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1. INTRODUCTION

The euro zone is currently facing the most severe situation in the history of the currency, namely the sovereign debt crisis. With the ongoing turmoil in Greece, they are at the center of the crisis, and recently de facto defaulted on their debt held by the private sector. Relative to other euro zone members, Greece has been most adversely affected. Thus there must be some underlying differences between Greece and other Member States. Joining the Economic and Monetary Union ("EMU") represented a significant alteration of the institutional setup in Greece. These included the loss of conducting an independent monetary policy and the automatic stabilizers inherent in having one's own currency. Further it meant that Greece could now get easy access to financial markets and borrow at unusually low interest rates, allowing it to run large budget and current account deficits (Brissimis et al. 2010: 8). Additionally, the changes had severe consequences for the functioning of the Greek political economy. Economists disagree over the best prescription for Greece, but recently the mood has tilted toward that Greece must leave. Even Otmar Issing, one of the main architects of the euro and former executive board member of the European Central Bank, recently said that: “[Greece has] to decide, but there might be no alternative than to leave” (Lawton, WSJ 2012). Others, such as Angela Merkel and Francois Hollande, German Chancellor and French President, respectively, have reiterated their desire for Greece to work out their problems while still a Member State (Velde, CNBC 2012).

The purpose of this paper is to evaluate this debate and answer whether Greece should still be part of the euro zone. Thus the research question is:

Does the euro zone represent an optimum currency area, and further, to what extent is it still reasonable for Greece to be part of the Economic and Monetary Union?

After reaching a conclusion to this research question, we will suggest a course of action for Greece in the short- and long run. This paper is focused on an action-oriented approach, so that we can suggest a course of action for Greece. The focus of the paper will be on the Greek national interests only.

The area of study investigated in this paper is highly relevant for a number of reasons. First, the Greek dilemma affects the entire euro zone and has the capacity to shake the foundation on which the monetary union is built. How the Greek crisis is resolved will set precedence for other struggling euro zone members. Second, the general level of media attention the situation in Greece has received is enormous. This alone warrants academic focus. Finally, and most importantly, the issues are of great importance to Greece as a society and as an economy. The future of the Greek political economy relies heavily on the outcome of the current situation, as
the way in which Greece emerges from the crisis will shape its institutional setting for decades to come. This last reason is where we will focus our attention.

The paper represents the interconnectedness of the different fields of study within economics, politics, and management. Economic decisions can never be separated from the world of politics and vice versa, thus for us to advise on a prudent course of actions, we must look at the entire set of political economy field. Additionally, we will look at the managerial part by trying to anticipate actions that must be taken for businesses to want to invest in Greece going forward.

2. METHODOLOGY

The purpose of this chapter is to outline the methodology of the paper. A reflection on philosophy of science is essential, because the underlying ontological and epistemological considerations will affect how we choose to answer our research question. Consequently it will influence the methods, empirical sources as well as choice of theory. This will be further clarified in the following sections. Finally, this chapter will outline the delimitations and structure.

2.1. Philosophy of Science: Ontological and Epistemological Considerations

“The alternative to philosophy is not no philosophy, but bad philosophy” (Collier 1994 cited in Dobson 2002).

Philosophy of science is concerned with metaphysical positions, and it is the highest level of abstraction in the realm of social science. In essence, there are different ways of knowing. Whether deliberate or not, the questions of philosophy of science have always intrigued mankind. “What is the world really made of?” and “what is knowledge?” (Moses and Knutsen 2007: 5). These questions are related to ontology and epistemology. The former is the study and theory of being, and is concerned with existence in the world and how to uncover reality. The latter is the study and theory of knowledge, i.e., how and what we know about the world. These two concepts are fundamental to philosophy of science. Different ontological and epistemological perspectives will encourage different methods to study a phenomenon of interest. Since this paper will adopt multiple methodological perspectives, we will follow the logic of Moses and Knutsen (2007: 6) and treat philosophy of science positions as jackets, rather than skins. It must be stressed that it is important to reflect upon how the underlying philosophy of science corresponds to the methods used in a study. Before we do this, there will be a brief summary of the main elements of the two positions of this paper, namely the naturalist and critical realist perspectives.


2.1.1. Naturalism

Naturalism is still the dominant perspective in social science (Moses and Knutsen 2007: 10). It originates from the world of natural science, and this is clearly reflected in its ontology and epistemology.

Regarding ontology, it is believed that the social world exists independently of those trying to observe it. Further, reality is characterized by patterns and a high degree of regularity. Thus, in social science, we can observe the real world and discover these regularities (ibid). This is connected to the epistemology of naturalism, i.e., we can base our knowledge on regularities of the social reality, and in turn infer causal laws and also predict events. Through objective and systematic observation, we can find the truth of the real world (ibid). This is evident in the methodology of naturalism, and more specifically, it gives rise to a hierarchy of methods. Here it is clear how naturalism uses traditional methods from the natural science, and applies them to the social world. The ideal method is the experimental design, however, it is rarely possible within social science. Thus naturalists often turn to the statistical method, but sometimes, e.g. because of no prior experience, this is not a possibility, and here we must take a further step down the hierarchy and use comparative or case-study methods.

We include the naturalist perspective because we take a lot of the observations at face value. These observations consist of a large amount of statistical data and we assume that these observations correspond to reality in the Greek economy. Additionally, we will apply a generalizing theory and attempt to provide analytical explanations of the Greek economy through this framework founded on generalizations.

2.1.2. Critical realism

Critical realism is a position within philosophy of science that places itself between naturalism and constructivism. According to Benton and Craib (2011), the most complete outline of the position is the one provided by Roy Bhaskar in The Possibility of Naturalism (1979). The ontological position of critical realism is similar to that of naturalism, as it acknowledges that there is a real world. However, this reality is deep and complex with many layers. According to critical realism, reality has three layers: the “real” world of mechanisms and power, the “actual” level of flows and the “empirical” level of observed events (Benton and Craib 2011). To explain these levels, it makes sense to relate it to the naturalist position. For example, a pure naturalist would only recognize the “empirical” level. Critical realists demonstrate the reality of the third
level – the “real” world (ibid). Critical realists thus argue that reality is layered, with each layer constituting its own separate reality.

The position of critical realism is founded on the concept of transcendental questions. Transcendental questions are constructed by asking: “what must the world be like for a phenomenon $p$ to be possible?” Inherent in these questions is a search for the underlying structure in society – that is, events and mechanisms that make the observation possible.

Critical realism has also introduced a new mode of reasoning, namely retroduction. This epistemological process is closely related to transcendental arguments. Sayer (1992: 107) describes it as a "[...] mode of inference in which events are explained by postulating (and identifying) mechanisms which are capable of producing them [...]" This is part of the epistemological position of critical realists. As opposed to naturalists, they do not believe that a single, ultimate truth can be discovered. Instead they believe that the knowledge we attain is never definitive and, as such, it is difficult for knowledge to be predictive of events.

There are several reasons why we have included critical realism in our section on philosophy of science. The first is that our topic of research is, in itself, complex and not easily understandable through mere observation. Another is that the knowledge available about a possible euro exit is incomplete, thus making it difficult to make universal claims.

It should be noted that we are not trying to apply the two methodological perspectives at separate sections of the paper. We have included two perspectives because they have both contributed to our process. Naturalism has added through our objective observation of data while critical realism has added depth with its notion of a layered reality.

2.2. Methods

As the purpose of the paper concerns the interests of Greece, it is natural for us to employ the case study method. Although it is the lowest step in the naturalist hierarchy of methods, it is the most appropriate for our research design. We do use a lot of data from various sources, but since we are not testing hypotheses or building inferential models, the statistical method is not fitting.

The case study method allows us to study all the relevant details. It is an exhaustive method, which will give depth to the paper. The common critique that this method will not allow us to generalize to other cases is not of much concern to us. Although other struggling EMU members could gain from our research, the purpose of this paper is to advise Greece. Additionally, we adopt a multiple philosophy of science perspective and stating generalizations is not something we aim to do. From the naturalist perspective, it is impossible to make generalization on the
basis of a single case study. Further, given the complexity of the phenomenon of interest, a critical realist would not try to make universal claims.

We do not attempt to make generalizations about an appropriate course of action for any member state wanting to exit the euro zone. Rather, we only provide suggestions for Greece and its unique situation. Generalizations for the rest of the euro zone are beyond the scope of this paper.

2.3. Empirical Sources

Empirical sources in the form we use here mainly come from official institutions. Our empirical sources include a wide range of academic papers and books. Furthermore, for a lot of up-to-date data, we rely on international and national databanks. Mainly, but not limited to, the World Bank, IMF, Eurostat, the ECB, Bank of Greece, Bank of International Settlements, the Hellenic Statistical Authority, and the Federal Reserve. Finally, some of the legal aspects take their origin in various laws and legislation, e.g. the Treaty on the European Union.

Following Rankean quellenkritik (Moses & Knutsen 2007: 120), it is important to note one thing in particular. The data published from the Hellenic Statistical Authority, and the Greek authorities in general, around the Greek adoption of the euro have been criticized for not being reliable. The reason we have chosen to use the data anyhow is twofold, (i) because the data from 1990 and to now represent an important part of our analysis, and (ii) Eurostat and the IMF has conducted post-analysis of the numbers. We therefore assume that we can trust them, as they have been corrected.

