International Linkages: Financial Markets and Technology

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1. Abstract

Technology has facilitated both greater cross-border participation in financial markets and a growing prevalence of cross-jurisdictional financial market infrastructure providers. This paper investigates the potential impact of these trends on the location of various financial markets on the financing of Australian businesses. In both the foreign exchange and derivative markets the benefits of centralised markets would appear to clearly outweigh any costs. However, in the capital markets the outcome of this trade-off is less clear.

1. Introduction

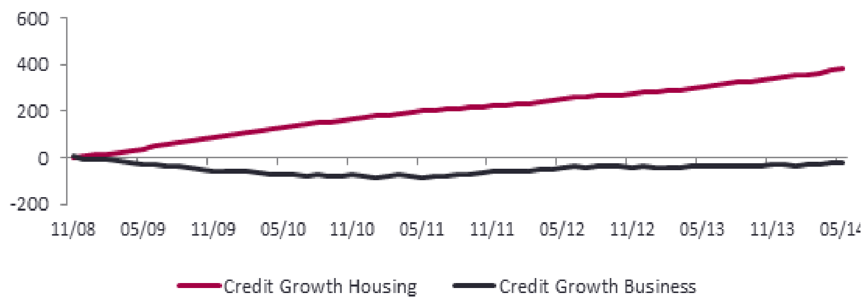
Technology has facilitated increased cross-border participation in financial markets. This has allowed investors to diversify their portfolio holdings and corporate issuers to access new pools of capital. In some cases this trend has lead to activity in some markets, for example the foreign exchange market and the debt capital market, to become increasingly concentrated in a small number of geographic locations.

Economies of scale and the creation of efficient global platforms for financial transactions have significantly reduced the cost of transacting in markets and led to more active markets with large pools of liquidity, all of these factors benefit participants in these global markets. However, this trend toward large global financial market providers driven by participation rather than location may have implications for real economies. The most discussed consequence of multi-jurisdictional financial market infrastructure providers is the potential loss of domestic regulatory control and the implications that this may have for systemic stability. While this is undoubtedly an important concern, the move away from locally based FMIs, particularly in primary issuance or “core capital markets” may have implications for the operation choices of domestic businesses and for the availability of capital, particularly for smaller corporates and during global economic shocks.

2. Australian businesses move toward market based funding

Post-GFC, market based funding has played an increasingly important role in the funding of Australian businesses. Over this period, bank credit growth has been driven by mortgage lending while the stock of business credit issued by banks has declined. (Figure 1)

Figure 1 Intermediated Credit Growth provided by Australian Financial Institutions: Post-GFC[1]

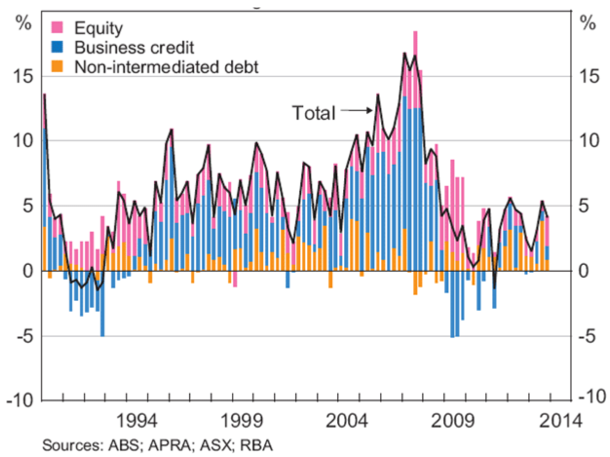


Source: Derived from RBA D2: Lending and credit aggregates

This reduction in intermediated lending to businesses may to some extent be explained by reduced demand for finance as a result of increased volatility and general pessimism in the economic outlook. Supply side factors including changes to capital requirements introduced through the Basel III capital reforms and a more general repricing of risk by banks will have also played a role.

Despite the reduction in bank business lending post-GFC, market based funding has returned to pre-GFC levels after a period of above average equity issuance as a result of business deleveraging in the twelve months following September 2008 (Figure 2).

