European Integration, Monetary Policy and Exchange Rate Behaviour
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Chapter 7

Conclusion

This chapter recapitulates the main results of this thesis. The results are arranged by theme, rather than by chapter. I distinguish between three themes: European integration and welfare (section 7.1), European integration and monetary policy (section 7.2) and European integration and the exchange rate (section 7.3). Section 7.4 identifies open issues for further research.

The results presented in the next three sections are true conditional on the modelling frameworks used in the previous chapters and under the assumptions made there. Thus, the generality of my conclusions depends on the realism and credibility of the underlying assumptions. Because relaxing the assumptions also identifies issues for future research (and in order to avoid repetition) the discussion of specific assumptions is postponed until section 7.4.

7.1 European integration and welfare

Economic and Monetary Union (EMU) involves monetary unification as well as abolishing the remaining trade barriers in Europe. In this thesis, a welfare analysis is applied to these two aspects of European integration. I reach the following conclusions on the welfare effects of monetary union (results 1 and 2) and trade integration (result 3).

Result 1: The welfare implications of monetary unification for the euro area are ambiguous.

This thesis finds that there is a trade-off between credibility and flexibility, in line with earlier results in the optimum currency area literature.¹ Monetary policy causes externalities: the policy response to unanticipated shocks leads to international spillovers,

¹In the early 1960s, Mundell reframed the old question on the optimal choice of an exchange rate
which enhance the need for policy adjustment in the foreign country. As a result of EMU, the intra-European externalities 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 monetary credibility problem 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, as country-specific shocks can no longer be addressed by monetary policy. This makes it more difficult to attain policy goals in each of the participating member states, which is welfare-reducing. The positive welfare impact of enhanced monetary credibility may or may not be dominated by the negative welfare impact of the loss of a policy instrument (chapter 3).

Result 2: US welfare improves as a result of the monetary union in Europe.

This conclusion contradicts popular fears. The reason for this welfare result 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 (chapter 3).


I show that a decline in the costs of cross-border transactions reduces the home bias in consumer spending. More cross-border transactions take place, but fewer resources are wasted in such transactions. Therefore, a decline in the cost of cross-border transactions leads to an increase in the steady state level of consumption and to a decline in the general price level, whereas it does not affect the amount of labour input (chapter 4).

7.2 European integration and monetary policy

The replacement of the national monetary policies by a single monetary policy as of 1999 can be seen as a cornerstone for the future of European cooperation. The conduct of monetary policy is affected by monetary unification itself (results 4 and 5), but also by the completion of the Single Market (results 6 and 7).

regime in terms of the optimal domain of a currency area. In 1981, Helpman argued that this question should be analysed from a welfare point of view, i.e. that different monetary regimes should be evaluated on the basis of a pre-defined objective function. Since then, this has been recognised as the correct approach.
Result 4: The ECB will keep the economy closer to price stability. Thus, EMU implies a more credible monetary policy.

The establishment of the ECB comes with full monetary policy coordination within the euro area, ensuring that all monetary externalities within the euro area are internalised in the decision-making process in the ECB Governing Council. Before the start of EMU, the national central banks in Europe had an incentive to increase output by causing surprise inflation, which enhanced the need for policy adjustment in other countries. Under EMU, part of this incentive is internalised: the ECB still has the incentive to conduct a beggar-thy-neighbour policy against the United States, but no longer within Europe. As a result, the ECB will keep the economy closer to price stability in response to economic shocks than the national central banks did before the start of EMU (chapter 2).

Result 5: The ECB will be less responsive to German shocks and also less responsive to shocks outside the euro area than the Bundesbank used to be.

The ECB will be less responsive to German shocks than the Bundesbank used to be before the start of EMU, because the ECB is less effective at stabilising German output and because German shocks carry a smaller weight in the ECB’s policy responses than they did in the Bundesbank’s. Whether the ECB will be more or less responsive than the Bundesbank to shocks in other euro area countries is ambiguous. The ECB will be less responsive to US shocks, as the ECB internalises the intra-European spillovers that occurred when all euro area national central banks responded to US shocks individually (chapter 3).

Result 6: The Single Market project implies that monetary policy becomes less powerful in terms of stabilising consumption, but more effective in terms of influencing the general price level.

