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## 1 Introduction

The first decade of EMU has taught us much about the power of a single currency to integrate financial markets (see also Lane 2006a, Lane and Walti 2007 and Benetrix and Walti 2008). In this review, I first discuss the quantitative impact of the euro on cross-border financial holdings before turning to the macroeconomic implications of enhanced financial integration.

## 2 The Euro and Financial Markets

To a large degree, the inter-bank and money markets in the euro area very quickly unified upon the launch of EMU in 1999. Moreover, the elimination of currency risk has generated a very high degree of substitutability across the bonds issued by different governments and corporations across the euro area. Lane (2006b) estimates that, controlling for other factors, bilateral bond holdings among members of the euro area are 97 percent higher than among other cross-border pairings. While the increase in cross-border holdings is largely driven by a decline in home bias, the increase in intra-area holdings may in part be financed by a portfolio switch away from assets external to the euro area (Coerdacier and Martin 2007).

The scale of inter-bank lending across the euro area has also grown rapidly. As shown by Spiegel (2007), this has transformed the geography of commercial bank lending, with

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banks in countries such as Portugal and Greece now obtaining finance from banks in other member countries rather than from non-EMU sources.

There is also considerable evidence that the single currency has enhanced the integration of national equity markets across the euro area. Lane and Milesi-Ferretti (2007a) find that there is a ‘euro bias’ in cross-border equity holdings: controlling for other fundamentals, the level of portfolio equity investment is substantially higher between members of the euro area than among other pairings (the preferred estimate of the euro effect is that it raises bilateral equity holdings between member countries by 62 percent for equities). The integration of equity markets was stimulated by the impact of local-currency mandates on many institutional investors - the replacement of national currencies by the euro meant that the feasible universe for such investors was greatly enlarged. The positive impact of the euro was reinforced by the large-scale EU-wide effort to reduce cross-border transactions costs in securities trade and the consolidation of national stock exchanges (most visibly, the Amsterdam, Brussels, Lisbon and Paris stock exchanges are now under the control of NYSE-Euronext). The euro has also raised the level of cross-border direct investment between member countries: De Sousa and Lochard (2006) estimate the impact to be a substantial 26 percent.

The high level of integration has transformed the issuance patterns and asset pricing in the bond market. Historically limited by the small size of individual national markets, currency union led to a dramatic expansion in bond issuance by European firms and banks: Lane (2006a) records that quarterly gross issues have averaged 15.2 percent of GDP since the start of EMU, nearly double the 8.2 percent average during 1991-1998. As documented by Pagano and von Thadden (2004), the rapid expansion of the bond market was directly facilitated by the contribution of the single currency to increased competition among investment banks and an associated reduction in issuance costs and greater access for smaller and higher-risk issuers.

The creation of the single currency has also encouraged entities from outside the euro area to issue euro-denominated bonds. According to the European Central Bank (2007), the euro had a 47 percent share of the outstanding stock of international debt securities by the end of 2006. The propensity to issue securities in euro cuts across a wide range of countries. Perhaps most striking is the rapid growth in the issuance of euro-denominated securities by US residents (primarily US financial institutions). The US Treasury (2006) reports that the value of euro-denominated long-term debt securities issued by US residents and purchased by foreign investors had grown from \$39 billion in 2000 to \$339 billion in 2006, which constitutes an increase in the share of total long-term foreign debt liabilities

from 2.1 percent to 7.2 percent.

The integration of bond markets has been associated with very high correlations in bond returns across the euro area. Moreover, spreads across government bond yields have narrowed to very low levels. While this yield convergence in part reflects a convergence in fundamentals and the elimination of liquidity premia associated with the domestic-currency debts of the smaller member countries, it also reflects the fact that investors regard the bonds issued by member countries as very close substitutes. Although weaker, a qualitatively similar effect is found in the pattern of equity returns. Lane and Walti (2007) show that, after controlling for common factors, the correlations in the idiosyncratic component of national stock market returns have increased among members of the euro area, with the increase in co-movements clearly beginning in 1998 during the run-up to the launch of EMU.

