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Abstract

We provide a brief review and analysis of recent trends in international financial integration. In particular, we highlight the asymmetric nature of financial globalization, with the scale of cross-border positions among the advanced economies growing more quickly than for emerging market economies and developing countries. We investigate the sources of this divergent pattern and discuss the factors that could shape financial globalization in the coming years.

Over the past decade, emerging markets have accounted for a growing fraction of world GDP and international trade (reflecting fast growth in China and India, but also strong economic performance across the board). And the spectacular increase in foreign exchange reserve holdings, the growing importance of sovereign wealth funds, and the pattern of global imbalances more generally suggest that these countries are also playing a major role in financial globalization.

But is this really the case? Figure 1, which shows the fractions of global trade and global cross-border holdings of financial instruments that are accounted for by the advanced economies, gives us some pause.[1] Over the past decade, these economies' share of world trade has substantially declined but their share of cross-border financial holdings has increased. This increase has occurred despite some decrease in their share of world financial market capitalization (Table 1). The table also shows that the increased share is most pronounced in cross-border non-reserve debt assets and debt liabilities (such as debt securities, loans, and deposits), even if the decline in their share of foreign exchange reserves has been precipitous.

What can help explain these stylized facts? And, more generally, what explains the differing degree of international financial integration across advanced economies, emerging markets, and developing countries? And what are the policy implications and risks deriving from the sharp trend towards increasing cross-border asset trade? In what follows, we provide some preliminary findings and reflections on this important research agenda.

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[1] We include in this category: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, United States.

Figure 1. Share of advanced countries in world trade and cross-border financial positions.
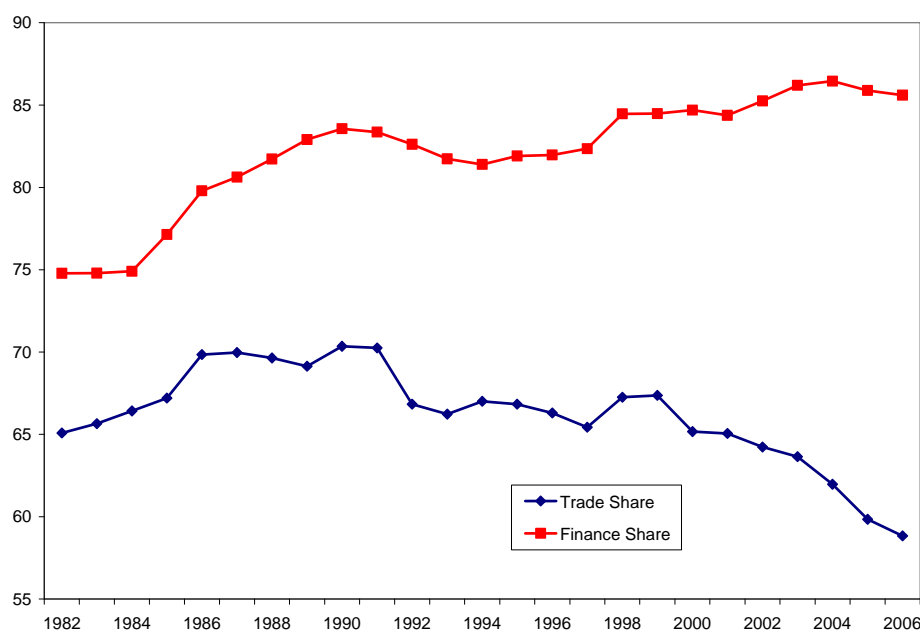
Note: Authors' calculations based on Lane and Milesi-Ferretti (2007) and WDI data.

Table 1. Global Shares of Advanced Countries

Global Totals	1996	2006	External Categories	1996	2006
Trade	67.4	58.4	Debt assets	84.0	88.6
Stock market capitalization	87.9	83.3	Debt liabilities	80.3	90.3
Debt securities outstanding	93.8	90.9	Portfolio equity assets	92.6	90.8
Bank deposits	87.2	79.1	Portfolio equity liabilities	90.1	86.2
Foreign assets	84.2	85.6	FDI assets	90.2	89.1
Foreign liabilities	81.1	86.5	FDI liabilities	72.3	73.8
			Reserves	48.3	28.3

Note: Authors' calculations based on Lane and Milesi-Ferretti (2007), IFS, WDI, World Bank and Global Financial Data for financial sector data.

