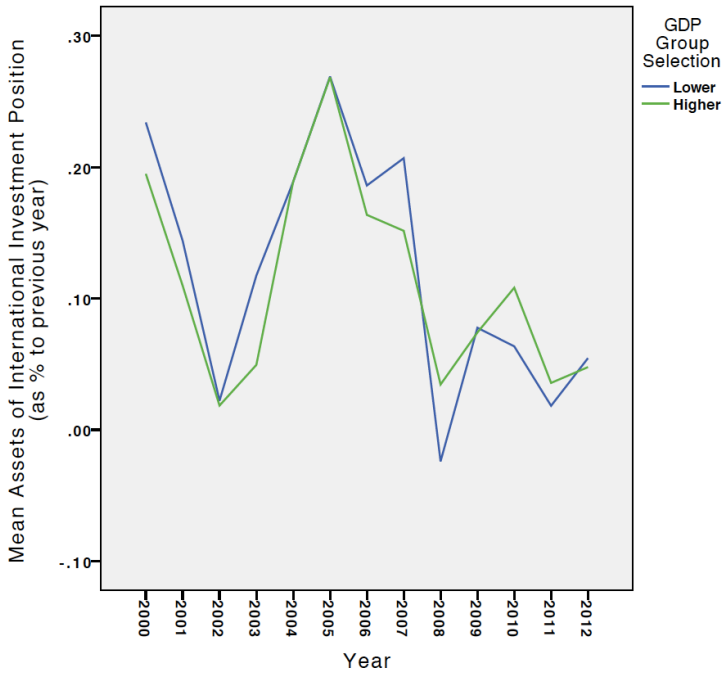

Figure 1: Development of the Group Means of the Assets of the International Investment Position

Before the occurrence of the economic crisis in 2007/08, the respective mean values of both groups developed similar to each other. After a phase of decline at the beginning of the decade, the two groups' means were following an upward trend until reaching a peak point in 2005. Following this period, the mean

growth values were facing a moderate decline until 2007, which from this point onwards declined tremendously, reaching a minimum in 2008. At this point, the International Investment Position was actually diminishing compared to the previous year for the *'Lower GDP Group'*, and growing about 0,02 for the *'Higher GDP Group'*, which are low values compared to the previous years. Even though the graph indicates a decline in the pre-crisis period, the implications to the recession in the aftermath of the economic crisis seem to differ. Whereas the general trend was increasing in the pre-crisis period, the growth rates declined heavily in the aftermath of the crisis of 2007/08 and in the end they are stagnating at a much lower level compared to the pre-crisis period. The implications of the different growth rates are analyzed in the following. According to the methodology, the analysis is therefore primarily based on the in-group analysis of the *'Lower GDP Group'* and *'Higher GDP Group'*, whereas the groups are then analyzed together in the second part.

The 'Lower GDP Group'

Figure 1 shows the development over time. The graph indicates that there might be a deviation between the pre- and post-crisis phases of both groups. In addition to this, there seems to be an arising difference in the aftermath of this crisis. Whether these differences are significantly different for the assets of the International Investment Position will be checked in the following section. Following the assumptions of the methodology, the mean values for the *'Lower GDP Group'* and *'Higher GDP Group'*s with their sub-groups of pre- and post-crisis phase are calculated accordingly. *Appendix 2* summarizes the most important findings. Starting with the *'Lower GDP Group'*, the mean value for the pre-crisis period is 0.1849 growth to the previous year on average with a standard deviation of 0.082. In general, the histogram of the 13 cases follows a nearly normal distribution. Also, the boxplot within the summary does not indicate any unconformities besides the fact that it is slightly skewed to the upper end. In the post-crisis phase, the mean value of the same sample faces a severe decline down to a growth rate of 0.038% on average with a standard deviation of 0.037. Also,

the histogram follows a nearly normal distribution with a frequency of 7 around the mean value.

In general, the boxplots in indicate a much lower growth rate for the second phase rather than the first phase. Whereas the country means of the pre-crisis phase were ranging between 0.07 up to 0.38, the mean growth values in the aftermath of the crisis where ranging from -0.01 to 0.11. This actually means that some countries were facing negative growth in the post-crisis period and generally the maximum means for the growth rates for the post-crisis period are comparable to the minimum means for the growth rates in the pre-crisis period. . Regarding the fact that differences between the two samples are visible, the following part is conducting the respective statistical test.. Both samples were checked with respect to the nearly normal assumption, which implies that the pooled t-test is applicable for the difference of the pre- and post-crisis means of the *'Lower GDP Group'*.

The results of the test are shown in *Table 2*. As already stated above, the mean growth value was about 0.1849 within the pre-crisis phase, whereas the

Paired Samples Statistics[a]

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Averagebefore	.1849	13	.08200	.02274
	Averageafter	.0380	13	.03692	.01024

a. GDPgroup = 1 Lower

Paired Samples Test[a]

		Paired Differences					
					95% Confidence Interval of the Difference		
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t
Pair 1	Averagebefore - Averageafter	.14687	.08877	.02462	.09322	.20051	5.965

Paired Samples Test[a]

		df	Sig. (2-tailed)
Pair 1	Averagebefore - Averageafter	12	.000

a. GDPgroup = 1 Lower

Table 2: Pooled t-test for the lower GDP Group (Assets)

post-crisis phase is best described with a mean value of 0.038. The difference between the pre- and post-crisis mean growth rate therefore is about 0.14687. When conducting a *'pooled t-test for the difference between groups'*, the responding t-value of 5.965 with a degree of freedom of 12 results in a p-value of below 0.001.

Regarding the fact that a p-value of this size is below 0.05, which indicates that the 1st hypothesis for the *'Lower GDP Group'*. The growth rates of the post-crisis period can be described as significantly lower compared to the pre-crisis phase, which leads to the assumption that an impact of the economic crisis is present in the *'Lower GDP Group'*.

The 'Higher GDP Group'

Now that the *'Lower GDP Group'* has been analyzed, the focus is going to turn to the *'Higher GDP Group'*, which is composed of the countries that were above the EU average GDP growth in the post-crisis phase. Appendix 4 shows the summary for this second group.

The *'Higher GDP Group'* should consist of 14 countries. Regarding the fact that the European Commission did not publish data for France, the sample size declined by one to 13 cases. The pre-crisis phase is described with a mean value of 0.1503 and a standard deviation of about 0.04. The minimum growth rate is at 0.1%, whereas the maximum is at 0.24%. Accordingly, the range of this sample is at a level of 0.14 percentage points. The histogram in *Appendix 2* shows frequencies that follow a nearly normal distribution. Also, the boxplot estimates a normal distribution, even though the shape of the sample seems to be skewed to the upper end with an outlier at about 0.224.

Regarding the *'Lower GDP Group'*, a comparable effect occurs at the *'Higher GDP Group'* in the post-crisis phase. The sample is described with a mean value of 0.0601 and a standard deviation of about 0.0256, which indicates a decline in

both compared to the pre-crisis phase. Accordingly, also the range is diminishing from 0.14 to around 0.07, with a minimum value of 0.02, and a maximum of 0.10. Regarding the fact that the assumptions are satisfied for the sample, the '*pooled t-test for the difference in means*' is going to be applied.