2.4. Choice of Theory

In order to judge whether Greece should still be part of the EMU, we must first assess the functioning of the entire euro zone. In order to analyze the euro zone, we will apply Mundell’s (1961) theory of Optimum Currency Areas (“OCA”). OCA theory is the foundation of much of the macroeconomic study of currency areas. Using this theory, we can analyze the performance of the entire euro area and more specifically whether Greece benefits from participation. The assumptions of OCA theory are suitable for the underlying philosophy of science of naturalism, since it is a generalizing theory with clearly defined criteria’s. Hence it follows the idea that reality is characterized by regularities and patterns which we can discover by objective and systematic observation.
The LL-GG model (Krugman et al. 2011: 596-602) is built upon the logic of OCA, but is, unlike OCA, country specific. To analyze the Greek situation, it is thus useful to use the LL-GG framework. We need a way to assess whether the euro is right for Greece. Having decided whether Greece should stay a member of the euro or break off, we will suggest a course of actions in the short- and long-run. We will take a managerial perspective in the short-run, and apply the SSA theory to suggest a path forward in the long run.

In the short-run, we apply prospect theory from a managerial perspective, and evaluate how the Greek politicians should manage the severe situation at hand. Also from a management view, we analyze how businesses make investment decisions and how these insights can be used to create a favorable investment environment in the political economy of Greece prospectively.

Social Structure of Accumulation (“SSA”) theory provides us with the tools necessary to understand the deeper complexities of the Greek institutional setting. The theory was developed to explain the long periods of economic growth and subsequent stagnation throughout history (McDonough et al. 2010: 1). As such, it is a theory that lends itself well to analyzing periods of economic crisis. The idea that a country, to obtain economic growth and stability, must be in a power equilibrium between different actors of society is not satisfied with purely economic theory. While the managerial perspectives might give us an answer to the issue of short-term solutions needed, they do not incorporate institutional change. SSA theory does that, and we will use it to suggest institutional changes and structural reforms necessary for Greece to, once again, grow as a society. SSA theory relates to a critical realist perspective on philosophy of science, as it uses underlying institutional structures and mechanisms to explain economic growth.

We could also have used the Varieties of Capitalism (“VoC”) approach developed by Hall and Soskice (2001), but since we are analyzing a crisis situation and dealing with institutional changes, the more static VoC framework falls short.

### 2.5. Delimitations

Because of Europe’s devastating history of war and conflict, there has been a clear and evident political goal of European leaders to promote integration and unite the EU behind a common currency. Partiality towards maintaining the euro for political purposes will not be part of the analysis; instead we will solely base our suggestions with respect to the Greek national interests.

Regarding philosophy of science, it is important to mention that we will not draw on constructivist approaches with considerations of ideas, national identity, discourses, etc. Since
the phenomenon of interest is rather quantitative, it will be more rewarding to use the methodology of naturalism and critical realism.

2.6. Structure

The paper is structured in the following way:

Chapter 3 “Analysis: Greece in the euro zone” is the central part of this paper. Here we analyse whether the political economy of Greece should still remain part of the euro zone. The first section will explain the current situation in Greece and the dire condition of their economy. The information presented in this section will later be used in the analysis. Subsequently we examine the preparation phase in Greece before the introduction of the euro, and question whether they were ready to be part of the EMU in the first place. In order to evaluate the entire euro zone, we use the OCA theory and find that the euro zone is not an OCA, and further that there is a clear distinction between a core and a periphery. These insights will then be used in the country specific LL-GG framework, in order to determine whether it is still reasonable for Greece to be part of the EMU. Before the final conclusion, we assess the consequences of leaving the euro zone. In the part conclusion, we summarize our findings and conclude that it is no longer reasonable for Greece to be part of the euro zone.

Chapter 4 “A suggested course of action for Greece” is based on the conclusions we reach in the previous chapter and it is split into short- and long-term solutions.

The short-term section is mainly based on the severe consequences of leaving the EMU, and will take a managerial perspective. We use prospect theory, in which we explain the reluctance of Greek banking deposits to be moved out of Greece. We use this theory to explain why, in a break-up, decision-makers must act quickly to avoid a bank-run.

The long-term section will use the SSA theory, and present our solutions to the structural problems in Greece. After presenting the theory and concepts we apply, the next subsection will focus on capital reforms needed to maintain a stable circuit of capital. Here we will mostly stress the direction of investments in Greece and how to encourage reinvestment of profits to capital. Following this, we include a subsection on labor reforms needed to reduce unemployment.

3. ANALYSIS: GREECE IN THE EURO ZONE

This is the main part of the paper, where we will answer our research question. The knowledge attained from this analysis will subsequently be used to suggest a course of action for Greece in the short- and long-term.
3.1. Current Situation in Greece

The current situation in Greece is both dire and serious. Most are aware because of significant media attention, but when one digs into the numbers, a rosier picture does not emerge. Here is a quick overview.

3.1.1. The budget deficit, GDP growth, and the current account

Government expenditures have been sliced significantly since 2009, basically since the debt crisis began. According to the Federal Reserve (2012), the year-on-year decrease of government spending was more than 10% both in 2010 and 2011. Greece has had to cut to get help from the EU and IMF, but also to afford its spending. This has put enormous pressure on GDP growth, which has tanked. According to the IMF (2012b: 191) Greece’s real GDP growth was 0.1% in 2008; -3.3% in 2009; -3.5% in 2010; and -6.9% in 2011. According to Reinhart and Rogoff (2009), one way to return to growth from a financial crisis is to become a net exporter. Greece starts out from a very bad position. In fact, since 1982, Greece has not run a current account surplus (Brissimis et al. 2010: 8). The period until 1999, though, was characterized by small deficits. After the euro was introduced, Brissimis et al. (2010: 8) write that: “Since 1999, however, a dramatic deterioration of the Greek current account balance has been observed, with the external deficit reaching on average 11.2 percent of GDP”. This coincides with the introduction of the euro. The IMF (2012b: 209) projects Greece's current account to be -7.4% of GDP in 2012, thus netting it a gain in growth, something that is affirmed by its country report (IMF 2011), although Greece is still far away from a current account surplus.

3.1.2. Unemployment

Unemployment – which might be the most important indicator for the Greek people and is measured by the Hellenic Statistical Authority (2012) – stands at a staggering 21.7%. Youth unemployment for people between 15 and 24 years is at 53.8%. This is, obviously, the biggest cost of the Greek crisis, as people who cannot find work get discouraged, lose skills, and drop out of the work force. Furthermore, it makes people draw down on their savings, decrease aggregate demand, and increase the government budget deficit as tax revenue decrease and social expenditure increase (e.g. unemployment benefits). Whereas financial indicators might have an indirect effect, everyone feels unemployment. For comparison, the German unemployment rate was 6.0% by the end of 2011 according to the IMF (2012b: 53), showing the two-tier economy that has emerged inside the euro zone.
3.1.3. Greece’s debt

The conditions in Greece right now can most accurately be described by chaos and economic deterioration. Greece recently went through a debt restructuring with private bondholders (called private sector involvement or “PSI”), in which Greece’s debt was written down from 100 cents on the euro to 21.5\(^1\) i.e., instead of being paid back all 100 of principal, one would get 21.5. Furthermore, the coupons were reduced and maturities extended. However, because it was only private sector debt-holders whose debt was written down, Greece’s debt-to-GDP ratio at the end of 2011 was 165.3 % (Eurostat 2012a), and according to the IMF (2012a: 67) is projected to be 153.2 % by the end of 2012 and 136.8 % in 2017. Not a significant change, and highly unsustainable (interest rate costs are more than 13 % of government expenditure in Greece according to Eurostat [2012b]). Greece’s debt, now mainly held by official institutions (see chart 1 from an unpublished UBS research note), leaves little room for more debt restructuring without involving the official sector, and especially the ECB has been wary of taking haircuts because it would mount to monetization. Greece is thus, for now, left with little maneuvering with its debt profile, courtesy of the EU and international institutions.

So government debt in Greece is, in short, terrible and with no improvement in the near (or distant) future. Greek household’s debt-to-disposable-income is one of the few good metrics, standing at 40 % in 2009, although credit to households have tightened significantly, and the composition of their debt, with high share of consumer credit, is unfavorable to peripheral peers (IMF 2011: 6). Banking deposits have largely fled the country, thus shrinking the capital base of the banks to make loans, which has tightened credit further (IMF 2011: 30). Total deposits at Greek banks have fallen more than 15 % year-over-year since 2009. Athanassiou (2012) finds, furthermore, that domestic demand has gone from a net positive on growth to net negative, largely because of the decrease in credit expansion.

3.1.4. Interest rates

We would argue that, because of the euro, the current account deficit was possible due to large money inflows and a low interest rate (see appendix 1 for selected euro member countries’ 10-year bond spread to Germany). When the euro was introduced, the spread between what euro

\(^1\) 21.5 cents on the euro is the number from the credit default swap auction (see Markit 2012).
members paid in interest to borrow to finance their budget deficits and service their debt fell to essentially zero. That has changed, dramatically. It has important repercussions for Greece’s ability to borrow in the financial markets (which it cannot) and its creditworthiness. As of this writing, according to Financial Times’ Market Data, Greece has to pay an annual interest rate of 24.1 % on its 10-year bond. That is, after the restructuring of its debt. Essentially, Greece is unable to access markets without help from official institutions.

