European Integration, Monetary Policy and Exchange Rate Behaviour
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Chapter 1

Introduction

This thesis studies various aspects of European economic integration. It analyses questions related to the reduction of intra-European trade barriers, the introduction of the single monetary policy, the enhancement of competition in European product markets and the future eastward expansion of the European Union (EU).

In addressing these questions, this thesis emphasises the links with the international context in which the process is taking place. European integration affects many countries: not only the fifteen current EU member states and the twelve accession countries in Central and Eastern Europe, but also non-European countries, including the United States.

This introductory chapter proceeds as follows. The next section reviews the history of the process of European integration.1 Section 2 presents the research questions addressed in this dissertation. Section 3 discusses methodology. Section 4 gives an outline of the remainder of this thesis.

1.1 European integration

Post-war cooperation in Europe can be said to have started in 1948, when the first Europe Congress was held in The Hague. It was here that Sir Winston Churchill called upon the representatives from over thirty countries to strive for a 'United States of Europe'. This idea was primarily motivated by the desire to include Germany in a community of European states, rather than to isolate it, as had been done after the First World War.

From the beginning, the European Community was not only intended to reduce the

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1See Bakker (1998) or Cavclaars and Van den Dool (1999) for a more extensive discussion of the history of European integration.
risk of a new war, but also to reap the benefits that were expected from economic cooperation. Under the Schuman plan, the heavy (war) industries were placed under a single authority and a common market for a limited number of products was set up in the European Coal and Steel Community, consisting of Germany, France, Italy, the Netherlands, Belgium and Luxemburg.

In March 1957, these six countries signed the Treaty of Rome, establishing the European Economic Community (EEC). The Treaty of Rome provided the basis for the creation of a common market and also established the goal of free movement of people and capital. In order to realise this aim, various supra-national institutions were set up, such as the European Commission (the Community’s executive body), the Council of Ministers and the European Parliament.

In 1970, the Werner plan proposed to establish an economic and monetary union in three stages over a period of ten years. Not much of the Werner plan was ever implemented, due to differing views in Germany and France on the desirability of a single fiscal authority, which resulted in tension between the two countries. The broader European integration process was temporarily halted, but monetary cooperation received an impetus from the breakdown of the Bretton Woods system of fixed exchange rates, which put an end to worldwide monetary cooperation in the early 1970s. In response, the six EEC member states set up the ‘snake’ currency arrangement. However, the economic policies of the participating countries diverged too strongly and France had to leave the ‘snake’ within a year. The continuing foreign exchange unrest compelled the member states to work intensely towards monetary cooperation. The European Monetary System (EMS) took off in 1979. The exchange rate mechanism of the EMS was a new system of fixed but adjustable exchange rates.

The process of integration moved into a higher gear with the joint French-German proposal for greater political cooperation in 1985 and the European Commission’s white paper on the Single Market in 1986. The Delors report (1989) proposed an economic and monetary union largely along the lines of the earlier Werner plan. As to budgetary policies, the new plan was less far-reaching, however. After a series of intergovernmental conferences, the conclusion of the EU Treaty in Maastricht in 1991 formally established the goal of a single monetary policy and a single currency and also the blueprint for the road to economic and monetary union (EMU).

The Maastricht Treaty envisaged the establishment of a European Union consisting of three pillars. The first pillar was economic and monetary union. In this area, the European Commission had a substantial role to play and the Council of Ministers could decide on most issues with qualified majority. This, however, was not the case on issues relating to the common foreign and security policy, which formed the second pillar, or
for cooperation in the field of domestic and legal affairs, the third pillar. In these areas, European institutions were assigned insignificant roles and veto power for each member state in the Council of Ministers was maintained.

The Treaty of Maastricht was officially signed on 7 February 1992 and then had to be ratified by all member states. In some countries, referenda were required to do this. The negative outcome of the referendum in Denmark in June 1992 cast doubts about EMU and led to uncertainties in France about the results of the forthcoming referendum in that country. In the meantime, the German reunification had led to an economic recession. Worsening economic conditions made countries hesitant to raise interest rates in defence of the exchange rate. This resulted in a currency crisis. In August 1993, the finance ministers and central bank governors of the member states decided to widen the margins within the exchange rate mechanism of the European Monetary System to fifteen percent around the central rates.