The respective t-test is shown in *Table 3.* The difference between the two time periods is at a mean value of 0.0903 with a standard deviation of about

Paired Samples Statistics[a]

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Averagebefore	.1503	13	.04004	.01111
	Averageafter	.0601	13	.02556	.00709

a. GDPgroup = 2 Higher

Paired Samples Test[a]

		Paired Differences					
					95% Confidence Interval of the Difference		
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t
Pair 1	Averagebefore - Averageafter	.09026	.04321	.01198	.06414	.11637	7.531

Paired Samples Test[a]

		df	Sig. (2-tailed)
Pair 1	Averagebefore - Averageafter	12	.000

a. GDPgroup = 2 Higher

Table 3: Pooled t-test for the Higher GDP Group (Assets)

0.04321. When conducting the test, the respective mean difference of 0.0903 results in a t-value of 7.531 with a degree of freedom of 12. The corresponding significance level out of the output is below 0.001. Regarding the fact that it is a one-sided hypothesis, this value needs to be divided by two.

The p-value of below 0.001 indicates that in less than 1 out of 1000 times such a difference would occur. With such a low p-value, the 1st hypothesis for the *Higher GDP Group* turns out be true. There is a significant change between the pre- and post-crisis period. It seems that the period of economic struggle has an influence on the assets of the International Investment Position of the countries that are above the EU-27 GDP growth in the post-crisis period.

Comparison of 'Lower GDP Group' and 'Higher GDP Group'

So far, the two groups were analyzed apart from each other. The impact was evaluated with the difference of the pre- and post-crisis mean values. In the two previous sections the significance of these changes were tested. But following the theory, another fact that actually is the striking point for this thesis needs to be analyzed in more detail. It is said that countries that are affected more severely by the economic crisis are going to refrain more from investments than the countries that are remaining healthier. In order to check this hypothesis, the *'Lower GDP Group'* and *'Higher GDP Group'*s were established. The important data was already calculated in the two previous sections. For the upcoming analysis the differences between the two sub-groups of each, the *'Lower GDP Group'* and the *'Higher GDP Group'*, are further investigated.

As mentioned in the methodology, the chosen test thereby changes slightly. Regarding the fact that the two samples (*'Lower GDP Group'* and *'Higher GDP Group'*) are now independent from each other, it is necessary to analyze these differences with an *'independent t-test for the difference in means'.*

Both groups have a sample size of 13 (still excluding the case of France). The mean change between the pre- and post-crisis period of the *'Lower GDP Group'* equals 0.1469, whereas the corresponding mean change of the *'Higher GDP Group'* equals 0.0903. The important value, therefore, is the difference between the two groups, which equals 0.05661. With this value the actual test is performed.

The results are stated in *Table 4.* The '*Levene's test for the Equality of Variances*' assumes no equal variances for the two samples. The mean difference between both groups is about 0.05661 with a standard error of 0.02738. The corresponding t-value for the difference between both means is 2.067 with a

degree of freedom of 17.385. The corresponding p-value is 0.054. Also in this

Group Statistics

	GDPgroup	N	Mean	Std. Deviation	Std. Error Mean
difference	1 Lower	13	.1469	.08877	.02462
	2 Higher	13	.0903	.04321	.01198

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
difference	Equal variances assumed	1.486	.235	2.067	24	.050
	Equal variances not assumed			2.067	17.385	.054

Independent Samples Test

		t-test for Equality of Means			
		Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
				Lower	Upper
difference	Equal variances assumed	.05661	.02738	.00009	.11312
	Equal variances not assumed	.05661	.02738	-.00107	.11428

Table 4: Independent t-test for the Difference between the Low and High GDP Group (Assets)

case, one needs to divide the result by 2, because of the one-sided hypothesis, which then gives the p-value of 0.027. The relatively low value indicates that in about 3 out of 100 times such a difference would occur in this model. Because of this fact, the null hypothesis of no significant group differences can be rejected. For the *2nd hypothesis* and therefore for the asset position of the International Investment Position, the change in the growth rates is higher in the *'Lower GDP Group'* compared to the *'Higher GDP Group'*. Therefore, the impact of the economic crisis seems to show a bigger effect on the *'Lower GDP Group'* when it comes to the assets of the rest of the world within the countries of the *'Lower GDP Group'*.

Liabilities

In the previous section, the behavior of the assets composition was reflected in the light of the economic crises. As indicated in the theory, the International Investment Position is also composed of the counterpart. Whereas the asset side of the position deals with capital investments abroad, the liability side deals with

the exact opposite. In order to get a full understanding of the International Investment Position, the liabilities part is observed in this section in more detail. The hypotheses still are that a change in the pre- and post-crisis period is measurable and that this change is more distinct in the group of countries that show lower growth rates of GDP in the post-crisis period. As in the previous section, the first level of analysis is taking place within the *'Lower GDP Group'* and *'Higher GDP Group'*. In the second part, the focus is on the difference between the two groups. But before starting the actual analysis, it is useful to have a look at the general development over time.

The pre-crisis phase is best described as a time of increasing growth on the liability side, which indicates the gain importance of the external sector for the national economies. After a short phase of growth decline in the beginning of the century, a steady increase in growth rates is indicated. Reaching the peak in 2005, a weak decline initiated, turning into large decline around the period of 2007/08.

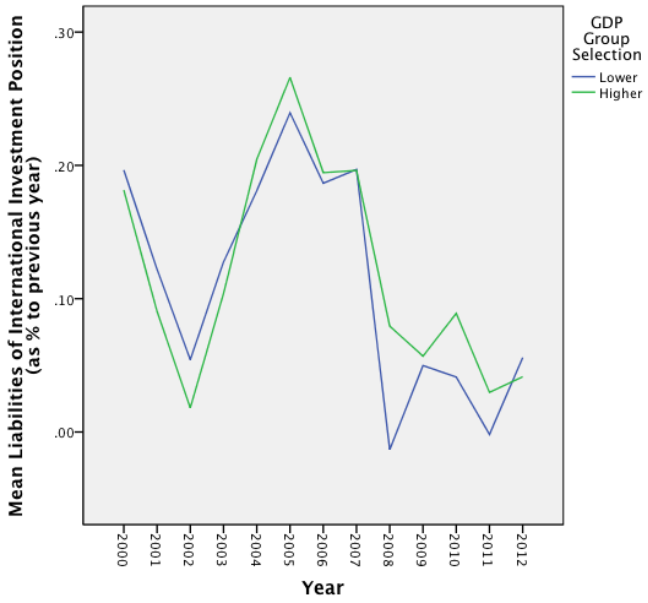

Figure 2: Development of the Group Means of the Liabilities of the International Investment Position

Comparable to the asset position, the year 2007 is a turning point. Even though the mean growth values did not turn negative for both groups, it seems that at least a severe decline of the growth rate started in the aftermath of the crisis. The curve of the lower GDP group seems to decrease more than the curve that expresses the mean growth rates for the other group. This indicates that the lower GDP group was more affected. Whereas the lower GDP group reached remarkable low growth rates that did not exist in the pre-crisis period, the

growth rates of the higher GDP group were located around the growth rates of the beginning of the century.