3.1.5. Inflation

Inflation, measured by the CPI, is on the face of it one of the success stories for Greece (see appendix 2 for a historical inflation chart). However, even though Greece's inflation rate has averaged 3.3 % since joining the euro in 2001, as opposed to 9.4 % in the ten years leading up to, and 11.9 % from 1961 to 1990, Greece has run a higher inflation than most of the euro zone. To quantify, see chart 2 in which we have calculated the spread of inflation, measured by Greek inflation minus the inflation rate of the big four countries in the euro zone (Germany, France, Italy, and Spain).

This is important because it shows how Greece has lost competitiveness due to price increases and higher wages relative to especially Germany. Directly measured vis-à-vis Germany since 2001, Greece's inflation has risen, on average, 1.9 % more than Germany’s per year. Since 2008, Inflation (CPI) averaged 3.3 %, according to the IMF (2012b: 199), and is projected to be -0.5 % in 2012 and -0.3 % in 2013. Deflation, in which wages decrease to regain competitiveness, is part of the internal devaluation that is one of the only options for Greece at the moment.

It is important, and obvious, to just note one thing. When one cuts government spending, the current account is negative, and money does not flow into Greece, then it is hard to grow, especially because of the shared currency, which makes it impossible to devalue vis-à-vis Northern Europe and keeps its currency high against the outside world. To regain competitiveness while still a member of the euro, Greece will have to undergo substantial

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2 CPI inflation rates are from the World Bank database, with calculations by the authors
deflation against the northern countries (most notably Germany). The spread, as shown in chart 2, will have to be negative for a substantial time. It is hard to decrease nominal wages due to price rigidity (Blanchard 2009: 216), and if Germany is unable or unwilling to run higher inflation, this process is highly painful, because it requires high unemployment and no wage growth for years.

3.2. Preparing for the Euro

An important issue to consider when discussing the Greek euro membership is whether or not Greece was ready to adopt the euro in the first place. This section of the paper describes the preparation phase leading up to adopting the common currency.

The euro was launched as a common currency in 1999 where the original 11 members introduced it. As part of the preparation phase, participating states were required to uphold the five convergence criteria set up by the Maastricht Treaty: a budget deficit of no more than 3 percent of GDP; public debt of no more than 60 percent of GDP; a level of inflation no more than 1.5 percentage points above the average level achieved by the three states with the lowest inflation; interests rates that were no more than 2 percent above the average level of the three states with the lowest levels; and upholding the currency fluctuation margins for 2 years (Bache et al. 2011: 405). The Council Decision of May 1998 stated that Greece did not fulfill the criteria (Council Decision 98/317/EC), so Greece joined the revised Exchange Rate Mechanism (ERM-2) until 2001 where the euro finally replaced the drachma (Bache et al. 2011: 408). Thus, Greece was allowed to adopt the euro following a Decision as of June 2000 stating that they were now upholding the criteria (Council Decision 2000/427/EC).

Although the criteria could be relaxed if a state was moving in the right direction on relevant indicators (Bache et al. 2011: 405.), most struggled to meet the goals, including France, Germany, and Greece (Bache et al. 2011: 410). On the surface of it all, Greece seemed to comply with the criteria. It seemed they had been able to rein in their debt, boost their GDP, and control their level of inflation, thus enabling them to adopt the euro in 2001 (Council Decision 2000/427/EC). However, in recent years criticism has been voiced of Greece’s preparations, particularly regarding the statistical publications that stated Greece’s compliance with the convergence criteria. Eurostat has investigated the numbers reported in the years between 1999 and 2001 and found that significant omissions were made from the budget. Large expenditures for the military and hospitals were not included (Balzli, Der Spiegel 2010). Additionally, it has been discovered that Goldman Sachs helped Greece with credit while circumventing the deficit rules by using currency swaps with fictional exchange rates (ibid.). At a more general level,
when the Greek statistics in the preparation years are compared to Benford’s Law\(^3\) the numbers look particularly odd (Harford, Financial Times 2011).

These issues contribute to considerable confusion regarding whether or not Greece was actually ready to adopt the euro. For example, although the Council decided that Greece was fulfilling the criterion limiting the debt-to-GDP-ratio to no more than 60%, the OECD now report levels equal to 94.9% and 104.4% in the years 1999 and 2000, respectively (OECD 2011). Despite the confusion, much of it does suggest that, according to the convergence criteria, Greece was not ready to join the euro.

### 3.3. Theory: Optimum Currency Area and LL-GG Framework

This subsection will elaborate on the theories applied in the paper.

#### 3.3.1. A Theory of Optimum Currency Areas

During the 20th century several countries experimented with fixed exchange rate systems by either fixing their currency to gold or to another currency. Despite the possibility of learning from the past experiences, there still seems to be no clear consensus on whether or not it is beneficial to be part of a fixed exchange rate regime (Willett 1999; Dellas and Tavlas 2009). The introduction of the euro represents a prominent example of countries fixing their exchange rates behind a common currency. The impossible trinity (Krugman et al. 2011: 678) implies that, when countries allow for free capital flows and further fix their exchange rate, they must in turn give up their sovereign monetary policy. Additionally, they lose the automatic stabilizers inherent in a floating exchange rate. These costs can be quite significant, especially if the countries do not have symmetric business cycles or share macroeconomic conditions in general.

To determine whether a region is suited for the abovementioned constraints, we use the theory of optimum currency areas (“OCA”). It was originally developed by the influential economist Robert Mundell (1961). It lists a set of characteristics that regions should ideally contain in order to be an “optimum currency area”. There have been numerous developments within macroeconomic theory since, and George Tavlas (1993) follows this evolution and the implications for the OCA theory. Building on OCA theory, with contributions from Tavlas (1993),

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\(^3\) Benford’s Law in statistics states that out of all observations, about 30% should start with the digit “one” (e.g. 1,034 or 1,675). It is a curious law, but surprisingly accurate. Manipulated data usually fail to satisfy Benford’s Law.
we get the following: A revised summary of the important characteristics of potential participants in a fixed exchange rate regime:

1) **Similarity of economic structures and asymmetric shocks** – similar production structures will yield similar shocks.

2) **Similarity of inflation rates** – If the inflation rates are incongruent, the likelihood of disequilibrium in current account transactions will increase.

3) **Degree of factor mobility** – High factor mobility i.e. mobile capital and labor, is seen as an imperative for monetary integration, since it will act as a substitute for the stabilizing effect of exchange rate flexibility.

4) **Fiscal integration** – the higher level of fiscal federalism the better, since this can be used to smooth out potential asymmetric shocks. This will imply some kind of fiscal transfer system as we know from the US.

George Tavlas (1993: 663) explains how OCA theory was once dismissed as scholarly speculation, but because of contemporary fixed exchange rate systems such as the euro zone, it has been revived and is again a significant part of the academic debate. As indicated, the OCA theory can be used to assess whether a given region will benefit from monetary integration. In order for a specific country to estimate whether or not to be part of a region of fixed exchange rates, a helpful theory is the LL-GG framework.

### 3.3.2. LL-GG framework

The LL-GG framework expands the OCA theory and makes it country-specific. It is a simple diagram to assess whether the monetary efficiency gains outweigh the economic stability loss of being part of a fixed exchange rate regime such as the euro zone (Krugman et al. 2011: 574).

The former refers to the gains from “avoiding the uncertainty, confusion, and calculation of transaction costs that arise when exchange rates float” (ibid: 575) It is difficult to calculate the exact monetary efficiency gains, but it is fair to conclude that the more integrated a country is with the fixed exchange rate area, the higher the potential gains will be. This integration can be measured by e.g. the relative size of trade with the region, and further the degree of factor mobility. The higher the degree of cross-border trade and factor mobility, the greater the monetary efficiency gains, which is reflected in the upward slope of the GG schedule.

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4 It is important to note that only the most relevant characteristics have been outlined in this summary. For a more thorough explanation on e.g. price and wage flexibility, see George Tavlas (1993).

5 Asymmetric shocks refers to situations where different regions inside the euro zone face different macroeconomic conditions e.g. unemployment in one region and inflation in another warranting different monetary policies.
On the contrary, the LL schedule slopes downwards and represents the potential economic stability losses. The Philips curve (Blanchard 2009: 188) implies that there is a short-run trade-off between inflation and unemployment, but joining a fixed exchange rate regime entails losing the ability to conduct independent monetary policy. Thus under a fixed exchange rate, a country can no longer unilaterally choose the right mix between inflation and unemployment. Another consequence is when a country faces an adverse shock, a floating exchange rate would normally function as an automatic stabilizer by depreciating the currency and thus raising exports. This is not possible under a fixed exchange rate, thus asymmetric shocks will cause recessionary pressures and unemployment. This can only be avoided if other factors step in as a substitute cushion, such as labor mobility. Full employment will quickly be restored if domestic workers are able and willing to move abroad to find work.

The LL-GG diagram is depicted at the right hand side, where the vertical axis represents potential gains and losses; the horizontal axis measures the degree of economic integration. The intersection is the point of interest and is the minimum integration level required. If economic integration (measured by e.g. trade links and factor mobility) is below this point, the losses exceed the gains, but if it is above, it is beneficial for the country to be part of the fixed exchange rate area.

![LL-GG Diagram](source: Dinopoulus and Petsas 2000)

3.4. **Is the Euro Zone an Optimum Currency Area?**

This subsection will use the OCA theory and apply it to the EMU. The insights attained from analyzing the entire euro zone will subsequently be used in the country specific LL-GG diagram to weigh the costs against the benefits for Greece.