The Treaty stipulated that only countries which showed a sufficient degree of economic convergence at the time of entry would be allowed to participate in EMU. The degree of convergence was measured against specific criteria for inflation, government finances, exchange rate stability and interest rates. Even so, some governments remained anxious about the possibility that the single monetary policy would be undermined by unsustainable fiscal positions of individual member states after the start of EMU. Therefore, in June 1997, the member states agreed on the Pact for Stability and Growth, which clarified the medium-term fiscal commitments and provided for a sanction mechanism in order to prevent a weakening of budgetary positions once EMU had started.

The Maastricht Treaty established that the start of EMU was to take place no later than 1 January 1999. Setting a specific date turned out to be crucial, as it stimulated countries to qualify for the first group of EMU participants. Tremendous last-minute policy efforts in individual member states led to a considerable convergence and improvement in terms of fiscal positions in the run-up to the decision on the composition of the group of first EMU participants. In the four years preceding the decision, the aggregate fiscal deficit of the fifteen member states was reduced from 6% to 2 1/2% of gross domestic product. During the first weekend of May 1998, the European Council decided that eleven member states were ready to participate in EMU as of 1999.

At present, the European Union encompasses fifteen countries and some 375 million people. Twelve of the EU member states participate in the monetary union. They have a single monetary policy determined by the Governing Council of the European Central Bank (ECB). As of 1 January 2002, the euro banknotes and coins have been put into circulation in a surprisingly smooth operation.
New challenges are ahead. Take, for example, the foreseen eastward expansion of the European Union, by twelve new member states or some 125 million people.\textsuperscript{2} Other important issues are how to define the European presence on the international stage, how to cope with diverging ideas on the desirability of a political union, the accountability and democratic control of Community institutions and their decisions, reducing the remaining barriers to free movement and making the Union a more competitive economy.

\section*{1.2 Research questions}

The establishment of the monetary union in 1999 has been a major landmark. But many questions of interest with regard to the process of European integration remain. Some of these relate to the monetary aspect of European integration (the ‘M’ of EMU). Central bankers in the euro area now jointly decide on a single monetary policy. This new institutional setting is likely to change the interaction between policymakers, which raises questions about the impact of the monetary union. Important concerns relate to exchange rate stability and welfare. Other issues relate to the economic aspect of European integration (the ‘E’ of EMU). The EU Treaty made explicit the ambition to create a Single Market for people, capital, goods and services. Main policy issues here are reducing the remaining barriers to trade and enhancing product market competition in the EU. Finally, the foreseen enlargement of the Union (‘the future of EMU’) also raised questions of economic interest. A very topical issue is the appropriate timing of EU expansion. More specifically, this thesis addresses five main issues.

First, what does the elimination of exchange rate uncertainty between European countries imply for the exchange rate stability of the euro? Put differently, what are the consequences of monetary unification in Europe for transatlantic exchange rate stability? Will the dollar-euro exchange rate be more or less volatile than the exchange rate between the dollar and the main European currency before the start of EMU (the German mark)?

The second question is somewhat broader in scope: What are the welfare implications of monetary union for Europe and for third countries? A considerable amount of research has been conducted on the welfare impact of monetary unification for the countries involved. However, little research has been carried out with respect to the welfare impact of monetary union for the rest of the world. Will the rest of the world suffer, or will it benefit from European integration?

The next two questions are related to the Single Market. One issue concerns the possible consequences of a further decline in trade costs for monetary policy. Geographical

\textsuperscript{2}The EU governments have agreed that ten of the candidate member states can join in 2004.
distances in Europe are relatively small, the physical infrastructure is of good quality and formal trade barriers have been abolished. Nevertheless, economic transactions are still largely confined to agents within the same country, suggesting considerable scope for a further reduction in trade barriers. Does the completion of the Single Market enhance or reduce the effectiveness of the single monetary policy?