Short-run price rigidities cause money to have real effects. Such real effects occur mainly in the short run. However, with intertemporal consumption smoothing, money may even

2The ambiguity can be seen as follows. On the one hand, shocks in other euro area countries are included in the euro area variables targeted by the ECB, whereas those shocks only had an indirect impact on Bundesbank policy (via the national authorities’ policy response and the resulting movements in the exchange rate against the German mark) before the start of EMU. On the other hand, intra-European monetary spillovers have been eliminated with the start of EMU. Therefore, the indirect impact of shocks in other European countries on Bundesbank policy before EMU may be larger than the direct impact on ECB policy, especially when the authorities give a large weight to output stabilisation, so that their policy response will be relatively strong and the resulting international spillovers large.
have long-run real effects: part of the extra consumption possibilities is saved, giving rise to a build-up of net foreign assets and to a long-run improvement in the terms of trade of the home country.\(^3\) The Single Market project leads to an environment of declining costs of international trade between the EU member states. The resulting reduction in the home bias in consumer spending implies that a monetary impulse will have a smaller impact on the current account and the terms of trade and that a larger share of the resulting consumption increase leaks to other countries. Thus, a decline in the costs of international trade reduces the effectiveness of monetary policy with respect to consumption. Long-term equilibrium in the money market requires that a permanent increase in the money supply is fully reflected in an increase in the *nominal* value of consumption. Therefore, a decline in the costs of international trade enhances the effectiveness of monetary policy with respect to the general price level (chapter 4).

**Result 7: The enhancement of competition under the Single Market project calls for a temporary downward adjustment of the inflation objective of the ECB.**

The Single Market project contributes to an increase in the degree of competition in the shielded (non-tradable) sector. Under the realistic assumptions that the shielded sector is relatively large and less competitive than the exposed (tradable) sector, an increase in the degree of competition in the shielded sector unambiguously lowers the general price level in the domestic economy. In the absence of second-round effects, 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. Therefore, ceteris paribus, initiatives to enhance product market competition would justify a temporary downward adjustment of the European Central Bank's inflation objective. This thesis provides a model which helps the ECB to distinguish the impact of enhanced competition from other factors which influence the general price level and to derive the appropriate (temporary) adjustment of its inflation objective (chapter 5).

### 7.3 European integration and the exchange rate

This thesis stresses the importance of interactions between on the one hand, the European economy and European policymakers, and the outside world, on the other. The

\(^3\)The long-run effect of money on consumption should not be overstated. It is in the order of magnitude of the real interest rate, as can be explained by the fact that it derives from the yield on net foreign assets accumulated in the short run.
exchange rate of the euro plays an important role here. It serves as an important channel of international transmission and forms a natural focus for policymakers and the public at large to evaluate the accomplishments of monetary and fiscal policies. The following conclusions refer to European integration and the exchange rate. Results 8 and 9 are about the impact of monetary integration on the exchange rate, results 10 and 11 concern the impact of the Single Market on the exchange rate and result 12 is on the eastward expansion of the Union.

Result 8: The impact of EMU on exchange rate stability critically depends on the origin of shocks.

The lower responsiveness of the ECB (compared to the Bundesbank before the start of EMU) to European shocks will translate into more exchange rate stability, whereas the lower responsiveness of the ECB to US shocks will translate into stronger exchange rate movements. On the assumption that the average frequency and size of shocks in Europe and the US is similar, the dollar-euro exchange rate will become more stable than the dollar-mark exchange rate used to be. These results remain unchanged even in the case of a possible future expansion of the euro area. Only if the euro area were to become significantly larger than the US, could the exchange rate become more, rather than less responsive to a symmetric worldwide shock than it used to be before EMU (chapter 2).

Result 9: Monetary unification leads to a weakening of the dollar against the euro.

On average, Europe is characterised by higher government spending targets and relatively large non-tax distortions, compared to the United States. This translates into an expected upward drift of the dollar. However, the expected trend appreciation of the dollar will be more moderate under EMU than under floating rates. The reason is that the structural distortions in Europe do not lead to such a large inflation bias under EMU as before, as a result of the internalisation of intra-European spillovers in monetary policy. Thus, monetary unification leads to a weaker dollar (= stronger euro) trend (chapter 3).

Result 10: The Single Market programme reduces the short-run volatility of the euro exchange rate against EU countries which do not participate in the monetary union (the ‘outs’).

Short-run wage rigidity inhibits the short-run adjustment of output prices, so short-run changes in the relative price level require exchange rate movements. Costs of international trade lead to a home bias in spending, which implies that only a small share
of goods is actually affected by exchange rate movements. A reduction in the costs associated with cross-border transactions in Europe (as implied by the Single Market programme) reduces the home bias in spending and therefore enhances the short-run impact of exchange rate changes on the general price level. Therefore, the achievement of short-run equilibrium after unanticipated shocks requires smaller short-run exchange rate movements between the euro and the currencies of the non-participating member states than before (chapter 4).

**Result 11:** The Single Market programme may lead to a depreciation of the euro.

The permanent enhancement of non-tradables competition as part of the Single Market programme leads to a long-run depreciation of the euro. A long-run depreciation is required, since euro area demand shifts from tradable towards non-tradable goods. The lower euro area demand for tradable goods must be (partially) offset by higher foreign demand for tradables. The depreciation partly offsets the relative increase in the euro area’s tradable goods price (chapter 5).

