



# Trends and Cycles in Financial Intermediation\*

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## 1. Introduction

I welcome the invitation to speak at this conference: the topic is well chosen, since there are many dimensions to the general theme of financial disintermediation; in turn, assessments about the future of the banking sector critically depend on these forces, together with an array of other factors such as: the dynamics of banking union in Europe; excess capacity in some banking systems; the viability of bank business models; and the management of non-performing exposures. In truth, these are not independent processes: financial disintermediation closely interacts with these other factors.

Both cyclical and structural forces are contributing to the current relative decline in the importance of banks in financial intermediation. At the cyclical level, the troubled state of many banks as a result of the global, European and national financial crises has induced larger firms to turn to bond markets to a greater extent for debt funding (Becker and Ivashina 2014). As a result, the share of bonds in total debt financing for non-financial corporates has climbed from about 8 percent in 2008 to 12 percent today. The limited lending capacity of the banking system in the wake of the crisis also prompted firms and households (albeit to a limited degree) to turn to alternative funding sources such as

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non-bank credit providers and new technologies such as peer-to-peer lending platforms.

In addition, the accommodative monetary strategies of the major central banks has facilitated large-scale bond issuance by corporates (both to fund investment and for financial engineering purposes) and sovereigns (especially those with major new fiscal obligations due to recession-induced deficits and/or financial sector restructuring programmes). The surge in bond issuance has featured an increasingly-prominent role for debtors in emerging and developing economies, which entered the crisis period with less-leveraged balance sheets and posted stronger post-crisis growth performance.

Of course, the crisis also led to a large-scale increase in official funding, whether through traditional channels such as the International Monetary Fund (IMF) or new channels such as the European Stability Mechanism (ESM). For instance, the stock of outstanding ESM bonds stood at €89 billion at the end of 2017. The size of central bank balance sheets also dramatically expanded through liquidity operations (such as the long-term refinancing operations (LTRO) and the targeted longer-term refinancing operations (TLTRO) programmes of the ECB and the emergency liquidity assistance (ELA) provided by some national central banks) and asset purchase programmes.

The banking sector itself has been an important driver of capital market activity as a result of the crisis. Some banks required equity recapitalisation, while the drive to establish 'bail-inable' buffers has seen an expansion in convertible bond issuance by banks. In parallel, the drive to reduce the stock of non-performing loans on bank balance sheets has seen an expansion in loan portfolio sales to non-bank intermediaries such as investment funds.

At a structural level, the combination of ageing populations, rising income levels and increasing reliance on private provision for retirement and

lifecycle insurance products has increased the appetite among households to shift from plain-vanilla bank deposits towards higher-risk, higher-yielding financial assets, which is a trend evident across advanced and, increasingly, emerging economies. Of course, this trend is reinforced by the low interest rate environment that has reduced the relative attractiveness of holding bank deposits as an investment asset. These positions are intermediated through insurance companies, pension funds and the investment funds sector. In turn, the investment funds category includes a wide range of different types in terms of portfolio strategies and organisational forms.

In relation to non-financial corporates in some advanced economies, high and persistent corporate savings rates map into increased participation in asset markets by corporate treasuries, especially in relation to short-term and medium-term securities. In addition, the global footprint of multinational firms from some emerging and developing economies facilitates international financial arbitrage by issuing bonds in low-yield, liquid markets in order to fund asset holdings in higher-yielding locations (Avdjiev et al 2014). On the liability side, the increasing scale of some firms, some degree of international convergence in corporate governance standards and improvements in public data availability has expanded the pool of corporates able to tap bond markets.<sup>1</sup>

The emergence of sovereign wealth funds and increasing stocks of foreign reserve assets also means that national governments are increasingly important actors in global asset markets. State-controlled investment intermediaries may be established for a variety of reasons: the smoothing of income streams from non-renewable natural resource endowments; the pooling of investment risk at a national level; pre-funding the public costs of an ageing population; and the provision of self-insurance against international funding shocks. Taken together, this has resulted in a significant role for national investment agencies in the global financial system.