Also as part of the Single Market programme, the European Commission and national governments promote the enhancement of competition in Europe, in particular in sectors which tend to be shielded from international competition. The question arises how an increase in competition in the protected sector affects the aggregate level of output and the general price level and what this implies for the conduct of monetary policy. There are different channels, including spillovers to other sectors, through which such sector-specific measures can affect aggregate variables. But proper insight into these channels is lacking.

The final issue concerns the future Eastward expansion of the Union. What does the timing of the accession of new member states to the European Union imply for the behaviour of the real exchange rate between the currencies of the candidate member states and the euro? Real exchange rate movements could lead to political or economic troubles in the extended EU, either in the form of nominal exchange rate tensions or in the form of inflation differentials between the accession countries and the current member states. Does the desire for real exchange rate stability call for quick or postponed accession?

This dissertation stresses the importance of the international environment in which the European integration process is taking place: European integration affects many people in many countries: the current EU member states, the accession countries and many non-European countries.

Paying attention to the international environment is justified by history. From the beginning, the post-war process of European integration has been a matter of interest for non-Europeans as well. Intra-European cooperation has been strongly encouraged by the United States, if only to keep Western Europe out of the sphere of influence of the Soviet Union. European integration has received renewed US attention since the Single Market campaign of the late 1980s. The strengthening of economic cooperation within Europe has led to popular fears for a 'Fortress Europe' that would be inward-looking

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3As an example, the United States declared themselves prepared to provide financial aid under the Marshall plan on the condition that the European countries' reconstruction efforts were more closely coordinated. Among others, this led to the establishment of the Organisation for European Economic Cooperation, the forerunner of the Organisation for Economic Cooperation and Development (OECD).
Chapter 1. Introduction

and closed to the outside world.

Giving due consideration to the ‘rest of the world’ is also justified by the fact that the European Union is a large economy, in the sense that its policies lead to international spillovers (see Kenen, 1995, chapter 5 and Co screp, 1968, chapter 10). The interrelationship between Europe and the rest of the world is strengthened by the long-run trend of increasing international trade and financial relationships and the higher speed and capacity of communication across national borders, which enhance the importance of international spillovers between countries.

1.3 Methodology

In this dissertation, I take a theoretical model-based approach. The beauty and usefulness of theory have been eloquently described by Mundell (1964):

'Theory is the poetry of science. It is simplification, the essential abstraction, the exaggeration of truth. Through simplification theory creates a caricature of reality. [...] The caricature itself is not the real world - it mocks it. Yet mind true things by their mockeries! The caricature mocks reality; the deductions from the caricature illuminate it.'

Moreover, the use of models imposes a mathematical rigour which forces one to derive answers according to strict logic. There is also a more profane reason to opt for a theoretical approach: the fact that only several years have passed since the start of the monetary union implies that too few observations are available to conduct a meaningful empirical analysis.

I have chosen two different ‘angles of attack’: applied game theory and dynamic general equilibrium models. These will be discussed in the next two subsections.

1.3.1 Applied game theory

In the field of international economics, game theory is particularly useful to analyse the strategic interaction between policymakers. Until the late 1960s, economic analysis

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4The current globalisation process is unprecedented in history. Import tariffs have been quite low before (for example at the beginning of the twentieth century). However, the economic openness in earlier times was largely an illusion, as the international movement of people, goods, services and capital was then restricted by natural barriers: transportation was usually time-consuming and very costly, while information on foreign goods, prices and business partners was scarce and only became available with considerable time lags. See Cooper (1968, chapter 6).
1.3. Methodology

Generally assumed that all countries were atomistically small. This assumption implies that the policy decisions of a single country are irrelevant to all other countries. This may be true by approximation for small countries, such as the Netherlands, Belgium and Portugal. However, the conclusions of studies which use the small country simplification are less relevant for large economic areas such as the United States and Europe (Cooper, 1969). For large countries, setting monetary and fiscal policies gives rise to international spillovers. This raises the question how countries interact strategically in the field of economic policy. Recognising the importance of this issue, several authors, such as Johnson (1972) and Hamada (1976), advocated the application of game theory to international economic policy issues.