I.   The Differential Nature of Financial Globalization

The patterns we just outlined reflect the tremendous heterogeneity in international financial

linkages that have been generated by the current phase of financial globalization. As a group,

the advanced economies are characterized by extensive cross-border asset trade. In addition to the stimulus provided by earlier waves of capital account liberalization, financial deregulation, and falling communications costs, a major factor driving cross-border integration in recent years has been the pace of financial innovation. The growth in cross-border financial holdings among advanced economies has been driven by sectoral trends such as securitization, the rise of hedge funds, and the widespread use of offshore special purpose vehicles by financial and non-financial corporations. As vividly illustrated by the events of 2007, financial innovation in one economy raises demand by foreign investors in other advanced economies that wish to gain exposure to new asset classes. Moreover, much of this new activity has been directed at arbitraging differences across jurisdictions in asset prices and tax and regulatory systems, generating a strong connection between financial innovation and financial globalization.

An additional factor driving the growth in cross-border asset trade among the advanced economies has been the creation of the euro. Together with parallel moves by the European Union (EU) to create a single market in financial services, the impact of monetary union has been to integrate money and credit markets across the member countries. The elimination of currency risk among the member countries means that there is a much higher degree of substitutability between domestic and foreign securities, which has contributed to a substantial reduction in home bias and increased financial trade within the euro area. Moreover, the greater depth and liquidity of a single area-wide financial markets has also boosted financial trade vis-à-vis non-member countries. (Indeed, the United Kingdom has been a primary beneficiary as a key center for euro-denominated financial trade, although it is not a member of the monetary union.)

For the period 1999-2006, the data indeed show a significant increase in intra-euro area holdings as a share of world cross-border holdings (from 13½ percent to 17¾ percent for

the sum of assets and liabilities) as well as of external euro area holdings (from 21½ percent to 24½ percent). Netting out intra-euro area holdings from world cross-border holdings, the share of external holdings accounted for by non-advanced economies would be broadly stable (rather than declining) over the period 1999-2006, with an increase in their share of cross-border assets and a decline in the share of cross-border liabilities.

In general, the typical emerging market economy or developing country has much smaller cross-border asset and liability positions (with a median of 70 to 80 percent of GDP) than an advanced economy (for which the median value is well over 200 percent of GDP). In particular, the financial sectors in these countries have not participated to the same degree in the wave of financial innovation that has swept the advanced economies. In addition, cross-border currency risk remains a primary concern for most countries in this group, which limits participation in many types of cross-border financial transactions.

That said, as emphasized by Philip R. Lane and Gian Maria Milesi-Ferretti (2007), it is important to acknowledge that the external balance sheets of these countries have shifted over the last decade. First, this group has strongly improved its net external position: in a reversal of historical patterns, the advanced group has been a net issuer of liabilities to the developing world. Indeed, the trend documented in Figure 1 primarily reflects a decline in external liabilities—particularly in the debt category—which in turn is linked to the de-leveraging process in several emerging markets following the Asian crisis. Second, equity instruments (especially FDI) now account for a much larger share of external liabilities, such that domestic production risks are now shared to a much greater degree with outside investors. Third, the gross scale of foreign asset holdings has substantially expanded, with the growth in external assets primarily taking the form of official reserves—the monetary authority is the main proximate foreign investor. Overall, advanced countries are typically 'long equity, short debt' with the opposite pattern holding for most other countries.

In summary, the considerable variation in cross-border positions means that the international financial transmission mechanism is quite complex, with a local shock in one economy having a differential impact on partner countries, according to the level and composition of bilateral investment positions and the nature of co-movements between home and partner financial returns. Moreover, heterogeneity in the bilateral transmission of shocks is reinforced by the asymmetries between international financial linkages and international trade linkages, with the degree of trade integration between advanced and developing countries relatively stronger than the degree of financial integration.

In view of the importance of international financial integration in understanding macroeconomic behavior, we next investigate more formally the sources of cross-country variation in the extent of financial globalization.

II. Cross-Country Variation in Financial Globalization

As a first pass, we focus on a few central factors affecting international financial integration that have been much covered in the theoretical literature: (a) trade openness; (b) domestic financial development; (c) economic development; (d) country size; (e) capital account restrictions; (f) EU integration; and (g) financial centers.[2]

Several strands in the research literature have argued that trade openness and financial openness should go hand in hand (see in particular Maurice Obstfeld and Kenneth Rogoff 2001 and Maurice Obstfeld 2007). From a risk sharing perspective, the gains to international portfolio diversification are increasing in the importance of tradables consumption in many models (although it is possible to build examples in which higher consumption of imports raises the optimal home bias in financial portfolios). Trade linkages may also plausibly

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[2] Our approach builds on previous work reported in Lane and Milesi-Ferretti (2003), which focused exclusively on advanced economies.

improve information flows and thereby increase the willingness to invest in foreign assets. Default risk is also ameliorated by tighter trade integration. Finally, trade transactions directly generate cross-border financial flows (trade credits, export insurance, payment facilitation).