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<sup>1</sup> Differences across countries in the size of bond markets are also rooted in the histories of individual financial systems (O'Sullivan 2016).

Finally, for completeness, it is also necessary to acknowledge the potential of technological innovations to enable new types of financial intermediation through digitisation. However, it is beyond the scope of this speech to evaluate the potential of fintech.

A more diversified financial system in which banks play a relatively smaller role has many positive features in terms of improved efficiency and risk sharing. The availability of alternative intermediaries means that firms and households are less exposed to banking-sector risk: in turn, the amplitude of a banking crisis is likely to be milder if there are circuit breakers that weaken doom-loop dynamics between a weak banking sector and a weak real economy.

Furthermore, risks in the banking sector can be mitigated if there is a pool of alternative bearers of credit risk and funding risk, especially in scenarios in which the banking sector must undergo an adjustment phase of reducing the size and risk profile of its balance sheet. This is currently evident in the sales by banks of portfolios of troubled loans to investment funds.

However, these shifts in financial intermediation do raise important analytical and policy issues, especially in relation to financial stability. In particular, there is an established playbook for addressing systemic risks in the banking sector both through ex-ante macroprudential policies and ex-post liquidity, resolution and restructuring policies. No such playbook exists for tackling financial stability risks in non-bank financial intermediation. Furthermore, the banking and non-banking sectors are closely intertwined, such that disruption in market-based financial intermediation could also trigger instability in banking systems.

In what follows, I examine this set of issues along two dimensions. In Section 2, I examine the intermediation of cross-border financial flows. In Section 3, I examine intermediation by the investment funds sector. Some final remarks are offered in Section 4.

## 2. Cross-Border Financial Flows

Since the global financial crisis, global financial flows declined from over 20 percent of global GDP to the more moderate levels previously seen in the early 2000s (McQuade and Schmitz 2017, Lane and Milesi-Ferretti 2018,). There has also been a geographical shift, with a sharper pull back by advanced economies and a steady increase in the international financial activities of emerging and developing economies.

Traditionally, banks have intermediated a large proportion of cross-border debt flows. In addition, foreign direct investment (FDI) in banking sectors has constituted an important source of international risk sharing, with multi-country banking groups an important source of equity capital for national banking systems and a provider of cross-border liquidity through intra-group transactions.

Since regulators and national statistical agencies know less about the balance sheets and transaction accounts of non-bank intermediaries, the analysis of the stability and risk distribution properties of cross-border financial flows is more complicated in an environment in which bank intermediation is relatively less important. In addition, there is a wide range of possibilities in terms of how the funds allocated through non-bank intermediaries might react under stressed scenarios. In particular, a financial stability analyst must weigh the likely responses of sovereign investors, the insurance corporation and pension fund (ICPF) category, the various subcomponents of the investment funds sector and the treasury operations of multinational firms to different crisis scenarios, in addition to tracing out the impact on banks.<sup>2</sup>

The degree of complexity is further elevated by the geographic configuration of non-bank intermediation, with some international financial centres acting as a provider of intermediation services to an array of investors and funders in source and destination countries. The group of

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<sup>2</sup> See, amongst others, Galstyan et al (2016), Galstyan and Velic (2018) and Timmer (2018).

international financial centres now accounts for about half of all external assets and liabilities (Lane and Milesi-Ferretti 2018). A by-product is that traditional analyses of international balance sheets need to be supplemented by a series of adjustments to take into account indirect linkages through financial centres (Avdjiev et al 2018). For instance, Chinese external financial flows can only be properly understood by joint analysis of the flows running directly to and from Mainland China as well as vis-à-vis the Hong Kong special administrative region (SAR).