Figure 2 Business external funding (net change as % of GDP)



Source AFMA, 2014

Increased importance of market based funding for Australian Businesses is a trend that is expected to continue. According to Maddock and Munckton (2013) the convergence of retail deposit and wholesale rates in combination with increased capital requirements for business lending will encourage banks to move assets off balance sheet either via securitisation or by assisting their clients access the debt capital markets directly. The vigour with which a number of Australian banks are supporting the development of a viable retail corporate bond market suggests that banks are already moving in this direction.

It is with the increasing importance of financial markets as a source of business funding in mind that we now turn to international trends in financial markets and FMIs.

[1] Includes securitisation

3. Technology trends and international integration of FMIs: Globally

Financial markets rely on financial market infrastructure to perform their role effectively. Financial market infrastructure determines the means and rules by which financial transactions are governed, conducted and reported, and how information is disseminated. For example, international rules on Central Clearing Counterparties, global information platforms such as Bloomberg, clearing systems such as ASX Clear or LCH Clearnet, and payment systems such as RITS or SWIFT, as well as markets for conducting transactions, including OTC and listed markets, are all major components of financial infrastructure. Financial market infrastructure can be defined as:

1. The technology available to financial market participants and intermediaries;
2. The regulation that governs financial market participants and intermediaries;
3. The processes used to collect and disseminate information pertinent to financial transactions;
4. The quality and number of financial market participants; and
5. The financial instruments available.

The quality of financial market infrastructure ultimately has a direct impact on the cost of capital for those issuing financial securities and the returns realized by investors. A 2001 study by Domowitz and Steil estimates that a 10 per cent increase in transaction costs leads to an approximate 1.5 per cent increase in the post-tax cost of equity capital.[2] Therefore, the quality of financial market infrastructure can be expected to have a strong bearing on the issuance decisions of businesses.

The provision of financial market infrastructure is capital intensive and as noted by John Kay:

"Markets for homogeneous commodities are natural monopolies"[3]

There are two reasons cited for markets being natural monopolies these are: 1. Market participants are attracted to liquidity, meaning new liquidity is captured by already liquid markets – network externalities. 2. The operation of financial market infrastructure is comprised of high fixed costs and low marginal costs – economies of scale.

Before technology made active cross-border provision of financial market infrastructure feasible financial market infrastructure providers were typically domestic monopolies however in recent times there is an increasing trend toward global consolidation amongst FMI providers (FMIs). This is most aptly portrayed by the merger of the New York Stock Exchange and Euronext in 2007 and the subsequent takeover of the merged entity by Intercontinental Exchange Inc in 2013. Cross-jurisdictional provision of financial market infrastructure has raised a number of well documented regulatory and stability concerns which are currently being worked through by international regulatory bodies like IOSCO.

Perhaps more importantly however is the role that technology has played in making foreign markets available to domestic corporations. This is portrayed most vividly in the foreign exchange market in which around 60 per cent of all activity occurs in two financial centres – London and New York.[4] Third party owned and operated electronic trading venues like Reuters Dealing and EBS have

[2] Domowitz and Steil (2001)

[3] Kay (2006)

[4] Bank for International Settlements (2013)

increased the ease by which domestic market participants can bypass an intermediary and access these markets directly. A similar trend could be expected to take place in OTC derivative markets with an international push towards standardisation of contracts and the emergence of Swap Execution Facilities, electronic venues which increase transparency in these markets. Listed derivate and commodities exchanges have also become venues for international participants engaging in contracts that are either unavailable or illiquid in domestic exchanges. The impact of technology and global participation in all of these these markets have played a role in increasing liquidity, allowing access for a greater diversity of participants and reducing costs. Technology has also increased the ease by which investors (both international and domestic) can access debt and equity markets. International integration in these markets has led to lower costs of capital for issuers[5], increased diversification and the potential for improved returns through a wider range of investment opportunities.

Offsetting the benefits of the international integration of core funding markets is the increased risk of global crises adversely affecting the domestic economy. The near failure of the Australian RMBS market due to the outflow of international capital post-GFC is evidence that Australia is not immune from this risk. Ease of access to liquid and low cost international markets may also influence not only the issuance decisions of domestic firms but, in addition to other factors like domestic laws and taxation, the locational decisions of Australian corporations. While the focus of regulators has typically been on the implications of the international FMIs for financial market stability[6] it may well be this last factor that has the greatest implications for the Australian economy in the long-term.