Contrary to most of the earlier literature, game theory represents an optimising approach. Agents are explicitly modeled and are assumed to maximise a pre-defined utility function. This makes it possible to pay attention to the trade-offs faced by economic agents, which provides insight into what drives their behaviour. The outstanding feature of game theory, however, is that it focusses on strategic interactions between economic agents.

I follow a game-theoretic approach in chapters 2 and 3 of this thesis. These chapters study the impact of monetary unification in Europe. The ‘players’ involved represent the governments and central banks in Europe and the United States (which represents the ‘rest of the world’).

Chapters 2 and 3 highlight the impact that the strategic interaction between monetary policy, fiscal policy, the wage-setting behaviour of employees and the location choice and hiring decisions by firms can have on a country’s performance in terms of inflation and output. The models are non-micro-founded. Countries are assumed to compete for economic activity. Wage rigidity is incorporated by assuming that wage contracts have been agreed before shocks occur and policies are set. Policymakers are assumed to have full knowledge of economic shocks.\(^5\) The implication of this sequencing of decisions is that policy surprises have economic effects.

1.3.2 Dynamic general equilibrium models

General equilibrium models are characterised by the fact that different economic agents and markets together are seen as a single integrated system. This contrasts with the partial equilibrium approach that dominated the profession until the early 1980s. The main advantage of the partial equilibrium approach is its simplicity, which makes it very

\(^5\)This may be true by approximation even if policymakers receive information at the same moment in time as wage-setters, if the former have more flexibility than wage-setters in setting their policy.
useful for explanatory purposes. In the field of international economics, the Mundell-Fleming-Dornbusch approach on the effectiveness of monetary and fiscal policies under different exchange rate regimes provides the classical example. It is still the dominating model in the minds of policymakers. The major drawback of the partial equilibrium approach, however, is that it may lead to the wrong conclusions as nothing guarantees the internal consistency of the models used (Svensson and Van Wijnbergen, 1989).

In dynamic general equilibrium models, time plays an explicit role. The economy is assumed to start in an initial steady state. Following a shock, the economy’s response in the short run and long run can be followed. Although still a considerable simplification of real-world economic dynamics, these models are more likely to generate relevant conclusions than static models.

General equilibrium models share with game-theoretic models that they use an optimising approach. However, general equilibrium models are based on more solid micro-foundations: the assumed behaviour of individual economic agents is fully specified. Agents are assumed to be selfish (they only care about their own well-being, as defined by the objective functions) and rational (they cannot be systematically fooled). By contrast, the general equilibrium models in chapters 4 to 6 of this thesis do not deal with strategic interactions, as the game-theoretic models of chapters 2 and 3 do.

In general equilibrium models, the structure of the economy can be more richly specified than in game-theoretic models. This adds many elements of realism. For example, chapters 2 and 3 assume that the purchasing power parity condition is satisfied. This helps to keep the analysis tractable, but at the cost of realism. Later chapters allow for deviations from PPP, caused by non-zero trading costs (chapter 4). by the presence of non-tradable goods which are not affected by international goods arbitrage (chapter 5) or both these elements (chapter 6).

The models in chapters 4 and 5 build on the framework of Obstfeld and Rogoff (1995) for the analysis of the impact of monetary and fiscal policies in an international context. Their claim that this model offers a new and promising framework for analysis has been confirmed by a growing body of literature based on their approach, which has been dubbed the ‘New Open Macroeconomics’. An important feature of these models is that they assume markets to be imperfectly competitive. In this respect, they deviate from more traditional models which are based on the assumption that all producers are price-takers. The other important characteristic of the models is the presence of short-run rigidities.

In chapter 6, I employ the Ricardian model developed by Dornbusch, Fischer and

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6See Lane (2001) and Sarno (2001).
Samuelson (1977) to analyse the pattern of international trade. Contrary to the models in chapters 4 and 5, this model does not allow for nominal rigidities and imperfect competition. Instead, the model contains other more realistic aspects, such as the presence of many goods. Furthermore, the character of each good (internationally tradable or not) is endogenously determined on the basis of production costs (comparative advantage) and trade costs.