The 'Lower GDP Group'

Appendix 3 summarizes the data of the *'Lower GDP Group'*. The pre-crisis period of the *'Lower GDP Group'* is best described with a mean growth rate of 0.1645% to the previous year with a standard deviation of 0.0662. The respective summary is indicated in Appendix 3. It indicates that in general the liabilities of the International Investment Position increased steadily within the first period. The mean growth rates of the 13 countries range from 0.04 to 0.27, which means that actually no country reported a decline on the average growth. Furthermore, the boxplot does not report any extreme outliers. However, the sample seems to be slightly skewed to the lower end. The histogram indicates that the frequencies follow a nearly normal distribution. Regarding the information, there is no real evidence that any unconformity exists.

After the occurrence of the economic crisis, the post-crisis sample of the *'Lower GDP Group'* changed respectively. At first, the mean growth rate value declined by 0.1381 down to 0.0264. Also, the standard deviation of the post-crisis sample diminished down to 0.01865. The boxplot underlines the decrease in variation, however this sample seems to be slightly skewed to the right. The histogram indicates that also, the post-crisis sample follows a nearly normal distribution with one outlier on the upper part of the sample.

Given the fact that both sub-groups deal with the mean growth values of a respective country, they are clearly related. Because of this, the application of the pooled t-test seems to be appropriate. The result of the test is stated in *Table 5*. The mean difference between pre- and post-crisis phase is 0.1307 with a standard deviation of 0.0701. The corresponding t-value is 7.102. With 12 as the degree of freedom, the significance level is lower than 0,00.

Paired Samples Statistics[a]

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Averagebefore	.1645	13	.06620	.01836
	Averageafter	.0264	13	.01865	.00517

a. GDPgroup = 1 Lower

Paired Samples Test[a]

		Paired Differences					
					95% Confidence Interval of the Difference		
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t
Pair 1	Averagebefore - Averageafter	.13807	.07010	.01944	.09571	.18043	7.102

Paired Samples Test[a]

		df	Sig. (2-tailed)
Pair 1	Averagebefore - Averageafter	12	.000

a. GDPgroup = 1 Lower

Table 5: Pooled t-Test for the Low GDP Group (Liabilities)

With an α-level of 0,00, one can claim that the 3rd hypothesis that deals with the difference between the pre- and post-crisis phase is significantly different. The null hypothesis that no change occurred in the aftermath of the crisis can therefore be rejected and one can even say that the difference is significantly smaller in the aftermath of the economic crisis within the *'Lower GDP Group'*.

The 'Higher GDP Group'

Now that the hypothesis was tested for the *'Lower GDP Group'*, one needs to turn to the *'Higher GDP Group'*. Appendix 3 provides a summary for the *'Higher GDP Group'*, which is described by a mean of 0.1639 with a standard deviation of 0.0593 respectively. The minimum value in this group is a mean growth rate of 0.08, whereas the highest growth rates in the pre-crisis period is about 0.26. The range between these two extremes is, therefore, slightly lower than the respective range of the *'Lower GDP Group'*. Regarding the histogram of the group in Appendix 3, one can see that the sample follows a nearly normal distribution. The respective boxplot shows that the sample is slightly skewed to the upper part. On each side of the boxplot, one outlier is located. The histogram indicates that the sample is distributed nearly normally.

In order to analyze the 3rd hypothesis for the *'Higher GDP Group'*, the post-crisis characteristics need to be summarized as well. As it is stated in Appendix 3 the mean growth rate for the liabilities of the International Investment Position of the *'Higher GDP Group'* declined by 0.1046 to 0.0593 in the aftermath of the crisis. With a standard deviation of 0.037 this changed slightly with respect to the previous period. However, the range is more allocated around the mean with a range of 0.11 from 0.00 to 0.11. This is actually interesting, because there seems to be at least one country that's growth stagnated in the aftermath of the crisis. The boxplot is slightly skewed to the lower part of the sample, but however, no unconformities can be found. The histogram at least follows a nearly normal distribution. After collecting all the information, the t-test for the difference in both means seems to be legitimate.

The respective change between the pre- and post-crisis means can be found in the *Table 6*. According to this, the change is about 0.1046 with a standard

Paired Samples Statistics[a]

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Averagebefore	.1639	13	.05025	.01394
	Averageafter	.0593	13	.03706	.01028

a. GDPgroup = 2 Higher

Paired Samples Test[a]

		Paired Differences					t
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper	
Pair 1	Averagebefore - Averageafter	.10460	.04116	.01142	.07972	.12947	9.161

Paired Samples Test[a]

		df	Sig. (2-tailed)
Pair 1	Averagebefore - Averageafter	12	.000

a. GDPgroup = 2 Higher

Table 6: Pooled t-test for the High GDP Group

deviation of 0.04116. While conducting the test, the responding t-value turned out to be 9.161 with a degree of freedom of 12, which leads to a significance level of below 0,001. The 3rd hypothesis for the *'Higher GDP Group'* seems to be statistically significant different. With an α-level that low, one is able to reject the null hypothesis. Also for the *'Higher GDP Group'*, there is a significant change of

the growth rates of the International Investment Positions' liabilities between the pre- and post-crisis period.

Comparison between the 'Lower GDP Group' and the 'Higher GDP group'

The two previous tests indicate that there is a significant difference for both groups between the pre- and post-crisis growth rates to the previous period means. Furthermore, both groups indicate that this change is significantly smaller in the post-crisis phase. Following the third hypothesis, the hypothesis still is that the *'Lower GDP Group'*, whose countries have been below the GDP average of the EU, is more affected by the economic crisis on the liabilities of the International Investment variable. In order to check this hypothesis, the main values for a test have already been identified in the previous part of this section.

The mean difference for the *'Lower GDP Group'* for the pre- and post-crisis period is 0.1381 with a standard deviation of 0.0701, whereas the *'Higher GDP Group'* mean difference is about 0.1046 with a standard deviation of 0.0446. Because the difference is calculated by the subtraction of the post-crisis means of the countries from the pre-crisis values, the corresponding sample size for both countries is 13, considering the fact that no values were published for France. Both groups are not related, which leads to the fact that one can apply a '*t-test for the independence between means*'.

Table 7 shows the results of the t-test. Within this output, the '*Levene's test for Equality of Variances*' is not significant, thus one needs to continue with the assumption that the variances are not equal. The respective difference between the two groups is 0.03348 with a standard error of 0.02255. Due to the fact that one cannot assume the equal variances, the respective t-value is about 1.485 with a degree of freedom that equals 19.397. The corresponding significance level of the two-tailed test is 0.154. Keeping in mind that the hypothesis is one-sided, this value needs to be divided by two, which results in the value 0.077. With a significance level of that size, the null hypothesis cannot be rejected. The

4th hypothesis thus does not turn out to be statistically different. At least on a statistical basis, the difference between the two test groups is not

Group Statistics

	GDPgroup	N	Mean	Std. Deviation	Std. Error Mean
Difference	1 Lower	13	.1381	.07010	.01944
	2 Higher	13	.1046	.04116	.01142

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
Difference	Equal variances assumed	2.008	.169	1.485	24	.151
	Equal variances not assumed			1.485	19.397	.154

Independent Samples Test

		t-test for Equality of Means			
		Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
				Lower	Upper
Difference	Equal variances assumed	.03348	.02255	-.01306	.08001
	Equal variances not assumed	.03348	.02255	-.01365	.08060

Table 7: Independent t-test for the Difference between Low and High GDP Group (Liabilities)

significantly different. Nevertheless, it is necessary that this group difference of the change between the pre- and post crisis period occurs only about 8 times out of 100. This probably should give an incentive to go into more detail, when it comes to the countries within the testing groups. Regarding the scope of the thesis, this should, however, be an incentive for further research in the future.