Overall, the scale of market integration is impressive. At a global level, the creation of the euro has led to a more rapid increase in cross-border asset and liability positions in Europe relative to other regions (Lane and Milesi-Ferretti 2008). That said, the current financial turmoil has led to a resurgence in the importance of “national” factors in market dynamics and asset pricing. While the increase in spreads in the government bond market may in part reflect an over-due acknowledgement that the European Central Bank does not provide a guarantee on sovereign debt, the events in the inter-bank market suggest that asymmetric information problems are more easily overcome within the home system than across the broader euro area market. The importance of national factors is re-inforced by the important role played by national central banks in the Eurosystem in assessing the collateral provided in ESCB repo auctions.

Turning briefly to the impact of the euro on retail finance, much remains to be done in terms of promoting integration at the retail banking level. However, the launch of the Single Euro Payments Area (SEPA) in 2008 marks an important milestone in eliminating the distinction between domestic and cross-border electronic payments across the euro area. Further progress in the integration of securities settlements systems is also desirable and a major target for European policymakers. In large part, the barriers to integration in these areas are not technical but reflect political efforts by incumbents to preserve monopoly power in their home markets.

### 3 Financial Integration and Macroeconomic Behaviour

A currency union should work more smoothly, the more national consumption levels can be insulated from domestic macroeconomic shocks via cross-border risk sharing. In view of the sharp growth in cross-border asset holdings across the euro area that we have documented, this suggests that increased financial integration has improved the macroeconomic coherence of the euro area. Holding other factors constant, this is undoubtedly true at a qualitative level. However, the quantitative scale of cross-border positions (relative to indicators of national income or wealth) remains relatively low, in view of the remaining high home bias in financial holdings and the importance of non-financial factors (housing, human capital) in driving aggregate wealth dynamics. In addition, it is important to appreciate that financial globalisation has also led to considerable growth in international financial holdings outside the euro area, with considerable heterogeneity across member countries (for instance, Austria has considerable assets in Central and Eastern Europe, while Spanish banks have an extensive presence in Latin America and Ireland's financial linkages with the United States are very strong). For this reason, national wealth dynamics may diverge due to differential exposures to financial shocks from outside the euro area.

Moreover, the high co-movement in asset returns across markets (especially within the euro area) means that the scope for diversification is quite limited. This is especially the case for countries where the coverage of the national stockmarket is narrow, such that it is difficult to hedge national macroeconomic risks via an equity portfolio (Schmitz 2007). Indeed, the elimination of national currencies has eliminated one risk-sharing mechanism, since nominal exchange rate fluctuations have historically played an important role in driving the relative returns on nominal bonds (Neumeyer 1998).

Moreover, financial integration has been associated with a greater dispersion in current account positions across the euro area, which has contributed to differential wealth dynamics via the funding of property booms in countries such as Ireland and Spain (Blanchard and Giavazzi 2002, Lane 2006a, Fagan and Gaspar 2007). Prior to EMU, a burgeoning current account deficit in a small, peripheral European country would have prompted an increase in the country risk premium, in view of the increased risk of currency depreciation. Membership of the euro area has eliminated national currency risk and the first decade of EMU has seen remarkably large current account deficits in some member countries, in large part funded by loans from banks in other member countries. The pattern that a large proportion of the cross-border assets and liabilities of member countries are now denominated in euro will surely alter the dynamics of external adjustment, with no role for the nominal

exchange rate in correcting intra-EMU imbalances (Lane and Shambaugh 2007).

Although the current financial turmoil has certainly led to greater differentiation in risk assessment across the euro area (for instance, bank shares in the deficit countries have declined sharply while the spreads on government bonds in some cases have also increased), the insulation provided by EMU remains considerable. In particular, it is illuminating to contrast the financial volatility facing non-EMU deficit economies such as Iceland with the relative stability of the EMU member countries. Although deficit countries certainly face adjustment problems within EMU, the elimination of the risk of a speculative attack in the currency market is surely a major benefit of EMU membership. By extension, for the new member states of the European Union that have not yet joined the euro, the risks of running large current account deficits while maintaining independent currencies are considerable (Lane and Milesi-Ferretti 2007b).

## 4 Conclusions

The introduction of the euro had a swift and quantitatively-large impact on the financial markets of the euro area. While the 2007-2008 international financial crisis has re-awakened interest in national differences in financial positions, the overall impact has been to sharply reduce home bias in bond markets and (albeit to a lesser extent) in equity portfolios. Although enhanced integration improves international risk sharing, other forces have acted in a counter-vailing fashion. First, financial holdings by euro area investors in the rest of the world have also grown rapidly over the last decade but with heterogeneous patterns of exposure across the member countries. Second, financial integration has also contributed to greater dispersion and persistence in current account positions that has been accompanied by divergence in house price dynamics. That said, the shifts in consumption and housing prices are mainly a once-off adjustment to the new financial environment that has disproportionately benefited the peripheral and lower-income member countries: over time, the diversification benefits provided by greater financial integration should emerge as a long-term gain from the creation of EMU.