These shifts in the composition of external balance sheets imply that international financial stability analysis needs to take into account the cross-border propagation of shocks in bond markets. For instance, a freeze in dollar funding markets would have global implications, given the large increase in dollar bond issuance by firms, banks and sovereigns in emerging and developing economies. By way of contrast, the pull back of some domestically-focused banks from international financial activity may provide a buffer in the event of an international financial shock to the extent that entities that are shut out of international funding markets can turn to the domestic financial system as an alternative source of funding. In this way, sufficient diversity in business models across banking groups can contribute to financial stability, in contrast to a scenario in which banks follow highly-correlated credit and funding strategies.<sup>3</sup>

In relation to emerging and developing countries, the capacity of the domestic financial system to act in a counter-cyclical manner also depends on the degree of stabilisation that can be provided by national authorities through sufficient access to foreign-currency resources, whether through self-insurance or access to international official funding facilities. This was vividly illustrated in the global financial crisis, with those emerging economies holding dollar assets benefiting from the valuation gains associated with the sharp dollar appreciation in 2008 (Milesi-Ferretti 2009, Gourinchas, Rey and Truempeler 2012, Benetrix, Shambaugh and Lane 2015).

The expansion in FDI positions means that the international financial activities of multinational firms constitute a potentially important international financial transmission mechanism. In particular, a shock in any funding market for a multinational firm may influence its production activities across all its locations through the impact on its consolidated financial balance sheet, even if this common exposure mechanism has to be counter-balanced against the potential gains from geographically-diversified treasury operations.

As a general comment, tracing out the cross-border impact of a financial shock requires information on the matrix of linkages between ultimate investors and ultimate investment destinations. This is made more complicated by international financial intermediation chains which make it difficult to identify ultimate exposure patterns. While there has been progress in sharing information on the exposures embedded in globally-significant banks, no such information sharing mechanism is available for non-bank intermediation chains. While reports such as the Financial Stability Board's (FSB) [Global Shadow Banking Monitoring Report](#) and the European Systemic Risk Board's (ESRB) [EU Shadow Banking Monitor](#) are extremely helpful in indicating the scale and characteristics of non-bank intermediation, the scope of such reports does not extend to uncovering the full matrix of end-to-end exposures. As indicated above, an additional layer of complexity is generated by the inter-connections between non-bank intermediation chains and banking systems, both through the direct participation of banks and indirect channels such as through asset pricing dynamics.

Accordingly, it is important that each country disclose as much as possible about the nature of cross-border intermediation that runs through its financial system. The sharing of information on the matrix of financial linkages would also be facilitated by more rapid and more universal adoption of common data standards such as protocols for legal entity identifiers (LEIs), unique transaction

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<sup>3</sup> See also Herzberg and McQuade (2018) on the interaction between bank business models and international bank flows.

identifiers (UTIs) and universal product identifiers (UPIs).

There is a special responsibility to provide information on international financial transactions for those countries that host international financial centres. In particular, international financial centres tend to have relatively larger non-bank sectors, mainly comprising of investment funds and/or captive financial institutions (FSB, 2018).

For instance, Ireland is an important host location for a range of international financial intermediation transactions that link foreign issuers and foreign investors in different locations. In Ireland, like many other similar hubs, the largest and fastest growing group are investment funds. Latest figures show that Irish domiciled investment funds have grown 11 per cent year on year to €3.4 trillion (Q2 2018). In general, investment funds are primarily financed through equity, and invest in a mix of equities and bonds. Ireland also hosts about 10 per cent of the world's money market funds. Currently valued at €491 billion (August 2018), these funds are an importance source of financing for banks and are part of the treasury operations of corporates. Ireland is also an important centre for a range of special purpose vehicles. At the Central Bank of Ireland, we are committed to analysing and publishing information on these intermediation activities, in order to contribute to the public good of a shared knowledge base in relation to the mechanics of the international financial system (Lane and Moloney 2018).