In a nutshell, this section was quite enlightening. It seems that a significant change hit all the 27 European Union members in the post-economic crisis period of 2007/08. The general trend of growth rates is smaller in the post-crisis period, which counts for both tested groups. The economic crisis seems to have influenced this change because it occurred in both of the groups. However, it is not possible to reject the null hypothesis of the fourth variable. Countries that indicate lower growth rates in the aftermath of the economic crisis are not statistically significantly higher affected in the post-crisis period. Nevertheless, it is important to mention that the difference in change between both groups is only occurring in about 7 out of 100 times, which seems to be a quite rare event.

Relating the Results to the International Investment Position

Now that the two parts of external activities have been concluded, it becomes clear that in both groups the impact of the economic crisis is measurable and the International Investment Position is diminishing. But for the two directions of external activities, the decrease actually implies different things for the external sector. Still, the question about the impact of the economic crisis on the International Investment Position has not been answered. Once again, one can refer to the statement of Lane (2012) about the external wealth of a nation's economy. In general, a rising asset position is healthy, whereas the opposite counts for the liability side. For this analysis, for both groups a decreasing of the assets and liabilities is determined. Compared to the pre-crisis period, the growth rates were diminishing which indicates consciousness among new investments. Even though the percentage of growth diminished for every side in both groups, some quite interesting conclusions can still be drawn from the results of this thesis. Regardless of the actual volumes of the assets and liabilities of the European countries, the trend in growth can be determined. The respective mean values and their mean differences were already mentioned in the previous sections.

Starting with the *'Low GDP Group'*, the mean difference in growth between pre- and post-crisis period is decreasing about 0.147 on the asset side and about 0.1381 on the liability side. The statistical results are shown in *Table 8.* It shows that the difference between the Asset and Liability Position does not differ for the '*Low GDP Group', because the p-value is with 0.67 higher than the necessary* α*–level of 0.05.* However, the difference in means indicates that the asset side declined more severely than the liability side. Referring to the statement of Lane (2012), the impact of the economic crisis, therefore, was negative because the asset side declined more severely than the liability side. Respectively, the net external position worsened of the countries within this group.

Paired Samples Statistics[a]

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	AssetDiff	.1469	13	.08877	.02462
	LiabDiff	.1381	13	.07010	.01944

a. GDP Group = 1.00 Lower

Paired Samples Test[a]

		Paired Differences					
					95% Confidence Interval of the Difference		
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t
Pair 1	AssetDiff - LiabDiff	.00879	.07317	.02029	-.03542	.05301	.433

Paired Samples Test[a]

		df	Sig. (2-tailed)
Pair 1	AssetDiff - LiabDiff	12	.672

a. GDP Group = 1.00 Lower

Table 8 : Independent t-test for the Difference in Assets' and Liabilities' Percentage of Growth (Low GDP Group)

A different effect occurred in the *'High GDP Group'.* Like for the 'Low GDP Group', both the asset and liability side show a significant decrease in the post-crisis period. The asset side diminished with a mean value of 0.0903, whereas the

Paired Samples Statistics[a]

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	AssetDiff	.0903	13	.04321	.01198
	LiabDiff	.1046	13	.04116	.01142

a. GDP Group = 2.00 Higher

Paired Samples Test[a]

		Paired Differences					
					95% Confidence Interval of the Difference		
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t
Pair 1	AssetDiff - LiabDiff	-.01434	.03337	.00925	-.03450	.00582	-1.549

Paired Samples Test[a]

		df	Sig. (2-tailed)
Pair 1	AssetDiff - LiabDiff	12	.147

a. GDP Group = 2.00 Higher

Table 9: Independent t-test for the Difference in Assets' and Liabilities' Percentage of Growth (High GDP Group)

liability side diminished about 0.1046. The results of the actual statistical test turn out to be not significant with a p- value of about 0.147. However, apart from the fact that the declines are lower compared to the *'Low GDP Group'*, it is

remarkable that the liability side decreases to a higher degree. With respect to the net external position and the statement of Lane (2012), this actually means that the effect of the economic crisis was positive for the wealth of the external position. The assets increased relative to the liabilities.

Without the statistical significance it is necessary to put emphasis on the result of the 5th hypothesis. It seems that the development of the external wealth differed between the two GDP groups and there is a slight trend that the groups are developing in opposite directions.

Conclusion

Throughout the previous sections, the external sector of the European member states was reflected. Regarding the fact that the transmission of the economic crisis was done via international linkages, it was important to analyze this position more closely.

The underlying changes in the external position actually underline the theory of Mankiw (2010). In periods of economic struggle, it seems that the attractiveness of external investments diminishes. Furthermore, it seems that investments are treated with more consciousness with regard to unforeseen risks. A proof for this is the actual comparison between the two different affected groups of the European members. Regarding the statistical significance of the assets, which are actual investments of the country in the rest of the world, it is right to say that countries with lower economic growth seem to face more significant declines than those countries that indicate higher growth rates in terms of economic growth. This is probably related to the risk factors. The post-crisis period therefore can be understood as a period in which investors were more resilient with investments in those countries, probably due to the risks that are connected with investments in more struggling countries.

With regard to the liabilities of the International Investment Position, one can say that a significant change occurred in the post-crisis period. With respect to the previous period, the growth rates of the liabilities were significantly lower, which actually means that the liabilities grew less in the post-crisis period compared to the pre-crisis period. However, the group comparison fails to reject the null hypothesis that the change between the group of low and high economic growth is significantly different from each other. In terms of the impact of the economic crisis, this means that a change between the pre- and post-crisis period occurred in both groups, but due to the fact that the result is about the same change, the different levels of economic growth out of the independent variable cannot be related to this change. All the European member states were facing the declines regardless of the economic growth in the post-crisis period. But as the

size of the difference between both samples occurs in only about 8 out of 100 times, this is a pretty rare event.

The two directions of the International Investment Position were important to evaluate the overall external economic wealth of a country. Lane (2012) states that an increase in assets is connected to an increase in external wealth, whereas the opposite counts for the liability part. The end results of this research can be related to that statement. The countries that indicate higher GDP growth rates in the post-crisis period, face an increase in the asset position in relation to the liability position. The external wealth increases. However, the same applies to the countries that composed the lower GDP group. Compared to the asset side, the liability part decreased less, which indicates that the growth rate of liabilities declined less than the asset side. This actually means that the liabilities gained more in share than the asset side did. This research indeed shows that between the two groups there is different development of the external sector between the two periods. As much as the different levels of the European economies already cause discussions about the present, the European Union needs to work on strategies how to deal with this status in the future. In this respect, a selection into a two-class system should be prevented and an ongoing integration with its political, legal and economical implications should be supported. This process of further unity gets especially important, if the statement of Eun & Resnick (2012) is considered that is dealing with strengthening of the European economy related to the United States, China, and Japan.