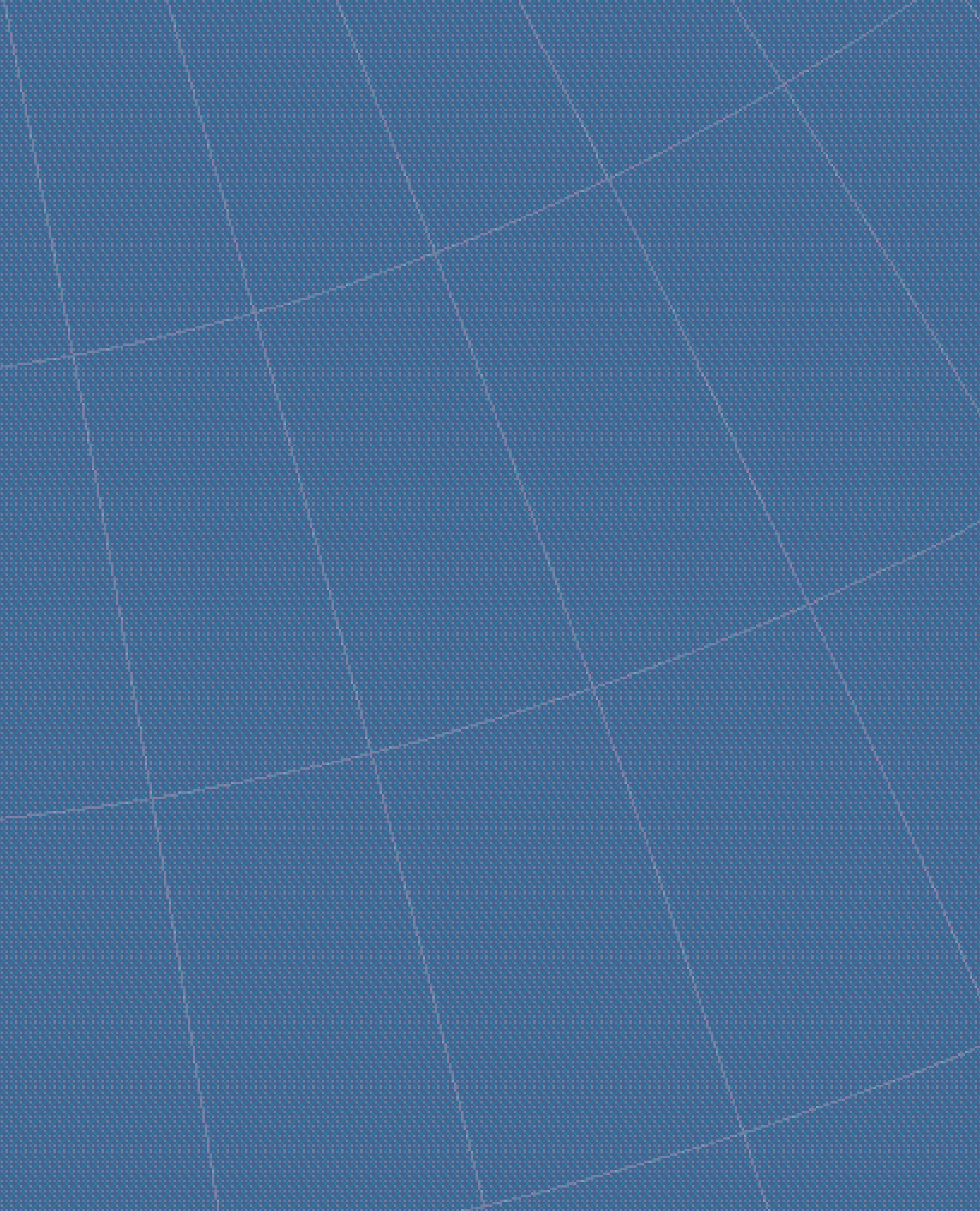
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