### 3. Financial Stability and Investment Funds

Investment funds play an important role in market-based financial intermediation. Such funds

pool the resources of individual institutional and retail investors, thereby facilitating lower-cost portfolio diversification. Still, to the extent that such funds hold illiquid assets and are perceived to offer liquid liabilities to end investors, a run risk exists that is similar to the classic run risk facing banking systems.<sup>4</sup> The amplification of shocks via investment funds also depends on the degree of leverage taken on by these funds, both directly and synthetically through derivative positions.<sup>5</sup> It also depends on the availability of market providers that are capable of providing market liquidity under stressed scenarios.<sup>6</sup>

The expansion in the investment fund sector both in absolute terms and as a percentage of global financial assets since the financial crisis is striking. Recent figures indicate the sector is worth US\$43 trillion, more than double its 2008 value of US\$18 trillion.

It is a global trend with a number of significant features. Particularly significant has been the growth of exchange-traded funds (ETFs), both as a destination for long-term investment funding and as an increasing focus for liquidity management planning. Closely linked to the growth of ETFs as a product, which has relatively low overheads, has been the growth of very large asset managers. We also see the rise of automated trading which has led to a small number of algorithmic traders originating large portions of overall trades in key securities. Putting these two trends together, we are seeing a significant concentration in parts of the sector in new types of liquidity provider.

We have also seen a move away from active management strategies to more rule-based investment strategies, but these rule-based investment strategies are less passive than in the past and their likely behaviour in stressed market conditions has become more difficult to predict.

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<sup>4</sup> For a recent overview, see Cominetta et al (2018).

<sup>5</sup> While beyond the scope of this speech, the robustness of market-intermediated financial flows also depends on the integrity of securities markets and the supporting infrastructural platforms, including the operation of CCPs. It follows that the quality of regulation and supervision of these markets and entities is crucial to the underpinning of financial stability.

<sup>6</sup> Recent academic contributions to this topic include Dick-Nielsen and Rossi (2018), Di Maggio et al (2018) and Goldstein and Hotchkiss (2018).

Greater concentration in key roles and less predictability of flows in periods of stress are overall themes.

At the same time, the key feature of the investment funds sector continues to be the 'open' nature of most funds. That means that these are capable of experiencing a run and the historical record of low propensity to run is not as reassuring as it might once have been, given the patterns of change both in the scale and structure of the sector. This is why regulators at global and European level have concentrated their attention on the quality of the data being received from the investment funds sector, the quality of liquidity management within the sector and, in particular, on the potential role of leverage.

While it is in the nature of investment funds that investors take equity risk and do not necessarily expect all their money back, leverage can add significantly to the risk being taken and, consequently to the fragility of the sector. Leverage, both direct and synthetic, needs to be monitored carefully both at a global and European level.

We all understand that rising leverage is not necessarily a sign of rising risk. Leverage data figures can include a significant amount of hedging activity, which may reduce risk while nominally raising the leverage level. But the fact that hedging can limit the effectiveness of leverage indicators as indicators does not make it ineffective to collect the data. It is the better course to collect leverage data and then to analyse it to understand both where we are in the leverage cycle and to understand the different factors influencing the overall scale of leverage. For this reason, I look forward to the forthcoming consultation on leverage measurement by IOSCO on foot of a recommendation from the FSB to collect such data. In addition, the ESRB continues to work on synthetic leverage.

If leverage can enhance the risks of investment funds being open-ended, as so many of them are, the fundamental risk facing investment funds remains the risk of runs by investors, whether seeking first mover advantage against other investors or because

they are unwinding investments to escape expected declines in market prices or simply because they need the cash for margin calls or other purposes. IOSCO and the FSB have rightly emphasised the importance of the quality of both liquidity risk management and contingency planning. High standards in these regards will lessen the potential impact of instability in the investment fund sector on the wider financial sector.

A crucial instrument available to us is encouraging higher standards in liquidity stress testing, so that sufficiently-severe stress scenarios are considered. I also particularly welcome the additional proposals by the ESRB to extend the collection of data from undertakings for collective investment in transferable securities (UCITS) and to pay particular attention to those of funds, which invest in the least liquid assets. We cannot make the assumption that UCITS do not need to be monitored and we certainly need to have close regard to those investment funds which are tempted to focus on less liquid assets to boost returns.