Several things still need to be mentioned with respect to the research. As it was stated in the introduction, the thesis has been an explorative approach to establish a relationship between the period of economic crises and the International Investment Position. Personally, there are two interesting directions for further research. On the one hand, the economic crisis should be identified in more detail. The economic growth might be a good predictor for the crisis, but as such, the impact of an economic crisis cannot be measured by the change in GDP, the implications are much more detailed and a complete model for the impact of the economic crisis would exceed the scope of the thesis. The

underlying idea would be an establishment of an economic model that could predict the impact of such an economic crisis on the economic systems of European member states. In order to do so, an in-depth analysis of the influential factors of national economies would need to be developed. The ultimate question in this regard is the causality between the International Investment Position and the economic crisis. Even though this research was suggesting an impact of the economic crisis on the International Investment Position, further analysis should clarify which variable depends on the other. The underlying concept would be the reverse causality. Another interesting field of research would be an in-depth analysis of the composition of the International Investment Position. As it is commonly known, the International Investment Position summarizes several statements, such as foreign direct investment, foreign portfolio investment, and other foreign investments. They differ with respect to their behavior during crises. Regarding this fact, it would be interesting to focus on these components in more detail. Another striking point of the analysis can be seen in the graphic expressions in the Appendix. For all these recommendations, the term of economic crisis and its impact should be reconsidered, because the aftermath of shock situations such as an economic crisis, the international Investments recovered in most cases within one year. In order to focus on the pure crisis effects, it would be necessary to break the time periods further down to pure crisis periods. However another problem is that the total impact of the economic is still not measurable, because the implications are still affecting the economies. It is difficult to forecast the end of the crisis, but probably the research would differ in 10 years.

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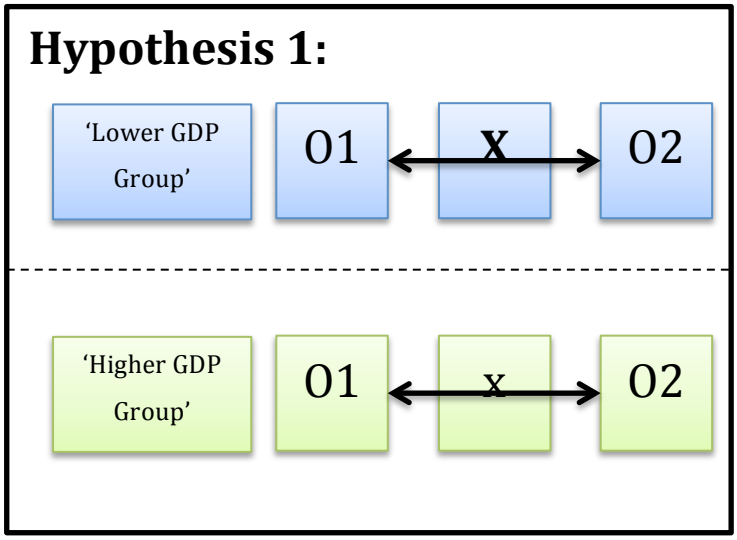
Appendix

Appendix 1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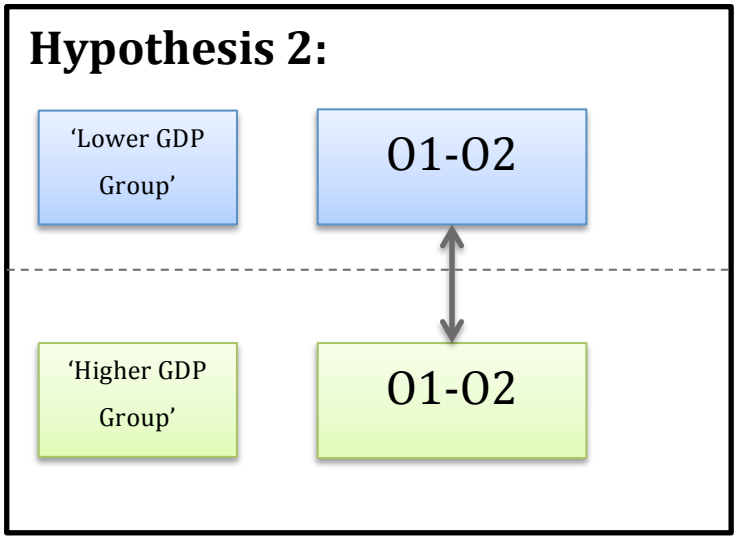
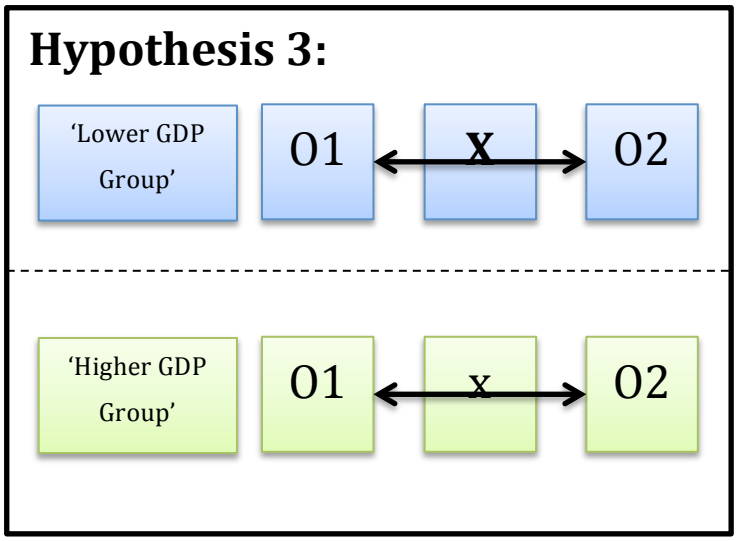
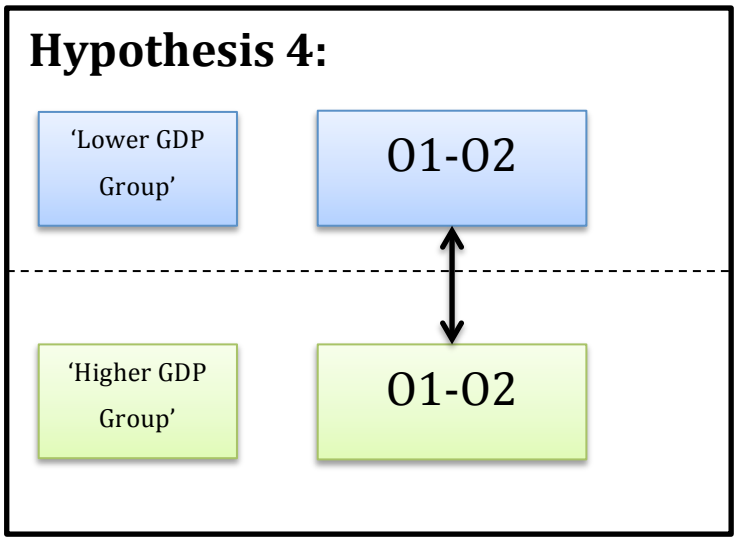
'Lower GDP Group'
01
X
02
'Higher GDP Group'
01
x
02