1.4 Outline of the thesis

This thesis studies a number of questions related to European integration, with special attention for international spillovers to third countries.

Chapter 2 studies the consequences of monetary unification in Europe for transatlantic exchange rate stability. It focuses on the interaction between monetary policymakers in different countries. Monetary policy reactions to unanticipated economic shocks create international spillovers. The start of economic and monetary union (EMU) implies the elimination of monetary policy coordination failures within the euro area. The ECB will keep inflation closer to zero than the national central banks in Europe used to do. The reason is not that the ECB is more inflation-averse, but that the participating central banks become able to coordinate their policies as a result of EMU. This reduces their incentive to inflate. Whether this translates into more stable exchange rates depends on the origin of the shock. Martin’s (1997) conclusion that EMU will lead to more exchange rate stability is shown to hold for symmetric and asymmetric shocks in Europe, but not for shocks that originate in the United States. The latter type of shocks will cause a larger divergence of monetary policy stances across the Atlantic and will generate larger dollar-euro exchange rate movements than before the start of EMU. The results remain valid when we take into account that the pre-EMU era was characterised by a Bundesbank-led exchange rate mechanism (ERM), rather than a free float and when accounting for the fact that the ERM was not fully credible in the sense that there was always a non-negligible possibility that the mechanism would break down. The results are also robust for a future expansion of the euro area. This is likely to become relevant, given that the current outs (the United Kingdom, Sweden and Denmark) may decide to join the monetary union and given the foreseen eastward enlargement of the European Union and the expected future participation of the new member states in EMU. Most of the results remain valid even in the case of a possible expansion of the euro area. Only if the euro area were to become significantly larger that the US, could the dollar-euro

7The dynamic version of the model is due to Obstfeld and Rogoff (1996).
exchange rate become more, rather than less responsive to a symmetric worldwide shock than it used to be before EMU, as the US would have stronger incentives to actively use the exchange rate as a policy instrument.

Chapter 3 addresses the welfare consequences of monetary union. This chapter develops a game which involves monetary and fiscal policymakers in the euro area and the United States. The analysis allows for distortionary taxation and non-tax distortions, such as labour market regulation.\(^8\) The existence of such structural distortions introduces a commitment problem for both monetary and fiscal authorities. The welfare evaluation takes place for countries involved in the monetary unification and also for third countries. Considering the presence of third countries is important, since the ability to cooperate among a subgroup of policymakers may be counterproductive when coordination among all policymakers is not feasible.\(^9\) The welfare implications of EMU are studied using a framework developed by Beetsma and Bovenberg (1999b). My assumption that fiscal policymakers cannot commit and the focus on international spillovers in my model add new dimensions to their analysis. I conclude that the welfare implications of EMU for Europe are ambiguous. Intra-European spillovers in monetary policy are internalised. The ECB still has an incentive to conduct a beggar-thy-neighbour policy against the United States but, unlike national central banks before, not within Europe. This reduces the credibility problem of monetary policy in Europe and thus leads to a lower inflation bias, which is welfare-enhancing. At the same time, the euro area authorities lose a policy instrument: they lose the possibility to have different monetary policies in individual euro area countries. This makes it more difficult, also for fiscal authorities, to attain their policy goals, which is welfare-reducing. The welfare impact of EMU on Europe depends on which effect dominates. Interestingly, and contrary to public fears, US welfare should improve as a result of EMU. The reason is that the United States authorities, unlike the euro area authorities, do not lose a policy instrument, while under EMU they suffer less from European beggar-thy-neighbour policies than they did before. Thus, the United States (more generally: the rest of the world) benefits from European integration.

