

ANALYSING THE TOPOLOGY OF THE EU CROSS-BORDER BANKING FLOWS NETWORK

In an integrated financial system, cross-border banking flows are an important source of funding for financial institutions as well as for private sector borrowers. From the viewpoint of financial institutions, wider access to wholesale financing reduces the dependency of individual institutions on local deposit bases and it allows for a more efficient day-to-day management of their funding liquidity needs. In addition, by allowing for the matching of institutions with surplus and deficit funds in the cross-border interbank markets, it provides obvious welfare gains from trade. For retail clients, an integrated cross-border banking market allows for equal treatment of borrowers across different parts of the financial system by exposing local lenders to foreign competition. At the same time, however, in times of financial stress a network of cross-border banking flows could provide a channel through which problems in one institution may propagate wider throughout the financial system. This box illustrates some stylised facts about the network of EU cross-border banking flows (and its interlinkage with the United States which is included as a proxy for the “rest of the world”), using country-level data collected by the Bank for International Settlements (BIS). At the European level, an EU rather than a euro area geographical scope to the analysis is more meaningful due to the fact that some non-euro area EU countries, such as the United Kingdom and Sweden, are important financial counterparties for several euro area countries.

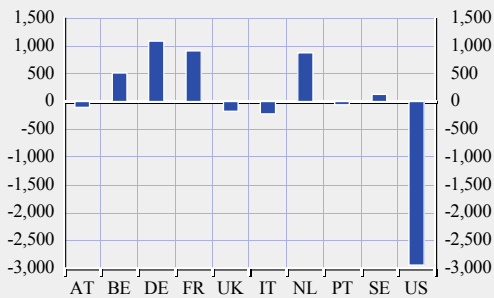
The data consist of consolidated claims of reporting banks on an immediate borrower basis. In order to obtain maximum data coverage at the EU level, total foreign claims on an ultimate risk basis – which includes exposures of banking groups not only to other banks but also to the non-bank private sector and the public sector – are considered. However, not all EU countries report figures under these statistics and the illustration below therefore covers the largest possible subset of countries. According to the BIS figures, the “pure” interbank exposures – for which there is only incomplete data coverage – represent on average about 35% of the total foreign claims, a share which has remained fairly stable over time. The data report bilateral flows of cross-border claims and debts across most EU countries over the period between Q2 2005 and Q2 2007.

To analyse the relative importance of the various countries in this extended EU network of cross-border banking transactions, it is useful first to consider the net flows. Chart A shows that in the cross-border banking flow network, for many of the EU Member States included in the chart the claims and debts broadly net out vis-à-vis the other countries in the system. The main exceptions to the near-zero net position in the system are Germany, France and the Netherlands, which have net claims positions, mostly vis-à-vis the United Kingdom. Outside the EU system, the United States has a large net debt position against many EU Member States, especially the United Kingdom, Germany and the Netherlands. Closer analysis of the net banking flows data, including smaller Member States, reveals in addition that there are rather strong regional links in the cross-country net banking flows. For example, banks in Finland, France, Portugal, Austria and Italy all have their neighbouring countries among their main counterparties.

In order to illustrate the relative importance of the various countries as financial centres in the network of cross-border banking flows, Chart B presents the same data in a different way by summing up the cross-border banking debts and claims to gross flows. For example, looking at

Chart A Net cross-border banking flows across selected EU countries and the United States

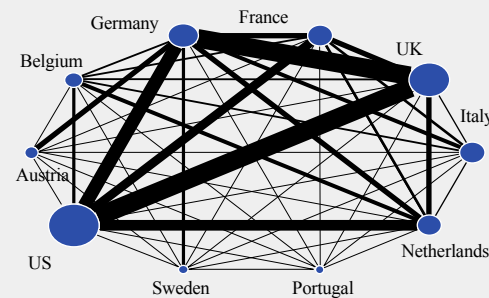
(€ billions; claims minus debts)



Sources: Bank for International Settlements and ECB calculations.

Chart B Gross cross-border banking flows across selected EU countries and the United States

(claims plus debts)



Sources: Bank for International Settlements and ECB calculations.
Note: The size of the circles and the thickness of the lines are proportional to the volume of the claims and debts for each country.

the total net flows in the system, the United Kingdom has only a rather small net debt position, but in terms of gross flows it is a very large player, reflecting its position as a centre for financial transactions in the EU. Germany and, to a lesser extent, France and the Netherlands are also important hubs in the EU banking system in that they process a large gross amount of flows. The chart also shows the importance of the United States as a global financial counterparty to many EU countries in gross terms.

Although this is useful for improving the understanding of some of the key characteristics of the topology of the EU financial system, for financial stability monitoring purposes bank-level information on gross interbank flows would provide a more relevant source of information. As an illustration of the usefulness of such data, the Federal Reserve Bank of New York has analysed the topology of the interbank payment flows within the US Fedwire real-time settlement system.¹ Within the system, some 5,000 participating banks are involved in around 700,000 transfers on an average day. Nevertheless, the analysis revealed that the network is characterised by a relatively small number of “strong” flows so that, on a daily basis, 75% of the payment flows involved less than 0.1% of the institutions in the system. The average bank in Fedwire was found to be connected to 15 other banks. Again, a closer analysis revealed that the dispersion of these connections is very wide as most banks have only a few connections while a small number of “hub banks” can have thousands of connections. In terms of preventing systemic crises, whereby disturbances can quickly spread within the network of institutions, identifying such systemically relevant hub institutions and closely monitoring their liquidity and solvency situation would be particularly relevant.

¹ See K. Soramaki, M. Bech, J. Arnold, R. Glass and W. Beyeler (2006), “The Topology of Interbank Payment Flows”, *Federal Reserve Bank of New York Staff Report*, No 243.