There is abundant academic literature on the topic, and often scholars are seen as being part of two camps i.e., the euro-optimists and the euro-pessimists (Dinopoulos and Petsas 2000: 8). However, evidence suggests that the EMU does not come as close to an OCA as the US, and further that the euro zone does not fulfill all criteria of the OCA theory. As already noted, an OCA is a region either facing chiefly similar economic shocks or where other factors such as labor
mobility or fiscal transfers can act as an alternative automatic stabilizer in the absence of exchange rate fluctuations. These factors will now be analyzed using the four criteria defined in the previous theoretical subsection.

1) Similarity of economic structures and asymmetric shocks

If the economic structures of the euro zone countries are too divergent, they will face many asymmetric shocks. In a study before the EMU, Barry Eichengreen (1991) found significantly higher real-exchange-rate variability between European states than within the states of the US, hence suggesting that shocks are relatively more asymmetric in Europe. Further, in an attempt to quantify the asymmetric shocks of the EU, Bayoumi and Eichengreen (1993: 768) conclude that a clear distinction can be made between a core (GE, FR, BE, NL, DK) and a periphery (UK, IT, ES, PT, IE, EL [Greece]). For a more current confirmation, Krugman et al. (2011: 609) write that euro zone countries will continue to experience asymmetric shocks and thus one-size-fits-all monetary policy will likely be insufficient.

2) Similarity of inflation rates

A common currency area should have similar inflation rates. This is also reflected in the fact that the primary objective of the ECB is to maintain price stability (TEU 1992). Price stability is defined by the Governing Council of the ECB as: "a year-on-year increase in the Harmonised Index of Consumer Prices (HICP) for the euro area of below 2%" (ECB 2012b). The ECB has been quite successful in reaching this target for the overall euro zone. However, there has been some significant deviation between countries, e.g. Ireland 4.7 % vis-á-vis Germany 1.4 % in 2002 and Greece 4.2 % vis-á-vis Netherlands 2.2 % in 2008 (Eurostat 2011: 83-84). In order to maintain price stability, the ECB sets the interest rate accordingly, but it has often been questioned whether it is feasible to have the same interest rate for all member-states. By finding the interest rate implied by the Taylor rule6 (Mankiw and Taylor 2008: 430-431), and comparing it with the ECB interest rate, there is once more a clear distinction between core and periphery countries. As illustrated, the interest rate set by the ECB is better suited for the core, than for the periphery.

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6 The Taylor Rule is a method to calculate what the short term interest rate should be, based on inflation and unemployment.
3) **Factor mobility**

It is assumed that the currency area has high factor mobility, i.e., mobility of capital and of labor. Capital mobility is also featured in the impossible trinity, where independent monetary policy is sacrificed for perfect capital mobility and fixed exchange rates. In theory, capital mobility is perfect in the euro zone as there are no capital controls through barriers (Bache et al. 2011: 387). However, in practice it is not that simple. One way to analyze capital mobility is to look at the real interest rate differentials between member states (Frankel 1992). The covered interest parity condition states that capital flows should equalize interest rates across countries with the same currency (ibid.), but when looking at the euro zone, the real interest rates are not the same (Krugman et al. 2011: 606). They do follow the same trend, though, thus the differences can probably be attributed to the country premium inherent in foreign investments.

In a study of labor mobility, Patrick A. Puhani (2001: 136) concludes that labor mobility is not a sufficient automatic stabilizer to asymmetric shocks in the euro zone. On the other hand, labor mobility in the euro zone has been increasing at a steady rate since the introduction of the euro (Deutche Bank Research 2011). However, the current crisis has caused a sharp decline in immigration. The migration direction in the periphery countries has also changed, meaning that workers are now leaving the periphery in search of jobs, albeit at a lower migration rate overall (Deutche Bank Research 2011). Deutche Bank concludes that migration has alleviated some of the pressure on peripheral labor markets during the crisis, but that increased mobility would be desirable (ibid.). As such, labor mobility in the euro zone does seem to act as an automatic stabilizer, but the persistently high unemployment rates seem to point to the fact that increased mobility is needed, as only about 2% in the EU-27 live in another member state (EC 2010).

4) **Fiscal integration**

The euro zone is characterized by fiscal restraints rather than fiscal federalism. The fiscal restraints of the convergence criteria (eventually the Stability and Growth Pact) should - in theory - ensure that member states do not borrow excessively or run large public deficits. However, an unintended consequence of the fiscal restraints is to constrain the stabilization capacity of national governments and thereby weaken the euro zone’s ability to adjust to asymmetric shocks (Bayoumi and Eichengreen 1994). A European fiscal transfer system could provide an automatic stabilizer and smooth out potential asymmetric shocks, but fiscal federalism, as in the US, is only present at a very small scale in the EU (Krugman 2011: 608-9).

Many writers acknowledge that it is conventional to conclude that the EMU is not an OCA (see e.g. Bayoumi and Eichengreen 1997: 762; Krugman et al. 2011: 608; De Grauwe 1993: 654). The
economic structures of euro zone member states are significantly different. Thus they are prone to asymmetric shocks. Consequently, it is problematic to have the same monetary policy and interest rate for the entire euro zone. Using the Taylor rule, it has been shown that the interest rate is set according to the needs of the core, rather than the periphery. Other factors could in theory step in as alternative stabilizers, but neither factor mobility nor fiscal transfers provide a significant economic adjustment mechanism in the EMU. Hence we conclude that there is a clear distinction between the core and the periphery, and the euro zone is not an optimum currency area.

3.5. Greece and the LL-GG Framework

Building on the insights from the previous subsection, we can use Paul Krugman's cost-benefit version of the OCA theory to analyze whether Greece is suited to be part of the euro zone. The degree of Greek economic integration with the rest of the zone is central to the analysis. As such, this is the foundation on which the discussion is built.

3.5.1. Economic integration

3.5.1.1. Trade relations

A key measure of economic integration is the trade relations between Greece and other euro zone members. The greater the trade relations, the greater the benefits are for Greece to be part of the EMU. Two significant indicators of trade relations are (i) the relationship between intra and extra-EU trade as well as (ii) exports to the euro zone as a percentage of GDP.

In order to judge the importance of the internal market to Greece, we can compare the intra-with the extra-EU trade, i.e., how much Greece trades with the European countries compared to the rest of the world. The European Commission has calculated the variation between member states in the share of intra-EU trade in 2010, where the highest share was recorded at about 75-80 % in countries such as Luxemburg, Czech Republic, Slovakia and Portugal. At the other end of the scale we find the UK and Greece falling close to 50 % (appendix 3). In order to follow the development of this indicator, we have calculated the share of intra-EU trade for the entire EU-27 as well as for Greece.
Greece has a relatively low share of intra-EU trade, even compared to the entire EU-27. Further, we find a significant decrease after the implementation of the euro. The exact share was 69% in 1999 but only 56% in 2002. Hereafter it has been averaging less than 60%, ending at 58% in 2009 and 53% in 2010. Contrarily, the entire EU-27 has been averaging more than 65% until 2010 where it stood at 63%, but still well above Greece.

If we compare Greece with just the euro zone, the tendency becomes even more evident. Exports to the euro zone as percentage of GDP stood at only 6% in 2009, compared to e.g. Spain 13%, Portugal 17% and Ireland 37% (appendix 4). We can thus conclude that Greek trade relations with the EU are relatively low compared to other European countries.

Additionally, it is worth mentioning that the trade relations are not very healthy for Greece. As described in the “current situation” section, Greece has run consistent current account deficits. The same sign is evident in their intra-EU trade balance (appendix 5).

3.5.1.2. Factor mobility

As factor mobility is crucial to the degree of economic integration, this section analyses both labor and capital mobility in Greece. It will also briefly touch upon the internal labor market in Greece.

The European Commission (2010) has done extensive research in the area of labor mobility within the EU. When the Greeks are asked if they could see themselves working abroad sometime in the future, only 8% answered yes. This is well below the EU-27 average of 17%. At the same time, however, when asked whether or not they think they would have an easier time finding work abroad, 49% of the Greeks answered either “much better” or “somewhat better” (European Commission 2010). Only 14% of the people who feel there are better opportunities abroad actually envisage themselves moving (ibid.). Thus, although the Greeks seem to recognize the possibilities of the single market and free mobility of labor, very few actually plan
to take advantage of it. With very high rates of unemployment in Greece, especially among the young workers, they seem unwilling to move abroad to find work in countries with more demand for labor. At an already low overall level of labor mobility within the euro zone and the EU, the Greek workforce seems even less mobile and, by extension, less integrated with the rest of the zone.

Much like mobility with the rest of the euro zone, the Greek labor market is remarkably heterogeneous (Livanos 2008). A central issue is the variance in unemployment rates between regions. The central and northern parts of Greece have noticeably higher unemployment rates than the south – especially the larger islands like Crete (ibid.). The persistence of these differences is much greater than the rest of the peripheral countries. Livanos (2008) provides some possible explanations for this rigid and immobile labor market, namely a strong bond to family and birthplace, as well as the highest degree of home ownership in Europe (75%). It seems probable that these two reasons are equally (or even more so) applicable to the unwillingness of the Greeks to live and work in other euro countries.