Hypothesis 2:
'Lower GDP Group'
01-02
'Higher GDP Group'
01-02


Hypothesis 3:
'Lower GDP Group'
01
X
02
'Higher GDP Group'
01
X
02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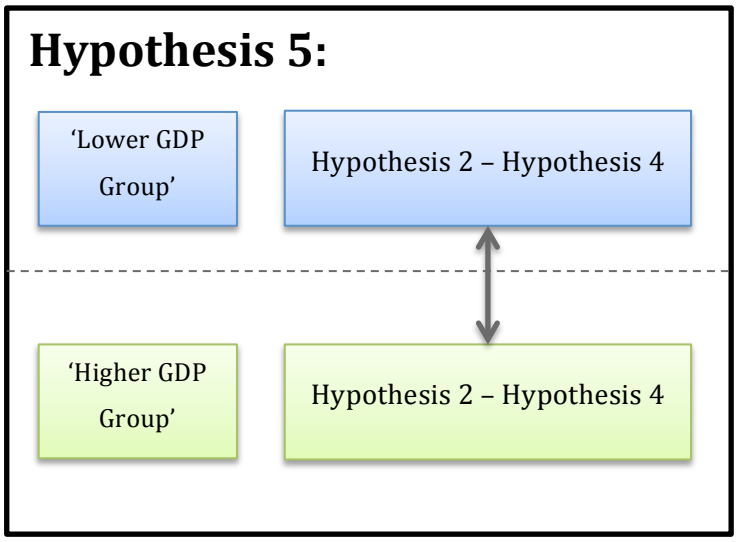
'Lower GDP Group'
01-02
'Higher GDP Group'
01-02


Hypothesis 5:
'Lower GDP Group'
Hypothesis 2 – Hypothesis 4
'Higher GDP Group'
Hypothesis 2 – Hypothesis 4

Appendix 2 – Assets Summary of the International Investment Position

Low GDP Group: Descriptives

GDPgroup = 1 Lower

GDPgroup

Case Processing Summary[a]

		Cases					
		Valid		Missing		Total	
	GDPgroup	N	Percent	N	Percent	N	Percent
Averagebefore	1 Lower	13	100.0%	0	0.0%	13	100.0%
Averageafter	1 Lower	13	100.0%	0	0.0%	13	100.0%

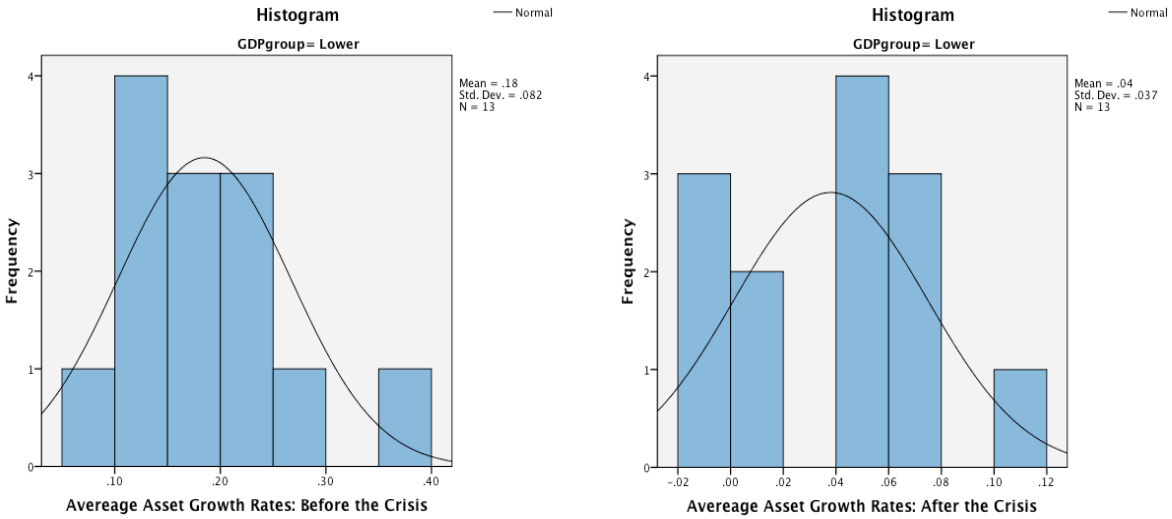
a. GDPgroup = 1 Lower

Descriptives[a]

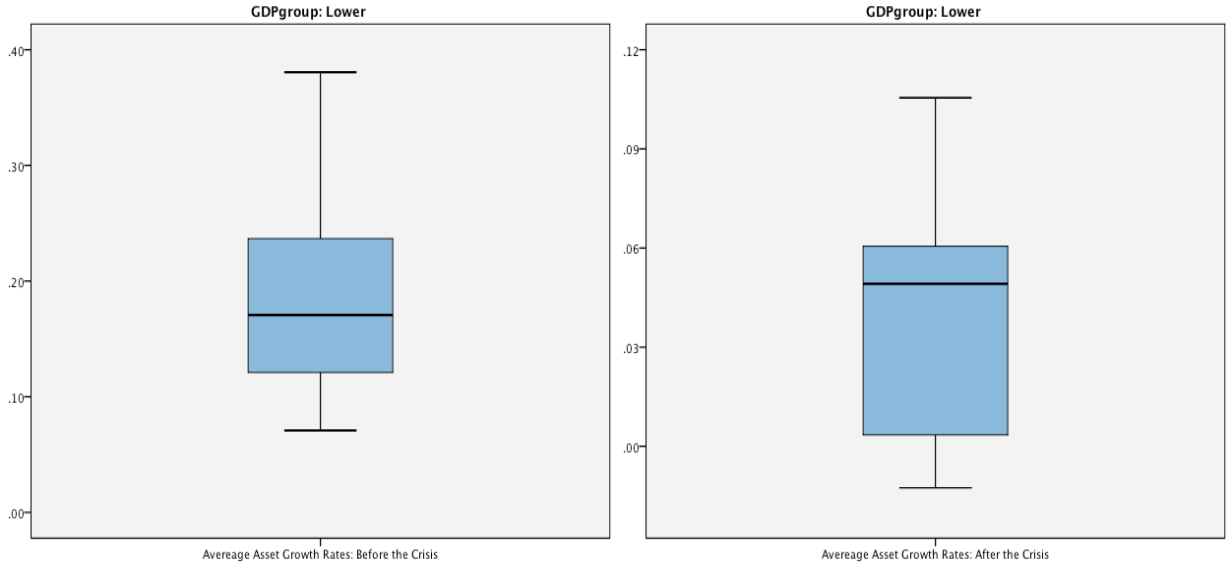
	GDPgroup			Statistic	Std. Error
Averagebefore	1 Lower	Mean		.1849	.02274
		95% Confidence Interval for Mean	Lower Bound	.1353	
			Upper Bound	.2344	
		5% Trimmed Mean		.1804	
		Median		.1707	
		Variance		.007	
		Std. Deviation		.08200	
		Minimum		.07	
		Maximum		.38	
		Range		.31	
		Interquartile Range		.12	
		Skewness		1.027	.616
		Kurtosis		1.465	1.191
Averageafter	1 Lower	Mean		.0380	.01024
		95% Confidence Interval for Mean	Lower Bound	.0157	
			Upper Bound	.0603	
		5% Trimmed Mean		.0371	
		Median		.0492	
		Variance		.001	
		Std. Deviation		.03692	
		Minimum		-.01	
		Maximum		.11	
		Range		.12	
		Interquartile Range		.06	
		Skewness		.040	.616
		Kurtosis		-.985	1.191

a. GDPgroup = 1 Lower

Low GDP Group: Pre- and Post-Crisis Histograms



Low GDP Group: Pre- and Post-Crisis Boxplot



High GDP Group: Descriptives

GDPgroup = 2 Higher

GDPgroup

Case Processing Summary[a]

