EMU and the monetary transmission mechanism

EMU study

HM TREASURY

Executive Summary

1 A key issue determining whether it would be in the UK's economic interest to join Economic and Monetary Union (EMU) is whether a single euro area monetary policy would affect the UK economy in a different way to other euro area countries. A different response in the UK to a change in European Central Bank (ECB) interest rates, in terms of the speed of response or its overall effect on output and inflation, might generate a different cyclical path for the UK relative to the rest of the euro area and greater volatility of output and inflation.

2 The transmission of monetary policy is complex both in theory and in practice. A large economic literature is devoted to its understanding, including extensive research by both the Bank of England and the European Central Bank. This study takes a wide-ranging approach to consider both the workings of the transmission mechanism, and the overall speed and strength of the UK transmission mechanism when compared to other countries. However, the approach stops short of looking at the broader question of the mechanisms by which economies adjust to shocks. This issue is dealt with in the EMU study *Modelling shocks and adjustment mechanisms in EMU*.

3 In the long-run steady state, standard economic theory suggests that monetary policy has little impact on the trend path of output, which is largely determined by real variables, such as the degree of knowledge, skills and technology in the economy. However, monetary policy can affect output in the short to medium term due to the presence of price and wage rigidity in the economy; and even in the long run, volatility may affect the output-inflation trade-off.

Summary of structural analysis

4 Monetary policy may impact on output and prices through a wide variety of channels, and numerous structural factors will influence the speed and extent of the transmission mechanism through these channels. Analysis of these structures suggests that the UK may be more sensitive to monetary policy through some channels, and less sensitive through others.

5 Factors which may make the UK *more* sensitive than euro area countries to monetary policy, that is, factors which may lead monetary policy to have a stronger and faster effect on output, include:

- the greater speed and extent of the **pass-through of interest rate changes** from official interest rates to bank lending rates in the UK; studies suggest it is weaker in other large countries such as France and Germany;
- high levels of **mortgage debt** in the UK, combined with the dominance of variable rate mortgages, implies that the sensitivity of household interest payments to changes in interest rates is higher in the UK than in euro area countries;
- the competitive, liberalised mortgage market in the UK makes it easier for households to access **housing wealth** than is the case in the large euro area countries. Real house price growth in the UK has been stronger than in most euro area countries, and the low response of housing supply in the UK appears to be an important reason for this. The importance of the housing sector in the UK is why HM Treasury has produced the EMU study *Housing, consumption and EMU* devoted to this issue. The key conclusions of that study are repeated in Section 3;

- the UK may experience a greater impact on consumption from changes in **financial wealth**, due to the greater size of equity holdings and the wider demographic profile of equity holders. However, the impact on consumption in the UK may be lessened because financial wealth is primarily held in life and pension funds;

- the UK and Germany have higher levels of **non-EMU trade** than France and Italy, though the differences are not great in relation to overall GDP;

- the UK has a larger stock of **foreign assets and liabilities** than major euro area countries, although this may be a reflection of the UK's role as an international financial centre and so have limited implications for the behaviour of consumption; and

- the **broad credit channel** of the transmission mechanism, whereby the ability of firms to secure financing is reduced in a monetary tightening, may be stronger in the UK. Relationships between banks and firms tend to be less close than in countries such as Germany, and UK firms may have higher levels of leverage.

6 Factors which may make the UK *less* sensitive than euro area countries to monetary policy, that is, factors which may lead monetary policy to have a weaker and slower effect on output, include:

- the UK is likely to have a lower exposure to the **bank-lending channel** of the transmission mechanism, whereby banks reduce lending in a monetary tightening due to supply constraints. The UK banking sector is dominated by large banks for whom these supply constraints may be less important; in addition, UK firms have greater access to alternative sources of finance. Structural factors suggest the bank-lending channel could be stronger in France, Italy and Spain;

- the **structure of production** is relatively service-intensive in the UK. Monetary policy may have a stronger impact on investment and durable goods sectors; these sectors are more important in the German economy; and

- the UK is seen to have relatively low levels of **nominal wage rigidity**. Nominal wage and price rigidity strengthen the impact of monetary policy on output (and temporarily reduce the impact on inflation): if wages and prices are fully flexible then standard economic theory implies monetary policy has no influence on output – the principle of the neutrality of money.

7 The UK's overall sensitivity to monetary policy relative to euro area countries will depend on how these effects balance out in aggregate. The analysis in this study indicates that there is more evidence for structural factors that will increase the strength of the transmission mechanism in the UK relative to other countries. But it is difficult to weigh up in aggregate the impact of structural factors so as to identify the overall relative strength of the monetary transmission mechanism. To do this would require each structural factor to be weighted according to its importance in the transmission mechanism. The wide range of structures which influence the transmission mechanism has distributional implications. For example, the importance of the housing market in the UK suggests that homeowners will be affected differently to non-homeowners by the level of interest rates and by interest rate changes.