As stated in the White Paper on freeing the internal market within the EU, the free movement of capital is one of the four pillars of the single market (Bache et al. 2011: 387). As such, this also includes Greece. There have been a few infringements in Greece, e.g. a recent Commission request following a situation where the Hellenic Telecommunication Organization issued special rights shares to the Greek state (European Commission 2012b). Overall, however, capital mobility is difficult to measure and there seems to be no post-euro research on Greece. As mentioned earlier, real interest rate differentials can be used for this purpose, but they do not control for country premiums attached to investments. As Greece is a member of the single market, it seems reasonable to conclude that capital mobility is enforced and present in Greece.

3.5.2. Gains and losses (based on estimated degree of integration)

3.5.2.1. Monetary efficiency gains

All the gains of being part of the euro zone rest on the concept of reduced uncertainty and transaction costs. A major part of this is said to come from reduced transaction costs, especially for businesses, as a result of the removal of currency exchanges within the zone. Thus, Greek businesses benefit from these reduced transaction costs when exporting and importing goods and services. By extension, this benefit should in theory act as a catalyst to further intra-zone trade, meaning that Greece should see increased trade as a result.

However, as noted previously, Greece has the lowest exports to the rest of the euro zone and rank low on intra vs. extra trade within the EU. This means two things when put into the LL-GG
framework: that the benefits attained by reduced transaction costs are relatively low in Greece and that reduced transaction costs have not facilitated sufficient growth in trade integration. However, one thing that Greece has gained from, without quantifying it, is the reduced uncertainty and transaction costs related to tourism, which is a major industry in Greece. Tourism has remained a strong employment provider in southern Greece. However, much of this is harder to quantify after the crisis as other parameters (e.g. lower aggregate demand) plays a role. The common currency has made travel costs more predictable and convenient, but not cheaper.

Another gain from reduced uncertainty is related to predictability on investments. The removal of currency fluctuations through the common currency makes it much easier to predict returns on investments. There is still a country premium to account for, but the uncertainty in currency fluctuations is removed. As mentioned, the flow of capital to and from Greece has not seen extensive official research since the introduction of the euro, but it seems logical to at least state that it has made investments more convenient.

Reduced uncertainty should in theory facilitate higher labor mobility (Tavlas 1993: 677). However, as mentioned, the Greeks are some of the most unwilling to relocate within the euro zone (European Commission 2010). Thus, gains introduced from the common currency do not seem significant in most areas that the model predict, which may suggest that Greek economic integration does not meet the integration equilibrium in the LL-GG model.

3.5.2.2. Economic stability losses of being part of the EMU

The EMU represents an extreme solution to the trilemma, namely “absolute exchange rate stability, absolute openness to financial trade but no monetary autonomy whatsoever” (Krugman et al. 2011: 587). This loss of monetary policy as an automatic stabilizer is the main economic cost associated with being part of the EMU. Dinopoulos and Petsas (2000: 6) give an example to illustrate this point. If political instability in the Balkan regions reduce the number of tourists visiting Greece, and further decrease their exports, they will face an asymmetric shock in the euro zone. If they still had the Drachma, their currency would devalue and thus raise exports, stimulate employment and reduce the magnitude of a potential recession. However, this is not an option for Greece as a member of the EMU. Additionally, because of the EMU and fiscal restraints7, Greece’s capacity to fight asymmetric shocks by conducting expansionary policy are significantly constrained by being part of the euro zone. Instead they can lobby the ECB to set an

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7 Greece cannot borrow in the financial markets. If they want loans from IMF, ESFS, EU and other international institutions, they must go through with extensive austerity. Thus they cannot stimulate their economy
interest rate suited for the macroeconomic condition of the Greek economy. But as we illustrated earlier, the interest rate is predominantly set according to the needs of the core, rather than the periphery. To analyze this further, we have calculated the interest rate implied by the Taylor rule for Greece, and compared it to the ECB interest rate.

In this graph\(^8\), it is clearly evident that the ECB interest rate does not follow the macroeconomic conditions of the Greek economy. Hence, Greece must rely on other adjustment mechanisms such as fiscal transfers and labor mobility. Alas, there is no fiscal federalism in the EMU, and it can be questioned whether it is feasible to lay the entire burden of macroeconomic adjustment on the labor markets. Further it has been shown that labor mobility is exceptionally low in Greece.

Admittedly, a core weakness of the LL-GG framework is that it is difficult to quantify the gains and losses, as well as the economic integration. It is impossible to calculate precise numbers for the diagram. However, Greece is a periphery country often facing asymmetric shocks, while the monetary policy is set according to the needs of the core; the least economically integrated of the euro zone measured by trade relations; and their labor mobility is exceptionally low. Thus we conclude that the economic stability losses exceed the monetary efficiency gains of being part of the EMU.

3.6. Consequences of Leaving the Euro Zone

Having said all this, one must not minimize the risks and consequences of breaking with the euro - and thus re-introducing a national currency - as small. First, a quick overview of what would, in fact, have to happen in the case of a break-up.

The risks in a break-up are many. Like Eichengreen (2007), we will start by framing the consequences in three areas: Economic, political, and technical/legal aspects. Whereas we were

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\(^8\) Based on the “simple Taylor rule,” i.e., target rate = 1 + 1.5 \times Inflation – 1 \times Unemployment gap (Nechio 2011), where the unemployment gap is the difference between actual unemployment and the non-accelerating inflation rate of inflation, NAIRU (Mankiw and Taylor 2008: 183). We have used NAIRU estimates from the OECD and core-CPI inflation (CPI excluding food and energy prices), which flattens fluctuations.
greatly inspired by Eichengreen (2007), we depart from his conclusions of seeing a break-up as highly unlikely because of subsequent developments in Greece and grave long-term consequences of not breaking with the euro.

3.6.1. Economic consequences

The economic consequences are, mainly, all the good things about being part of the euro. What are we talking about here? To name a few, we would stress low interest rates (for ten years), easy capital via the ECB, low barriers to trade, a back-stop for the banks via liquidity, and cheap imports due to the non-depreciation of a currency⁹.

The loss of all the privileges that come from being a member of the euro and the direct consequences of leaving are not to be neglected. Before 2009, it was largely believed by the market that all euro government bonds were equally risky, as shown in appendix 1, where we show selected Member States’ 10-year bond spread to the German. Normally, one consequence of leaving the euro would be to lose access to cheap funding. However, this is no longer an issue, and even as a member, Greece has lost its access due to its perceived riskiness.

The biggest cost facing Greece in a possible exit would fall on corporations and households’ balance sheet. As Buiter (2011) writes, many assets and liabilities are denominated in euro at the moment. A Greek exit from the euro would mean that, over-night; Greece would have to set an exchange rate for the new Drachma vis-à-vis the euro, converting all assets and liabilities governed by Greek law into the new currency. However, all assets and liabilities governed under foreign law would still be denominated in euro. What this would mean is that, the moment the new Drachma would be traded, it would likely depreciate sharply. Willem Buiter (2011) from Citi predicts 40% against the euro. Jens Nordvig et al. (2012) from Nomura say 57% (although that is in a full break-up). We would say that it is not unreasonable to assume a sharp drop (>40%) against the euro. This would create a mismatch of balance sheets, forcing a large amount of bankruptcies, especially in regard to the banks.

In such a scenario, the ECB would obviously stop accepting Greek bonds and securities as collateral in its liquidity operations and the Emergency Liquidity Assistance (“ELA”), as the Bank of Greece (and Greece as a country) would not be part of the ESCB. Bank of Greece could, theoretically, print money and supply banks with liquidity. However, as inflation is a concern when the Greek people find out their purchasing power has fallen, and demand wage increases as a result, this can cause hyperinflation (Buiter 2011).

⁹ One would expect a single Greek currency to depreciate sharply against other euro countries
The outflow of deposits that would inevitably happen in a bank-run is a serious problem. Image that Greek banks are cut off from getting funding via the ECB, the ELA, and other sources – and in addition deposits leave. The capital structure of banks would mean bankruptcies, as any bank is inherently insolvent if everyone wants their money bank in a short timeframe\(^{10}\). Where will the savings be reinvested if, as they must, Greece runs a current account surplus? One crucial factor is whether savings will be re-invested in Greece or moved abroad.

Finally, Greece has to have a positive primary deficit (budget deficit minus interest rate costs). In a break-up, all funding would naturally be cut because Greece does not fulfill its obligations before leaving, because they cannot borrow via debt for the next decade.

### 3.6.2. Political consequences

The most important question in a break-up scenario is, obviously; can Greece stay a EU Member State? Legally, there is no way for the other countries to kick Greece out, should they want to. Greece would, likely, still want to have access to the single market, regulation, and other EU institutions. The question is whether they would actually gain any political influence by staying a Member State, as opposed to now. We suggest that the monetary policy and Greece’s priorities so far, in fact, have not been represented at EU level, and that it would not make a big difference – Greece will not have any say due to its limited leverage over others, except in a break-up\(^{11}\). The biggest loss would be if they did not have access to the Single Market and other cross-border issues related to trade and regulation. It is important to note that the capital controls that would have to be put in place for Greece to force the exchange of euros to drachma should only be temporary. It must be abundantly clear that the capital controls will be lifted after a successful exchange of all Greek euros – otherwise they would violate the terms of the Single Market.