A second driver of financial globalization is domestic financial development. The development of a domestic banking system and domestic financial markets facilitates asset trade among local residents and thereby potentially diminishes the role of external financial intermediaries in linking together domestic agents. However, domestic financial development may be spurred by foreign investment in the domestic financial system, and the creation of domestic financial products also facilitates foreign demand for domestic liabilities (Philippe Martin and Hélène Rey 2004), thus suggesting a positive correlation between financial development and financial globalization. A related emergent literature has focused on the difficulties faced by some non-advanced economies in the creation of financial assets. Moreover, the institutional capability accumulated by investing in domestic markets lowers the barrier to acquiring foreign assets, implying potentially strong complementarities between the growth of domestic financial positions and external financial positions.

The level of economic development can also be an important factor in explaining domestic residents' propensity to engage in cross-border asset trade. For example, in the presence of fixed costs or less-than-proportional learning costs of international asset trade we would expect to see higher international financial integration in wealthier economies. Also, if risk aversion is declining in the level of wealth and international investment is perceived as riskier, external exposure will be increasing in the level of development. The theoretical link between the size of an economy and its level of cross-border holdings is also clear—ceteris paribus, larger economies allow for more domestic portfolio diversification.

A history of capital account restrictions plausibly has a negative impact on the accumulated stocks of foreign assets and liabilities. Moreover, in the presence of binding

capital controls, progress in domestic financial development may not spill over into a greater degree of international financial integration. Finally, two additional related factors are worth considering. As discussed earlier, the deepening of financial integration in the EU and the disappearance of currency risk for intra-euro area asset trade were associated with a sharp rise in cross-border holdings. We therefore allow for the possibility that advanced economies in the EU and neighboring countries strongly integrated with those (Iceland, Norway, and Switzerland) may—ceteris paribus—have higher external assets and liabilities. Finally, some economies (such as Belgium, the Netherlands, Switzerland, and the United Kingdom) are important international financial centers and hence have larger external portfolios.

Accordingly, in order to characterize the cross-country variation in external positions at the end of 2006, we estimate the following reduced-form equation

(1)
$$F_i = \alpha + \beta * TRADE_i + \gamma * FINDEV_i + \rho * GDPPC_i + \delta * POP_i \\ + \sigma * CAPOPEN_i + \phi * EUR_i + \eta * FINCTR_i + \varepsilon_i$$

where F_i is the level of foreign assets (liabilities) as a share of GDP, $TRADE_i$ is the trade-GDP ratio, $FINDEV_i$ is a measure of domestic financial development (the sum of stock market capitalization and bank deposits as a share of GDP), $GDPPC$ is GDP per capita, POP is population size, $CAPOPEN_i$ is the de jure index of capital account openness developed by Menzie Chinn and Hiro Ito (2007), EUR is a dummy taking the value of 1 for the EU15 plus Iceland, Norway, and Switzerland (and zero otherwise), and $FINCTR$ is a dummy taking the value of 1 for international financial centers. All variables except $CAPOPEN$ and the two dummies are expressed in log terms. We exclude smaller economies with large financial centers (such as Hong Kong S.A.R., Ireland, Luxembourg, and Singapore) where external holdings are significant multiples of GDP.

The results for both external assets and liabilities are presented in Table 2 for the entire sample, as well as separately for advanced economies and emerging markets. The

coefficient signs on drivers of financial globalization conform to theoretical priors, and their impact is in general statistically and economically significant. In particular, international financial integration is strongly positively correlated with indicators of financial development (*FINDEV* as well as *FINCTR*), the "advanced Europe" dummy, GDP per capita (which may also proxy for other aspects of financial development not adequately captured by the *FINDEV* indicator), and, for the whole sample and emerging markets, negatively related to country size. In particular, the estimated EUR coefficient implies that, other things equal, cross-border asset holdings in advanced European countries are about 200 percent of GDP larger than elsewhere, and liabilities also significantly larger. Since we control for financial development, this suggests lower home bias in Europe.

It is also interesting to note that the link between trade and financial integration, while positive, is not as strong or as precisely estimated as the link with economic or financial development. This cross-sectional result is consistent with the time series trends shown in Figure 1, which show a significant difference in the evolution of the global trade and financial asset shares of advanced economies and emerging markets.

The one variable whose conditional correlation with financial integration is economically and statistically insignificant across the three samples is the measure of capital account openness. This variable, which has a very strong bivariate correlation with both external assets and liabilities, is also strongly correlated with GDP per capita, as well as with financial development, the EUR dummy, and the financial center dummy. However, once we control for these variables it does not have any residual explanatory power.