		Cases					
		Valid		Missing		Total	
	GDPgroup	N	Percent	N	Percent	N	Percent
Averagebefore	2 Higher	13	92.9%	1	7.1%	14	100.0%
Averageafter	2 Higher	13	92.9%	1	7.1%	14	100.0%

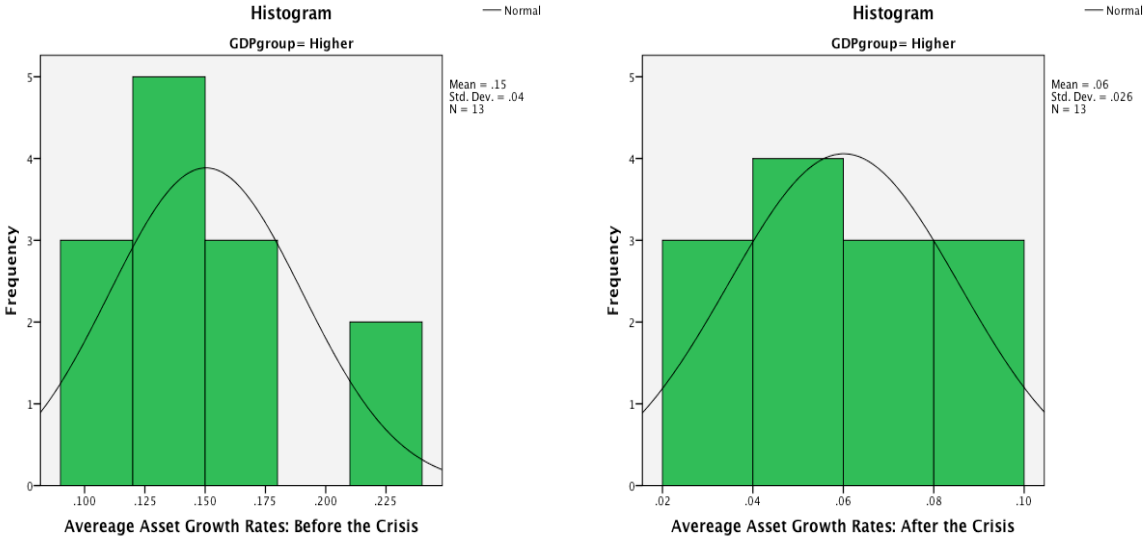
a. GDPgroup = 2 Higher

Descriptives[a]

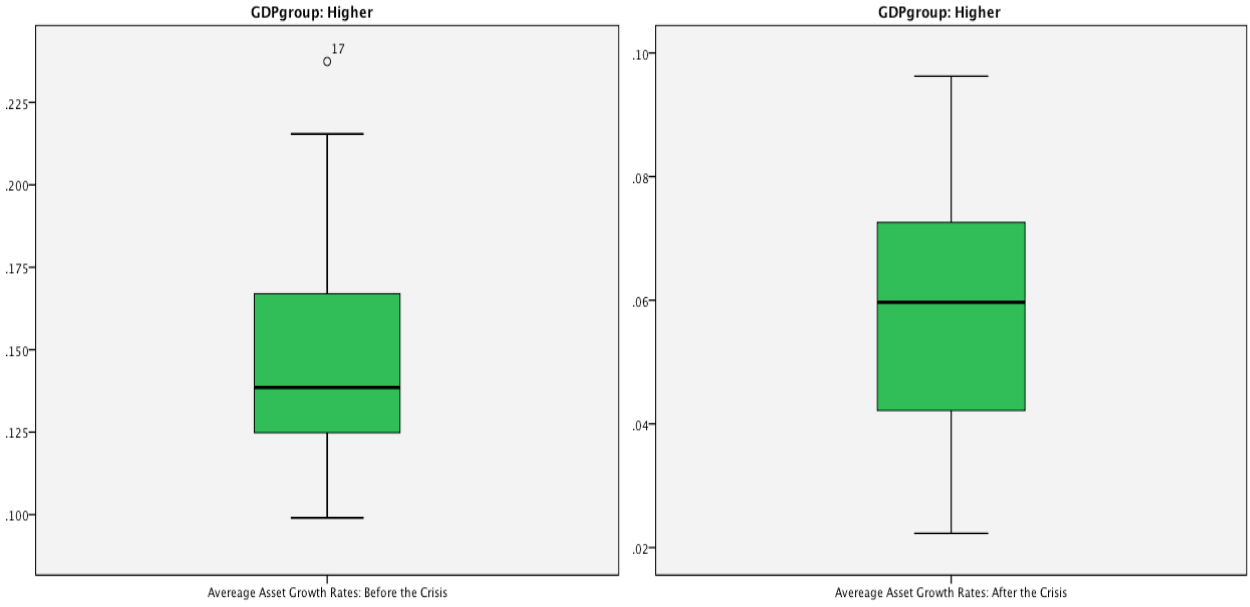
	GDPgroup			Statistic	Std. Error
Averagebefore	2 Higher	Mean		.1503	.01111
		95% Confidence Interval for Mean	Lower Bound	.1261	
			Upper Bound	.1745	
		5% Trimmed Mean		.1483	
		Median		.1385	
		Variance		.002	
		Std. Deviation		.04004	
		Minimum		.10	
		Maximum		.24	
		Range		.14	
		Interquartile Range		.05	
		Skewness		1.058	.616
		Kurtosis		.724	1.191
Averageafter	2 Higher	Mean		.0601	.00709
		95% Confidence Interval for Mean	Lower Bound	.0446	
			Upper Bound	.0755	
		5% Trimmed Mean		.0602	
		Median		.0597	
		Variance		.001	
		Std. Deviation		.02556	
		Minimum		.02	
		Maximum		.10	
		Range		.07	
		Interquartile Range		.05	
		Skewness		-.158	.616
		Kurtosis		-1.031	1.191

a. GDPgroup = 2 Higher

High GDP Group: Pre- and Post-Crisis Histograms



High GDP Group: Pre- and Post-Crisis Boxplots



Appendix 3 – Liabilities Summary of the International Investment Position

Low GDP Group: Descriptives

GDPgroup = 1 Lower

GDPgroup

Case Processing Summary[a]

		Cases					
		Valid		Missing		Total	
	GDPgroup	N	Percent	N	Percent	N	Percent
Averagebefore	1 Lower	13	100.0%	0	0.0%	13	100.0%
Averageafter	1 Lower	13	100.0%	0	0.0%	13	100.0%