Giles et al. (2012) write in the Financial Times that: "After exit, Greece would have to negotiate continued EU participation. The EU treaties have a provision for leaving the union, but not just the eurozone. That negotiation would be all the more difficult if new Greek authorities defaulted on debt to the European Financial Stability Facility, the ECB and the IMF. If the country defaulted on its IMF debts, it would join a small ignominious club of nations – including only Zimbabwe, Somalia and Sudan – that have overdue financial obligations to the fund." On the other hand, the ECB

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\(^{10}\) In standard banking, banks borrow short (deposits) and lend long (investing and giving out loans). The profit is the difference, including costs and leverage. Banks usually invest in illiquid investments that cannot be realized quickly (with a higher return), and they lend out more than they have in deposits. Thus, a bank-run will likely result in a bankruptcy.

\(^{11}\) Greece has significant leverage in such a scenario. Target2-liabilities amount to €104bn. Further, see chapter 3.6.3
(2009) argued, in a working paper, that a country could exit the EMU without exiting the EU. That is Greece’s option, as EU expulsion would not be ideal.

3.6.3. Technical and legal consequences, actions, and uncertainty

To analyze the technical and legal consequences, first one must understand how the ECB and banking work. Banks usually get liquidity in one of two ways: By accessing the market, i.e., borrowing money either unsecured (from other banks or via deposits) or secured by repo; or by pledging collateral at the central bank in return for liquidity. The ECB could, theoretically, stop accepting Greek bonds as collateral, thus cutting off most Greek banks from funding. This would, effectively, push Greece out of the euro because it would create a two-tier central bank system within the ESCB, i.e., no monetary union (one euro is not one euro everywhere).

Greek banks have since 2009 been unable to access the financial markets for funding in any serious quantity (BIS 2012a: 6), and with deposits moving out of Greek banks (BIS 2012b: 2), all that is left is central bank borrowing, which has risen exponentially in Greece according to the BIS (2012a: 6). The increased borrowing from the ECB (via Bank of Greece, which manages it) is the “opposite site” of the current account deficit (Krugman et al. 2011: 336), i.e., the financial account, which account for the net inflow of money (and selling of assets).

Since Greek banks cannot access the market for funding – because their and the sovereigns’ perceived riskiness is high – they borrow exclusively from the ECB. This is part of the Target2-system (for an explanation of Target2, see ECB 2012; Bindseil and König 2011; and Sinn and Wollmershaeuser 2011). Target2 liabilities for Greece, which stand at approximately €104 billion, according to the Bank of Greece, would likely be defaulted on. The wildcard is other external debt, which at the end of Q4, 2011 stood at (Bank of Greece 2012; EC 2012c):

- Euro zone/IMF loan (from May 2010): €110 billion
- Euro zone second loan (from October 2011): €130 billion
- The Bank of Greece Target2 liabilities: €104 billion
- Greek banks’ liabilities to other nations in the euro zone: €130 billion (and rising)
- Greek new government bonds held by non-Greek euro zone/EU banks: ~€25bn
- Plus Greek corporate and household debt held by non-Greek euro zone banks

Total: At least half a trillion euros. A serious technicality in a break-up would be how to manage a redenomination process of all this debt without widespread bankruptcies and deposit plights, and remember: This is not counting government debt.
Whereas the redenomination process would be terribly difficult to manage, some banks have, nonetheless, started to prepare. In fact, according to Miedema and White from Reuters (2012), most banks did not erase the Drachma operating systems, and would therefore be able to trade the currency in a very short amount of time.

It also does not make sense to honor all this debt in case of a break-up. In fact, it makes sense to default on both government debt – which has already happened to private investors, but official institutions must also take a haircut – and most of this external debt. This is not a small operation, and indeed will cause massive short-term political and economic turmoil. The question is whether Greece can manage such a scenario, which must include structural reforms and institutional changes in order to gain economic growth and prosperity in the long run.

3.7. Part Conclusion

After this thorough analysis based on a large amount of empirical evidence regarding Greece and the euro zone, we are now ready to make a part conclusion. We have argued that the euro was, from the start, not an optimum currency area. However, this alone should not result in the abandonment of the currency. Nevertheless, Greece’s economy, structurally, was not suited to be part of the euro in the first place. This is clearly reflected in the current macroeconomic conditions in Greece which are the results of long-time imbalances stemming - in large part, but not exclusively - from their membership of the EMU.

Given our analysis of the structural problems, and the solutions needed to rebalance the economy and create growth, we believe that a break with the euro is a must. The severe short-term consequences are not easily managed, but if Greece stays a member of the euro, the imbalances will only become worse, thus postpone the - in our view - inevitable break-up. Greece must regain their ability to devalue their currency, along with a more appropriate monetary policy, in order to become a net exporter and regain competitiveness. This break-up would be profitable in the long run, because our analysis shows that Greece is not an integrated part of the region, neither when it comes to trade, fiscal policy, or business cycles - their economy is, in other words, too asymmetrical vis-à-vis the other Member States.

For Greece to successfully manage a break-up, it is of vital importance that they undertake a series of structural reforms, because if they do not, a break-up will result in hyperinflation, political chaos and possibly social unrest.
The structural reforms and institutional changes needed to move toward economic growth will be outlined in the next chapter, in which we present reforms necessary for Greece to, once again, prosper.

4. A SUGGESTED COURSE OF ACTION FOR GREECE

“The trajectory of struggle during crisis will endogenously shape the internal content of the new social structure of accumulation after the resolution of crisis” (Gordon 1980).

Based on our part conclusion in the previous chapter, we now present a suggested course of action for Greece in the short- and long-term. The short-term section will focus on the managerial aspects of how the break with the euro zone should be managed by Greek politicians, thus it will mainly be based on the aforementioned consequences of leaving the euro. In the long-term, the two major issues facing Greece are the functioning of their capital and labor markets. Regarding the former, it is vital that the institutional setting encourage long term capital investments in Greece. Concerning the labor market, the political economy of Greece must facilitate a relative increase in labor power and further stimulate labor mobility, in order to reduce the staggering unemployment rate.

4.1. Short-term: How to manage a break-up considering the consequences and prospect theory

The most important question facing lawmakers is, how do they decide to break with the euro? It is not easy. As depicted in the consequences chapter, if Greek politicians started talking openly about a break-up in the parliament, a bank-run would ensue. How can politicians take such a decision, in what would have to be days – or maybe even hours? The biggest problem facing politicians would be that of social legitimacy, as explained in Hatch and Cunliffe (2006: 87). Greece as an institution would have to get a mandate to change the currency. Such a mandate can only come from an election, and in such an event – where anti-euro parties won – a bank-run would be highly probable (we would say certain).

In fact, even now – where there is no consensus to break with the euro – from the 1st to the 16th of May, deposits in Greek banks have been reduced by €5bn ( Cotterill 2012, Financial Times). However, Cotterill (ibid.) writes: “The amazing thing about the Greek banking system since 2009 is not just the 25 to 30 per cent of deposits that have left, but the 70-75 per cent which have stayed.” How can this be? We will look at this from Prospect Theory point of view. Kahneman & Tversky founded Prospect Theory in a paper from 1979, in which they criticized expected utility theory ( Salvatore 2007: 544). The basic idea was to model real-world decisions where they found that
people are risk-averse, or more accurately that they are loss-averse. People take profits quickly, but they take losses slowly because of an aversion to lose.

This is curious. If people are, in general, averse to losses, how come 70% of bank deposits still sit in Greek banks? Is this a repudiation of Prospect Theory, or do the Greek people still not see a break-up as likely?

This provides an insight into how politicians must act from a managerial point of view. At the moment, according to Prospect Theory, Greece is still at a point in which risk-aversion has not become widespread. The kink on the curve – which is where the bank-run would start – is still not reached in Greece. In other words, the probability of a loss is still low – or not known to the public at large.

The funny thing about bank-runs is that, if you are late – you lose. However, if everyone takes out their money, the banks go bankrupt, i.e., it is what can be described as a lose-lose. The system, therefore, is built on confidence. If trust evaporates, the system stops functioning.

How do the politicians make sure that this trust does not evaporate when (i) they plan to break with the euro, and (ii) after the break up with the euro? Investors and businesses must be assured that there is money to be made in Greece, such that Greek businesses will re-invest their profits in Greece, and that foreign businesses will invest in Greece. This is essential. It demands that the process of deciding to break with the euro is taken swiftly, and it must be accompanied by structural reforms and institutional changes. The reforms to be undertaken to make sure that Greece will reap the gains of breaking with the euro will be dealt with in the next chapter.

4.2. Long-term: SSA period of prosperity

4.2.1. Social Structure of Accumulation theory

Social Structure of Accumulation (SSA) theory attempts to explain the stages of capitalism that, throughout history, have facilitated long periods of growth (McDonough et al 2010: 1). At its core, the theory is crisis driven. For growth to exist there must be a favorable external environment that enables capitalist investments in production (Wolfson 2003). Eventually, however, this institutional environment will in some way stop facilitating growth, which can then lead to a crisis. In a crisis, the economy retains its social structure of accumulation, and thus SSA theory argues that it is only through a restructuring of institutions that a crisis can be overcome (ibid.). Here the concept of an SSA period, as a period of long and stable growth, can be applied to explain the new institutional setting that should be aimed for after the crisis.
The SSA approach, originally developed by Gordon (1980), draws on insights from both the Marxist school of thought, as well as Keynesianism. From Marxism, SSA theory adopts the conflictual relationship between labor and capital. This conflict can be altered and channeled by institutions (McDonough et al. 2010: 25). From Keynesianism, SSA theory agrees that investments depend on expectations, which makes the capital environment unstable (ibid.). Thus, inherent in the theory is considerations of both the preservation of a healthy relationship between labor and capital, as well as maintaining stability (Wolfson and Kotz 2009 in McDonough et al. 2010). When the SSA theory explains the problems inherent in the class conflict between capital and labor, it focuses on the need to preserve a balance between them. If capital is too strong, problems with low aggregate demand will occur, which can lead to underconsumption. This will discourage new investments. On the other hand, if labor is too strong, high wages and unions with too much bargaining power will limit profitability. This profit squeeze also keeps away new investments.