Summary of empirical analysis using economic models

8 Section 4 takes an alternative approach to analysing the monetary transmission mechanism, examining empirical studies which use econometric techniques to capture cross-country differences at the macroeconomic level. Rather than identify the specific structural microeconomic factors which may drive differences, these studies identify the overall sensitivity of output or inflation to a monetary policy change. In Section 5, HM Treasury has undertaken a new modelling exercise which supplements existing analysis by attempting to model the transmission of monetary policy in the UK and the euro area when the UK is assumed to be inside and outside EMU.

9 The existing and new analyses lead to the following conclusions:

- a study by Smets (1995) compares the cross-country responses to a monetary policy shock using the different country-specific macroeconomic models maintained by national central banks. This study stands out as suggesting that the UK has a significantly stronger output response than euro area countries. However, the Treasury Public Model estimates that the UK response to the same shock is broadly in line with the results for the euro area countries. The Bank of England (2000) also estimates a lower UK output response than in Smets (1995).
- a different modelling approach is to apply the same theoretical model across countries. In contrast to the Smets (1995) results, these cross-country models often find that differences in transmission mechanisms are quite low, and the UK does not appear to be an obvious outlier; and
- the National Institute Global Econometric Model (NiGEM) is a multi-country structural model which can simulate the UK response to a change in monetary policy as if the UK were inside EMU. New simulations on this model, undertaken by HM Treasury, find some differences in the compositional impact, but no significant difference between the overall impact on output and inflation between the UK and the euro area.

10 Two main modelling approaches are considered in this study. In the first, a common theoretical model is applied across countries. This reduces the likelihood of differences in model specification being responsible for differences in results. But it also means that real structural differences which exist between countries are not fully captured. The second approach is to use a different theoretical model for each country. This approach is in principle better suited to identifying real structural differences between countries, but in practice it is difficult to distinguish these from differences due to modelling approaches. This conflict between the desire to identify real stuctural differences and the need to minimise potential differences due to modelling approaches has not been satisfactorily resolved despite extensive and on-going research by academics and international organisations.

11 Overall, empirical model-based studies do not demonstrate consistently that the UK transmission mechanism stands out in terms of leading to divergent outcomes. However, as noted above, many of these models do not fully reflect the structural differences which exist in reality, because they use techniques which are not always the best way of considering specific area which may have special characteristics and particular importance such as the housing market in the UK. This is a key motivation for the EMU study by HM Treasury *Housing, consumption and EMU*.

12 For example, although the NiGEM model has recently been developed to include a consumption channel via housing wealth effects for the UK, the scale of the effects are assumed to be small. Because the housing sector is a potentially important structural difference between the UK and euro area economies, the degree of asymmetry between the UK and euro area is likely to be greater than the NiGEM simulations predict. The EMU study *Housing, consumption and EMU* finds that although empirical evidence on the impact of changes to interest rates and housing wealth on consumption is not as clear-cut as the evidence of structural differences, on balance it supports the view that the sensitivity of household spending through the housing market is higher in the UK than elsewhere.

Summary of analysis of the endogeneity of the transmission mechanism

13 Much of the analysis of these issues is static – examining current or past differences between the UK and the euro area. But the influence of EMU membership and other developments could change the structure of transmission mechanisms:

- entry to EMU would involve a shift to a regime with no movement in the nominal exchange rate against the euro area, and so an immediate effect would be to reduce the importance of the exchange rate channel;
- one reason why the UK is exposed to high levels of mortgage debt at variable rates is its history of macroeconomic instability with high and volatile inflation. In such an environment, lenders tend to be unwilling to offer fixed rate mortgages except at very high rates, to avoid the risk that inflation will erode returns. The UK now has a macroeconomic framework which is delivering stability and low inflation. Since 1999, the ECB has maintained price stability in the euro area. In or out of EMU, the more stable macroeconomic environment might erode differences in the structure of mortgage debt;
- entry to the euro has the potential to facilitate further convergence in mortgage systems by aiding cross-border competition in savings and mortgage products. There are still significant barriers though, and structural factors, such as differences in the responsiveness of housing supply, mean variations in house price trends are also likely to continue in the near future; and
- EMU has promoted the growth and integration of financial markets in the euro area. In turn this may promote convergence of financial structures. Some argue that the euro area will develop capital markets more like those of the UK, due to the rise in institutional investment driven by an increasing provision of private pensions. There is some evidence that this is happening.

Conclusions

14 Certain features of the UK economy, in particular the household sector's large stock of mortgages held at variable rates and other aspects of the housing market (analysed in detail in the EMU study *Housing, consumption and EMU)*, suggest the UK monetary transmission mechanism may be stronger than that of the euro area. Other features of the economy may act to reduce the strength of the UK transmission mechanism in relation to euro area countries. The structural analysis in this study suggests that the former group of features are dominant. Empirical model-based studies do not demonstrate consistently that the UK transmission mechanism stands out in terms of leading to divergent outcomes. But these models do not fully reflect the structural differences which would be most relevant in practice. That said, at least some of any differences which do exist may erode over time, particularly if the UK were to enter EMU on the basis of sustainable convergence between the UK and the euro area. This issue is considered further in the convergence test – the first of the Government's five economic tests for EMU entry.