Chapter 4 analyses the consequences of a decline in trade costs, such as the further reduction of trade barriers between EU member states as part of the Single Market programme. The chapter stresses the fact that, despite this trend towards market in-

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\(^8\)The use of the term "distortions" is not meant to indicate that these arrangements are necessarily undesirable from a social point of view. It merely implies that they are deviations from the economically most efficient arrangements.

integration, product markets continue to be segmented.\(^{10}\) This is due to the fact that the costs of cross-border transactions are still larger than for transactions concluded between parties within the same country. These extra costs may be accounted for by differences in distribution channels, costs of cross-border advertisements or other implicit trade barriers. I show that small trading costs may lead to quite a substantial home bias in consumption and that the large decline in the home bias for European countries in the past decades found in the literature can be explained by a relatively small reduction in trading costs. The policy implication of this finding is the existence of a window of opportunities for the completion of the Single Market: small steps may have large effects. Because goods market integration reduces the home bias in consumer spending, it influences the effectiveness of monetary policy. In the current environment of declining costs of international trade, monetary policy becomes less powerful in terms of stabilising consumption, but more effective in terms of influencing the general price level. The intuition behind this result is that the presence of positive costs of international trade leads to a home bias in spending, which reinforces the transmission from money to consumption. Thus, a decline in the cost of international trade reduces the effectiveness of monetary policy with respect to consumption. The effectiveness of monetary policy with respect to the general price level is the flip-side of its effectiveness with respect to consumption.\(^{11}\) I also show that in the presence of wage stickiness, small international trade costs can explain seemingly excessive exchange rate volatility. Thus, ensuring that the candidate member states in Central and Eastern Europe have full access to the Single Market and quickly eliminating any remaining trade barriers could make an important contribution to ensuring exchange rate stability between their currencies and the euro.

Chapter 5 studies the macroeconomic implications of government initiatives to promote a higher degree of product market competition, in particular in sectors which are shielded from international competition. Such initiatives take place both at the European level and in individual EU member states. Enhancing competition leads to lower prices and higher output in the targeted sector. I show that increasing the degree of competition may have adverse implications (higher prices and lower output) for other sectors, due to the fact that an increase in labour demand in the targeted sector drives up the real wage and draws labour from other sectors. I find that, under realistic assumptions, enhanced competition in the non-tradable goods sector will stimulate national output and reduce the general price level. These results are supportive of the Single Market project and of initiatives by EU national authorities to deregulate domestic services

\(^{10}\)In the period 1993-95, Europeans purchased twelve times as much from domestic producers as from equally-distant foreign producers (Head and Mayer, 2000).

\(^{11}\)This follows from the long-run equilibrium conditions for the money market.
markets. I highlight the existence of four channels through which the degree of competition may affect the general price level and assess their relative importance algebraically. In contrast to many other factors which affect the general price level, product market liberalisation is no reason for a policy response by central banks per se, since the relative price adjustments involved reflect a more efficient allocation of scarce resources. The model developed in chapter 5 helps central banks to distinguish the impact of enhanced competition from other factors which influence the general price level and to derive the appropriate (temporary) adjustment of the inflation target.

Chapter 6 analyses the eastward enlargement of the European Union, with a special focus on the timing of the enlargement and its possible implications for the behaviour of the real exchange rates between the currencies of the new member states and the euro. It stresses the importance of asymmetries between the EU and the group of accession countries in terms of country size and productivity. I find that the timing of EU accession affects the real exchange rate response to accession. The real exchange rate of the candidate member states is predicted to appreciate upon accession. The real exchange rate appreciation is smaller in the case of postponed accession: the more productivity levels (and wages) of the current and new member states have converged before accession, the more price levels have converged and therefore the smaller the marginal impact of reducing trade costs on relative prices. Productivity shocks are likely to be an important source of real exchange fluctuations during the convergence process. I show that the response of the real exchange rate to productivity shocks declines as a result of EU accession. Intuitively, the decline in trade costs stimulates bilateral trade between the existing and new member states. The reduced size of the non-tradable sector means that the real exchange rate becomes less sensitive to unanticipated productivity shocks. Thus, EU accession itself will contribute to stabilising the real exchange rate (in case of a fixed nominal exchange rate regime: reducing the inflation differentials) between the accession countries and the existing EU member states.

Chapter 7 recapitulates the main results of this thesis, arranged by theme, rather than by chapter.