Kotz (2006) presents another central idea in SSA theory, namely the combination of the circuit of capital and capital accumulation. The circuit of capital is defined as M-C-C'-M', where each step represents a different part in the capitalist process. M-C represents the purchase of means of production and labor power. When surplus value is created through the production of commodities, the money received from the sale of those goods is referred to as money revenue. Essentially, this money revenue replaces the means of production and labor power used to generate the surplus value and can only be considered money capital when it once again enters the circuit of capital (Kotz 2006). This important step, M'-M, is where capital accumulation is combined with the circuit of capital. Capital accumulation only occurs when capitalists use the money revenue to purchase means of production and labor power. The institutional environment must therefore facilitate reinvestment into the economy by “completing the circuit” (Kotz 2006). For capital accumulation to occur, it must be attractive for firms to reinvest in production rather than keeping their money revenue as portfolio investments. Kotz (2006) writes that: “the key question for the SSA theory has to do with the conditions necessary for money revenue to be converted into capital”. Thus, the institutional setup, both before and after a crisis, is in SSA theory important for attracting investments.

We are aware that we apply a limited version of the SSA theory. Much of the work on power balances between labor and capital is not something we will discuss. The concepts we apply to the Greek political economy will focus on how to facilitate reinvestment through capital reforms and maintain a stable circuit of capital. We will also apply the SSA framework to labor reforms in order to improve the process of purchasing labor power.
4.2.2. A favorable investment environment in Greece from a managerial perspective

As mentioned above, a central feature of SSA theory is to ensure an environment that facilitates reinvestment into the economy. This is also central for Greece. In order to get a new period of prosperity, they must make it attractive for businesses to invest and keep their money inside Greece. By looking at this from a managerial perspective, we can gain valuable insights of how businesses decide whether to invest or not.

Capital budgeting is a concept from managerial economics and refers to “the process of planning expenditures that give rise to revenues or returns over a number of years” (Salvatore 2007: 580) i.e., long-run investment decisions. Under capital budgeting, a firm will invest if the expected marginal revenue exceeds the marginal cost of the investment. The marginal revenue is the expected return of the investment, and the marginal cost is the price paid to obtain the required capital. E.g. if the expected return is 15 %, and the cost of capital is only 10 %, the profit will be 5 % and thus the business should carry out the investment. The evaluation methods most businesses use is either the net present value or internal rate of return method. Both methods imply that when the cost of capital increase, fewer investments will be profitable and therefore fewer investments will be made. Hence the political economy of Greece should promote a low cost of capital.

Investments can be financed internally or externally. The former refers to investments financed by undistributed profits. If the interest rate is low, the return of letting undistributed profits stay in the bank will consequently also be low. Thus it will often be more profitable to find an alternative purpose or investment, rather than the low interests from the bank. Hence a low interest rate is an incitement for businesses to invest their undistributed profits. The other way to finance an investment is by borrowing the money as debt or equity. There are various methods to calculate the precise cost of debt and equity12, but most often businesses combine the different financing methods for their investments. Thus most often the cost of capital is a weighted average. Common for all methods is that a key influence is the interest rate, and to generalize, all methods imply that the higher interest rate, the higher cost of capital. This is closely connected to the amount of investments, since a high cost of capital will cause fewer investments to be profitable. Hence from a managerial perspective, a low interest rate gives incentives for businesses to invest and will thus provide a more favorable investment environment. And by leaving the EMU, Greece would control their own interest rate, thus it

12 E.g. the dividend valuation model, after tax cost of debt and capital asset pricing model.
would increase their capacity to stimulate investment and curb inflation, when necessary.

A short note on the demand side of the equation is also important. Obviously, businesses will not invest if demand is insufficient. However, a break with the euro will cause the Greek currency to devalue, which in turn would help their service industry, increase exports and the number of tourists visiting Greece. This will stimulate domestic employment and consequently also domestic demand and imports will fall. It is all interconnected, and structural reforms are imperative for Greece to get a new SSA period of prosperity.

4.2.3. Capital

Through the SSA framework, the current crisis represents an opportunity for institutional changes that will help Greece recover. These changes are necessary in order to create a new, stable SSA period. Exiting the EMU will grant Greece added options for choosing the best institutional setup in which investing will be attractive. We do not present solutions for all the changes necessary to the institutional setup in Greece, as that is beyond the scope of this final chapter. Rather, we present solutions to parts of the new social structure of accumulation – ones that are appropriate to the theme of this paper.

As mentioned in the previous section, it is our suggestion that Greece should focus on creating a stable long-term capital environment – one that secures the long-term expectations of investors, both foreign and domestic. This is a crucial step because of the serious consequences associated with exiting the euro zone. We now present our solutions to this development. These solutions are meant to create a balanced social structure of accumulation in Greece. There is a general consensus among SSA theorists that during the last decades, the relative power of capital to labor has increased. This is because of globalization, the growing financial markets, and increased capital mobility (McDonough et al. 2010: 7-9). This is an assumption we draw upon in these following sections, and the decrease in the power of labor is something that is manifested in the very high unemployment rates in Greece and the rest of the euro periphery. Additionally, the low labor mobility relative to capital also represents a power shift in favor of capital.

Following SSA theory, this balance needs to be restored via institutional reform to recover from the crisis. However, before addressing the issue of power balance, it seems appropriate to build a course of action to secure long-term investments and keep capital in Greece.

In order to assess how best to facilitate capital accumulation in the Greek economy it is necessary to briefly introduce the relationship between profit rates and accumulation. Mihail (1993) builds two econometric models to describe this in the manufacturing sector. The first explains expected profitability through a number of variables. The second model – the one
explaining capital accumulation – will be used to “close” the circuit of capital. Here we use short- and long-term expected profit rates, the interest rate on loans, and the terms of trade. There is a clear connection between Mihail’s models (1993) and the circuit of capital/capital accumulation process as described by Kotz (2006). Mihail provides some necessary parameters to assess capital accumulation. Before we apply Mihail’s models, it is important to note that we are aware of the dangers of using models built on outdated data. Therefore, we will only use the direction of the correlation from the models, and not their coefficients. One difficulty in creating solutions through these two steps – profit rates into capital accumulation – is that it is mostly in the latter where exiting the EMU provides Greece with new options.

The key to the problems in Greece is to be found in the Keynesian insights in SSA theory, namely the presence of expectations and the volatility in the capital environment. Both need to be controlled in Greece. While short-term expectations about the Greek economy will be negative after a euro exit, the long-term expectations are easier to explain. We stress that the improvement of the long-term expectations needed to attract investment should come from the added flexibility in the Greek economy after a euro exit. This added flexibility comes from the return of independent monetary policy, less long-term fiscal constraints, and the return of a currency that adjusts accordingly.

In Mihail’s model on profit rate, two of the new tools available to Greece are included, namely the independent currency (through adjusted terms of trade) and the more flexible fiscal constraints in the long run (through the budget deficit variable). When combined with the circuit of capital, the model on profit rate is linked to two steps: \( M-C \) and \( C'-M' \). For the terms of trade variable, a currency devaluation (as explained in the section on the consequences of euro exit) will have two effects on the manufacturing sector in Greece: imports will be more expensive and exports will see a significant boost. The increase in exports will likely be much larger than the increased cost of imports (OECD 2012) Thus, the profit rate in Greek manufacturing will increase. In the service sector, the effect is straightforward. With a lower reliance on imports, the service sector in Greece will see a significant boost – especially tourism (Bank of Greece 2011). This increase in profit rate in Greece means that the money revenue generated will increase \( (C'-M') \). The added long-term flexibility in fiscal policy will also affect the profit rate in Greece, as explained by Mihail’s first model (1993).

In Mihail’s model on capital accumulation, the increased profit rate becomes a variable (positive correlation). In addition to this, the interest rate on long-term loans is included (negative correlation), which is something Greece can control after a euro exit. Greece needs to secure reinvestments into the economy after the break with the euro, which, we argue, should mainly
be done by facilitating an increase in the underlying profit rate expectations that investors have. This is necessary not only to keep foreign investors in Greece, but also to avoid that domestic capitalists move their investments elsewhere. As such, this is where Mihail’s model explains how the circuit of capital is “closed” (M*-M). If capitalists see prospects in the Greek economy, they will use their money revenue to repurchase factors in Greece. To help facilitate this, we propose several long-term goals for Greece. The first is to focus on their harbors, which could further the prospects in shipping and logistics in Greece. Additionally, this could advance a second goal of serving as a Chinese “entry-point” into the European market, thus attracting FDI flows from China. As mentioned previously, the devaluation after exiting the euro will boost tourism. We argue that Greece should focus on attracting European tourists after this devaluation to fully take advantage of it.

Another way to improve the long-term profit rate expectations in Greece is to send a credible message about the intention to restore balance to the Greek political economy. As mentioned in the beginning of this section, labor has lost power relative to capital, which means labor reforms are needed to correct this. A stable relationship between labor and capital will improve the expectations investors have about the Greek economy, thus facilitating capital accumulation and securing a well-functioning circuit of capital. We now turn to our proposals for solutions through labor reforms.