Table 2. The Drivers of International Financial Integration

	(1) All countries FA	(2) All countries FL	(3) Advanced economies FA	(4) Advanced economies FL	(5) Emerging markets FA	(6) Emerging markets FL
TRADE	0.20 [0.11]*	0.13 [0.08]	0.43 [0.17]**	0.11 [0.19]	0.18 [0.15]	0.18 [0.11]
FINDEV	0.33 [0.08]***	0.15 [0.06]**	0.67 [0.25]**	0.18 [0.26]	0.33 [0.10]***	0.14 [0.07]*
GDP per capita	0.23 [0.05]***	0.16 [0.04]***	0.63 [0.22]**	-0.07 [0.23]	0.18 [0.06]***	0.14 [0.05]***
Population	-0.07 [0.04]*	-0.13 [0.03]***	0.04 [0.06]	-0.08 [0.06]	-0.13 [0.05]**	-0.14 [0.04]***
CAPOPEN	-0.05 [0.04]	-0.04 [0.03]	0.02 [0.19]	-0.22 [0.21]	-0.07 [0.05]	-0.05 [0.04]
Europe	0.76 [0.15]***	0.53 [0.11]***	0.73 [0.17]***	0.54 [0.18]**		
Financial Center	0.62 [0.22]***	0.61 [0.17]***	0.20 [0.25]	0.63 [0.27]**		
Constant	0.93 [1.01]	4.10 [0.77]***	-7.79 [2.95]**	6.04 [3.19]*	2.29 [1.32]*	4.37 [0.98]***
Observations	67	67	21	21	46	46
R-squared	0.87	0.85	0.9	0.82	0.60	0.66

Note: OLS estimates. Standard errors in parentheses. ***, **, * denote significance at 1, 5 and 10 percent levels respectively. FA (FL) is the ratio of foreign assets (liabilities) to GDP; TRADE is ratio of exports plus imports to GDP (WDI database); FINDEV is ratio of sum of stock market capitalization and bank deposits to GDP (World Bank and other sources); CAPOPEN is Chinn-Ito index of de jure capital account openness; the Europe dummy takes value 1 for EU15 plus Norway, Switzerland, Iceland and 0 otherwise; FINCENTER dummy takes value 1 for UK, Belgium, Netherlands, Switzerland and 0 otherwise.

Turning to the difference between external assets and liabilities, two features are worth noticing. First, the correlation with GDP per capita is stronger for external assets than for external liabilities, consistent with the positive correlation between economic development and the net external position documented in Lane and Milesi-Ferretti, 2007. Second, the link with domestic financial development also appears stronger for assets than for liabilities, even though our indicator of domestic financial development includes external holdings of domestic instruments. While our simple regressions are simply descriptive statistics, this suggests a strong complementarity between domestic financial development and external holdings, rather than substitutability between the two.

III. Future Trends

Our analysis suggests that the future path for international financial integration depends on the deepening of domestic financial systems, overall economic development, as well as the pace of trade integration. In particular, it is plausible to expect some degree of convergence in the scale and characteristics of international financial integration between the advanced and developing country groups, conditional on the latter group making progress in domestic financial development. A more sophisticated domestic financial sector – comprising domestic retail and investment banks, institutional investors, and mutual funds - will give rise to greater private-sector capability in the acquisition of foreign assets and sustainable issuance of foreign liabilities. Moreover, the emergence of strong and well-regulated domestic banking sectors will enable governments to do away with capital account restrictions and also move towards more flexible exchange rate regimes. Through such developments, the role of reserves as the main asset category of the external balance sheet will decline and the asymmetries between the international investment profiles of advanced and developing countries will diminish. Indeed, the increasing role of sovereign wealth funds

in several emerging markets is likely associated at the country level—even if not from the point of view of ownership—with a more diversified pattern of foreign investment.

While the financial convergence process may play out as described above over the medium term, international financial integration carries risks. In particular, lower-income countries (especially those that exhibit limited trade openness) are more vulnerable to self-fulfilling pessimism among investors (as captured in the model of Martin and Rey 2006). Smaller, less liquid financial systems also find it harder to absorb shifts in global portfolio weights, as is well illustrated by the difficulties encountered by many emerging markets and developing countries in managing the surge in capital inflows in recent years. In this context, the substantial decline in home bias in advanced economies, together with their more advanced stage of financial development, has implied a spectacular increase in the amount of cross-border capital, and hence the potential for significant effects on individual countries of even modest shifts in cross-border portfolio allocation.

Indeed, one objective behind repressive financial policies in some countries has been precisely to provide some insulation from the effects of shifts in international capital flows. While the challenges posed by the boom in international capital flows can be daunting, it is worth questioning the validity of this strategy. In particular, the positive relation between financial development and economic growth is among the most results in the empirical growth literature. Accordingly, although financial repression may reduce the risk of crisis episodes, the net impact on long-term growth may be negative (Romain Ranciere, Aaron Tornell, and Frank Westermann 2008). Finally, the mechanisms by which trade openness matters for financial integration remain opaque. Since the correct interpretation of this correlation is important in the design of international macroeconomic models, the resolution of this puzzle is a high priority for future research.

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