All that said, it remains the case that we do not currently have effective counter-cyclical tools available to us in relation to liquidity. We do have an important tool in Europe in relation to leverage, where we can intervene to cap leverage if it is becoming significantly risky. Once the ESRB recommendations have been implemented in Europe, I would hope that further work would be done to enhance the regulatory tool kit in this regard, using the data that will then be available.

Looking back, in the immediate aftermath of the crisis it seemed as if money market funds were one of the main risks in the funds sector, sitting as they do in such a close relationship to the banking sector and with the strongest risks of investor runs. As we have formulated our post-crisis approach, we have dealt in the EU and the US and elsewhere with the money market funds issue. But we have also come to see that the issue is somewhat wider. There is further work to be done within central banks, particularly as the way liquidity is provided to markets changes, to develop better models of the interaction of different elements

of the financial market to understand better the potential amplifying role of investment funds and the key signs of increasing and decreasing risk from this sector.

In the Central Bank of Ireland, the granularity of our data allowed the IMF to implement one of the first stress tests of investment funds in 2016. The results highlighted certain areas of robustness (for example the ten largest money market funds were able to withstand large negative redemption flows) and areas for further analysis (a small portion of bond funds were highlighted as being highly leveraged and emerging market and high yield funds were given special attention with respect to liquidity). We continue to analyse and monitor these vulnerabilities today.

Liquidity management is different in the non-bank sector to the bank sector. The majority of investors are investing in equity and there is no direct access for non-banks to central bank liquidity facilities. Funds generally depend on liquidity within their portfolios, repurchase agreements or short-term credit facilities to meet liquidity requirements. They also have access to liquidity management tools but we find these are rarely used (Daly and Moloney 2017). In terms of future directions, national competent authorities may consider imposing liquidity management tools, leverage limits, margins or haircuts to mitigate the systemic effects of these entities. Many agencies including the ESRB are looking at these options with a view to developing macro-prudential tools beyond the banking system and we welcome these initiatives.

Like the ESRB, the European Securities and Markets Authority (ESMA) and many of our international colleagues, the Central Bank of Ireland is developing liquidity stress testing at present. We have shown that a bank-type stress test – such as the High Quality Liquid Assets approach of the Bank for International Settlements (BIS) does not work well for all funds (Metadger and Moloney 2017). We will need to customise stress testing to fit the sector. We are particularly interested in reverse stress testing. As this analysis will illustrate the thresholds of vulnerability in this growing system. It is clear that

cross-jurisdictional interconnectedness is a defining characteristic of this type of intermediation and thus any policies to mitigate vulnerabilities will need to be operationalised at least in part, at an international level. We are active contributors to the international initiatives in this regard.

#### 4. Conclusion

In closing, the rise in non-bank financial intermediation only further reinforces the importance of both banking union and capital markets union for a robust European financial system. While there are important trend factors underpinning the expansion in non-bank intermediation, cyclical factors are also at work. Moreover, a sound banking system can play a stabilising role in the event of any future shock that disrupts market-based financial intermediation.

Financial integration – underpinned by regulatory and supervisory convergence and reinforced by the required European-level institutional framework – is the most effective strategy to obtain the benefits of a diversified financial system that is populated by robust intermediaries (both banks and non-banks), while safeguarding financial stability.

Furthermore, cross-system (EU27; UK; US; Japan; Switzerland; emerging and developing economies) intermediation by banks and non-banks is only set to expand further, in view of the economic and technological forces driving global financial trade. Financial integration at the EU level will also enable Europe to maximise its influence and take an appropriate co-leadership role in the governance of the global and regional financial systems.

Finally, my focus in this address has been on the financial stability dimensions of non-bank intermediation. In parallel, the international regulatory community needs to ensure that consumer protection regulatory frameworks are sufficiently broad so that consumers are protected regardless of the identities or locations of the firms providing financial services to households.

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