4.2.4. Labor

Two issues about the Greek labor markets have been mentioned in the previous chapter: high unemployment rates and low labor mobility between regions. These two issues contribute to the relative power increase of capital. In theory, within the single market, both capital and labor is perfectly mobile. However, two things have made capital relatively more mobile. To start with, technological advances have made it easy to move money across borders. Further, in Greece, the workforce has not taken advantage of the open borders within the EU, which has increased the gap. As we argue that improving the long-term expectations of investors relies on the creation of a stable social structure of accumulation, it is necessary that the Greek policy makers introduce labor reforms that address these issues.

Before moving on to presenting the suggested labor reforms, it should be noted that we are confident that exiting the euro and reintroducing the Drachma would in itself alleviate some of the pressure. Reverting to the old currency (or New Drachma) would automatically make capital less mobile in practice, as the capital flows would slow down in the short term as a result of the immediate uncertainty involved in this unprecedented action (e.g. bank runs).
Unemployment and low labor mobility are in the case of Greece connected. As previously noted, Livanos (2008) connected the two in a study on the Greek labor market. We argue that part of the solution to the Greek unemployment levels lies in stimulating labor mobility. The Greek labor force is unwilling to relocate because of high home ownership rate (which the current real estate market has only exacerbated), strong ties to family, and birthplace (Livanos 2008). We propose some solutions to help improve labor mobility, thus improving employment levels.

The first involves providing a direct incentive to relocate or promote the acceptance of longer commutes. This could be through a number of things, one example being a tax return on transportation cost. Another could be to subsidize expenses on public transport, while also investing in the improvement in the same system. A more indirect approach to the issue of low labor mobility would be to increase taxes on household property. This would promote relocation, as it would be more expensive for workers to own property. This would encourage more to rent their house or apartment, thus making it easier to move to another region in Greece for work. At the same time, it would also help with the ongoing issue of budget deficits.

To improve the overall demand for labor, Greece could make institutional changes that encourage both education and vocational training. Better levels of education and training in the workforce will make labor a relatively more attractive factor of production.

Reforms in the last couple of years have yet to restore growth, as well as competitiveness to the Greek economy (EC 2012c). The European Commission (2012c) argues for increased wage flexibility, as well as cuts in minimum wages, so that the effective exchange rate may adjust, thus boosting competitiveness. However, we argue that a devaluation from a euro exit coupled with reforms to increase labor mobility and labor skills will be a better solution for Greece.

5. CONCLUSION

In this paper, we wanted to answer the question whether Greece should stay a part of the euro. After thorough analysis, we have come to the conclusion that Greece should break with the euro and reinstate the Drachma.

Greece was never suited to be a part of the euro. From the get-go, Greece did not live up to the criteria that included inflation and debt. Officially they did, but it was later revealed that the statistics were not correct, and that Greece in retrospect did not even qualify for membership. That, however, is not the main argument against ever adopting the euro. Greece's economy is, structurally, not suited to be in a currency area with the rest of the EMU-countries.
We have analyzed the euro area using Mundell’s (1961) theory of Optimum Currency Areas. The main point here is that, to qualify for a single currency, countries must be part of what is called an ‘economic region’. By region is meant that economic shocks are symmetric, so that the economy is not booming and facing inflationary pressures in one part – demanding contracting monetary policy – and recessionary pressures in another part – demanding monetary easing. Further, labor mobility must exist in sufficient size, ensuring that if there is unemployment in one region and labor scarcity in another – workers move inside the monetary union. Greece does not qualify for this, as the Greek are unwilling to move, even facing serious economic conditions.

Another must in a currency area is intra-trade. Intra-trade must be sufficiently high to justify giving up one’s own monetary policy. The gains from trade, such as lower transaction costs and lower currency risk, must outweigh the losses, which include losing the automatic stabilizers that are inherent in having one’s own currency – most importantly an independent monetary policy and exchange rate flexibility. The Greek exchange rate would, likely, have fallen relative to especially the Northern countries because of higher inflation and its current account deficit. Greece, thus, became less competitive vis-à-vis especially Germany.

Since joining the euro, Greece has been able to borrow money on the financial markets at exceptionally low rates. This would, likely, not have happened, would the markets have realized that they were more risky than other members, such as Germany. The unsustainable fiscal deficit and current account deficit was thus allowed to run for a long time, making the problem that much harder to solve. The current account deficit was in large part financed by money inflow to Greece, because investors thought that all euro bonds were equal – something that has deteriorated since 2009 (see appendix 1).

We then applied the GG-LL model, in which we made OCA theory country-specific. We modeled whether it was beneficial for Greece to be part of the euro, taking into account trade, factor mobility, monetary efficiency gains, and economic stability. Using this model, we concluded that Greece did not gain, because the losses were larger than the gains. In fact, Greece is the country in the EU with the second lowest intra-EU trade. Only the UK trades less with the rest of the Member States. Greek trade is also largely in services, such as tourism that would benefit from a lower exchange rate.

Inflation is a big part of the problem. During the boom years, basically from 2001 to 2009, inflation ran high in Greece. We applied a simple Taylor rule to Greece and found that, ideally, the interest rate should have been considerably higher to curb inflation in Greece. Greek inflation ran, on average, 1.9 % higher than in Germany, helping rendering them uncompetitive. After the crisis however, ideally, the interest rate should be lower than the ECB’s, thus
undershooting because of high unemployment. ECB’s monetary policy was never beneficial for Greece.

We have found that many of the problems in Greece are structural, and that without abandoning the euro, they are unsolvable. Competitiveness, trade, and debt are all problems that are hard to solve if Greece break with the euro, but are impossible to resolve if Greece are not allowed to devalue its currency and default on its debt.

The consequences are not to be minimized. Breaking with the euro is a big operation that must be handled orderly. To break with the euro, multiple things must happen. First, speed is of the essence. The moment that Greek politicians begin debating how to break with the euro, a bank-run on Greek banks is inevitable. It must therefore happen quickly, ideally over the weekend. Second, capital controls must be put into place until all Greek notes are exchanged. Third, a redenomination of all contracts must happen by law. This will put pressure on balance sheets, both households and corporates, because balance sheets will be mismatched between assets and liabilities in Greece, denominated in Drachma, and outside Greece, denominated in foreign currency (much of it in euro). The Drachma would depreciate by up to 50 %, and possibly more, according to estimates, while Greece would default on much of its debt. Finally, Greece must regain a current account surplus. Imports would be cut automatically because of the lower exchange rate, and services such as tourism would gain. Lower interest rates expenditures would also help the government finances. Most importantly, we believe that the unemployment rate – currently at 21.9 % -- would fall as Greece returned toward economic growth.

We do believe that these short-term measures will be necessary. Mostly, because the structural problems are not solvable as a member of the euro, and breaking with the euro is inevitable – not breaking with the euro would thus only kick the can down the road.

We also believe that Greece would, in the long run, gain greatly from breaking with the euro. To do this, we suggested some reforms that must accompany a break-up. These must be implemented for Greece to return to economic growth.

Greece must undertake structural reforms to counter some of the adverse reactions that are inevitable when adopting a currency that will devalue, such as inflation, and to incentivize investments and re-investments of profits by firms in Greece. We went through what firms look at when considering an investment, and the two most important parameters – the interest rate and demand for the product – must be reinstated for Greece to return to economic growth.

We suggested multiple courses of actions to improve the underlying long-term expectations of profit rates. The most important structural difference is the independent monetary policy, which
will allow Greece to control its business cycles more prudently. We suggested that Greece develop an edge in e.g. shipping, both to attract investments from China as a port to Europe, and in its services industry, mostly tourism. Further, it is important that Greece sends a credible signal to restore the power balance between capital and labor and the Greek political economy.

Of important changes to the structure of the Greek labor market, we suggested that one of the biggest hurdles, labor mobility, must be solved. One way to do this is to increase taxes on household properties to incentivize movement in the face of unemployment. Another area that should be focused on is investments in infrastructure and educational training to make the labor force more attractive.

We do realize that this is not an easy option and that the short-term consequences will be severe. However, if Greece stays a member of the euro, we do believe that they will only kick the can down the road to the inevitable break-up, duo to structural differences that cannot be solved inside the euro zone.

5.1. Further Research

One area that has not been touched upon in this paper is contagion. What does it mean for the other peripheral states – and the EMU and EU in general – if Greece reinstates the Dracha, an most importantly what does it mean for Greece in the form of exports. As this paper has taken the approach toward advising Greece, we would welcome research on contagion.
6. BIBLIOGRAPHY


7. APPENDICES

7.1 Appendix 1 – 10 year spread vs. Germany

Figure 10: Selected Eurozone Members 10yr Yield Spreads vs. Germany

(Source: Deutsche Bank)

7.2 Appendix 2 – Inflation Rate (CPI)

(Source: The World Bank, authors' calculations)
7.3 Appendix 3 – intra vs extra-EU trade

Source: Eurostat (online data code: ext_l_intra_trc)

Source: European Commission


7.4 Appendix 4 – exports to euro zone as % of GDP

Source: Financial Times

http://av.r.ftdata.co.uk/files/2011/09/110923-Exports.jpg
7.5 Appendix 5 – Greece Intra-EU trade balance