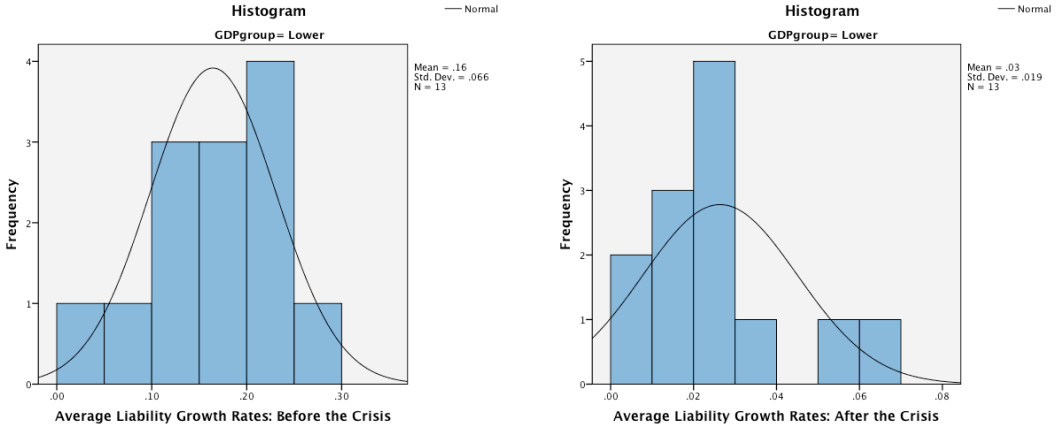
a. GDPgroup = 1 Lower

Descriptives[a]

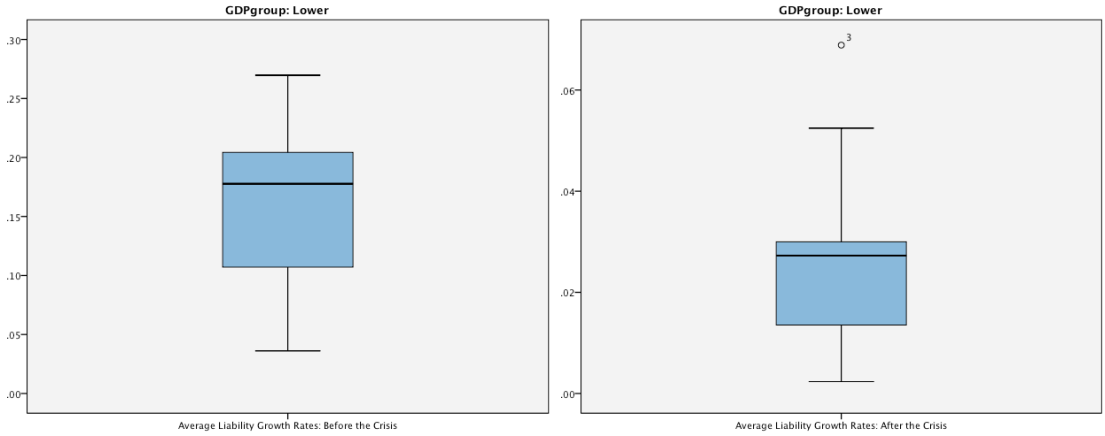
	GDPgroup			Statistic	Std. Error
Averagebefore	1 Lower	Mean		.1645	.01836
		95% Confidence Interval for Mean	Lower Bound	.1245	
			Upper Bound	.2045	
		5% Trimmed Mean		.1658	
		Median		.1777	
		Variance		.004	
		Std. Deviation		.06620	
		Minimum		.04	
		Maximum		.27	
		Range		.23	
		Interquartile Range		.11	
		Skewness		-.400	.616
		Kurtosis		-.416	1.191
Averageafter	1 Lower	Mean		.0264	.00517
		95% Confidence Interval for Mean	Lower Bound	.0151	
			Upper Bound	.0377	
		5% Trimmed Mean		.0254	
		Median		.0273	
		Variance		.000	
		Std. Deviation		.01865	
		Minimum		.00	
		Maximum		.07	
		Range		.07	
		Interquartile Range		.02	
		Skewness		.951	.616
		Kurtosis		1.116	1.191

a. GDPgroup = 1 Lower

Low GDP Group: Pre- and Post-Crisis Histograms



Low GDP Group: Pre- and Post-Crisis Boxplot



High GDP Group: Descriptives

GDPgroup = 2 Higher

GDPgroup

Case Processing Summary[a]

		Cases					
		Valid		Missing		Total	
	GDPgroup	N	Percent	N	Percent	N	Percent
Averagebefore	2 Higher	13	92.9%	1	7.1%	14	100.0%
Averageafter	2 Higher	13	92.9%	1	7.1%	14	100.0%

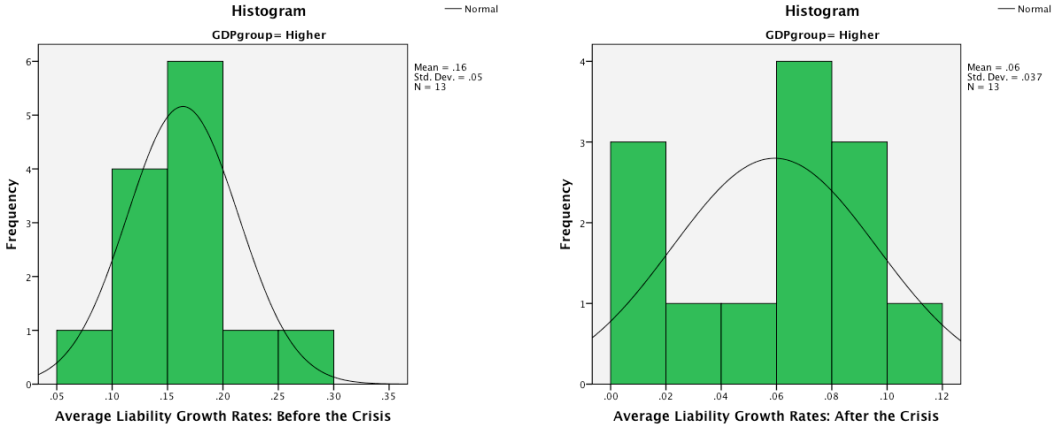
a. GDPgroup = 2 Higher

Descriptives[a]

	GDPgroup			Statistic	Std. Error
Averagebefore	2 Higher	Mean		.1639	.01394
		95% Confidence Interval for Mean	Lower Bound	.1335	
			Upper Bound	.1942	
		5% Trimmed Mean		.1631	
		Median		.1600	
		Variance		.003	
		Std. Deviation		.05025	
		Minimum		.08	
		Maximum		.26	
		Range		.18	
		Interquartile Range		.06	
		Skewness		.370	.616
		Kurtosis		.131	1.191
Averageafter	2 Higher	Mean		.0593	.01028
		95% Confidence Interval for Mean	Lower Bound	.0369	
			Upper Bound	.0817	
		5% Trimmed Mean		.0597	
		Median		.0644	
		Variance		.001	
		Std. Deviation		.03706	
		Minimum		.00	
		Maximum		.11	
		Range		.11	
		Interquartile Range		.07	
		Skewness		-.439	.616
		Kurtosis		-1.022	1.191

a. GDPgroup = 2 Higher

High GDP Group: Pre- and Post-Crisis Histograms



High GDP Group: Pre- and Post-Crisis Boxplots