**Result 12:** Quick EU accession causes a relatively large real appreciation of the candidate countries’ currencies against the euro upon joining, but reduces the real exchange rate response to productivity shocks.

The real exchange rates of the candidate member states are predicted to appreciate by 1-2% upon accession (based on a three percentage point decline in trade costs and not taking into account confidence effects). The real exchange rate appreciation upon joining the EU is smaller in the case of postponed accession. Intuitively, 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. The response of the real exchange rate to productivity shocks (which are likely to be an important source of real exchange rate fluctuations during the convergence process) 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 changes. Thus, EU accession 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 6).
7.4 Further research

The analysis in this dissertation could be extended in several ways. Most importantly, relaxing some of the assumptions would make it possible to check the generality of the results in the preceding chapters and thus enhance the practical relevance of the policy implications.

An important simplification in chapters 2 and 3 is how the international transmission of shocks is modelled: surprise inflation reduces the cost of production, attracts foreign firms and therefore has a positive effect on home output and a negative effect on foreign output. One possible extension would be to relax the purchasing power parity (PPP) assumption in chapters 2 and 3.\(^4\) This would introduce the real exchange rate as a channel of international transmission. An alternative would be to allow for positive international spillovers on the demand side. If the positive income effect of money expansion dominates the negative substitution effect caused by the real depreciation of the currency, the results from chapters 2 and 3 would probably become less clear-cut, but also more useful for policy purposes.

It would also be interesting to elaborate on the behaviour of the firm in chapters 2 and 3, as this aspect probably involves the strongest ad-hoc assumptions made in these chapters. Introducing non-zero costs of relocation of production would reduce the quantitative importance of international spillover effects, as firms would be less inclined to move in response to unexpected shocks or policy changes, but it would probably render the qualitative statements unchanged. Relaxing the (rather restrictive) assumptions with respect to the output elasticities would make all solutions much more complicated. This would probably not change the result that EMU will lead to a more moderate policy response of central banks to supply shocks, but the implications for transatlantic exchange rate stability may turn out to be less robust. Parameter sensitivity analysis or calibrated simulations could be used to explore the factors influencing any resulting ambiguities.

As a follow-up to the analysis in chapter 4, it would be interesting to model market integration as an increase in the cross-border elasticity of substitution, thus focussing on changes on the demand side, rather than on the reduction in trade costs. Such an approach would help to address initiatives in the context of the Single Market project which affect consumers directly (for instance, improving price transparency and the availability of product information), rather than via the behaviour of firms. Recent work by Tille (2000, 2001) suggests that introducing differences between within-country

\(^4\)This could be done by distinguishing between tradable and non-tradable goods, or by assuming anticipated PPP, thus allowing for inflation surprises to cause deviations from PPP ex post.
and cross-border elasticities of substitution may reverse some of the familiar rules of thumb for international transmission provided by standard textbook models.

The dynamics following an increase in competition in the shielded sector are much more complicated than captured by the model in chapter 5. This is true in particular for the indirect effects of increasing the degree of competition on the general price level. It would be interesting to extend the model by introducing intermediate goods, which ECB (2001) suggests could be an important channel. A decline in the price of intermediate goods is likely to enhance the downward impact on the price level reported in chapter 5, but it is also likely to reduce the relative price decline in the shielded sector, thus reducing the shift away from the open sector and reducing the size of the euro depreciation reported in this chapter.

Allowing for firm entry and exit would also be a useful and logical extension of the model in chapter 5, given that this chapter analyses the impact of enhanced competition. Allowing for firm entry and exit would make it possible to distinguish between policy measures aimed at enhancing competition via the demand side (via lowering switching costs to consumers) and policy measures operating via the supply side (lowering entry costs to firms). This would enable one to analyse different forms of market liberalisation, rather than just one ‘mix’. Moreover, it would become possible to take into account feedback mechanisms, such as the fact that an increase in the number of firms is likely to reduce the switching costs to consumers.

Chapter 6 analysed the real exchange rate response to economy-wide productivity shocks. The fact that the (non-) tradability of each good is endogenously determined complicates the analysis of sector-specific productivity shocks. Adjusting the model so as to enable the analysis of sector-specific shocks would be in line with the Balassa-Samuelson view that catch-up effects occur mainly in the tradable goods sector. A rise in productivity in the tradable goods sector (rather than economy-wide) is likely to have the opposite impact on the real exchange rate of the currencies of the candidate member states against the euro. However, I would expect the results of chapter 6 on the relationship between the timing of EU accession and real exchange rate stability to be qualitatively unchanged.