5. Internationalisation of Australian financial markets

The shift in locational dependence of Australian financial markets can be seen across a number of domestic markets.

Increased liquidity in foreign exchange markets during the business hours of London and New York coupled with the development of efficient trading platforms and the internal netting abilities of large global banks has resulted in less than 3 percent of global FX transactions occurring in Australia, despite the Australian dollar being the fifth most traded currency.

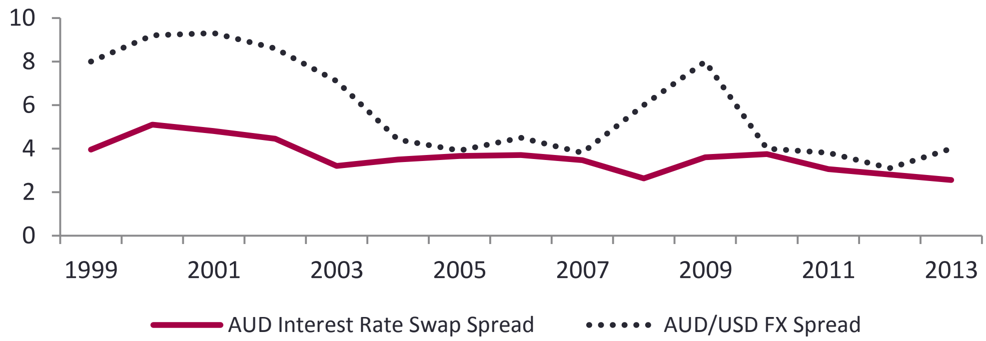
The electronic trading venue, Yieldbroker is creating a similar dynamic in the Australian OTC derivative market providing increased pre-trade pricing transparency for the most common OTC derivative contracts. Because OTC derivative market participants can engage in a contract with either local or global dealers, the pre-trade transparency created by platforms like Yieldbroker can be expected to provide increased competition amongst both global and domestic derivative dealers leading to reduced prices and business going to the most efficient dealers. Likewise, listed derivative exchanges compete directly with one another for the business of international customers with some exchanges offering similar contracts and competing through both price and secondary market activity. With this in mind, liquidity in the ASX derivative exchange is perhaps larger than would be expected with more than $40 trillion in notional turnover, primarily in AUD interest rate futures, in 2012-13.

[5] See for example, Quinn and Toyoda (2008) and Gupta and Yuan (2009)
[6] See for example, Council of Financial Regulators (2014)

Competition between domestic and international FMIs can also be seen in the clearing of OTC derivatives. To meet the increased demand for central clearing of OTC derivatives[7], the ASX has developed and now operates clearing services for a number of the highest volume OTC swaps. The most significant development in clearing across Australia's financial markets occurred on the 14th of July 2013, when LCH Clearnet was given the right to compete directly with ASX Clear in the clearing of OTC interest rate derivatives. The granting of these rights to LCH Clearnet is significant for two reasons. First, this is the first and currently only example of competition in clearing of Australian financial securities, and second, because LCH Clearnet operates in Australia as an international organisation, not as a local subsidiary. LCH Clearnet is the largest global clearing house for OTC interest rate swaps, clearing more than 50 per cent of the global interest rate swap market.

Globalisation and increased participation in these markets have contributed to reduced costs for Australians transacting in these markets. For example, competition between OTC central clearing counterparties has resulted in little discrepancy in price between the clearing services of ASX and LCH Clearnet and spreads in both the OTC derivative markets and FX markets have reduced significantly over the last 15 years. (Figure 3)

Figure 3 AUD/USD FX Spread: 1997-2013



Source: AFMA, 2014

The cost of increased globalisation in these markets has been limited to the potential loss of regulatory control over transactions in these instruments.[8] Whether this is indeed a cost will depend on the competence of international regulatory bodies like the G20 and IOSCO. In any case, the move toward an international regulatory framework for transactions in this market suggests that the benefits of lower transaction costs and greater liquidity for participants in these markets will greatly exceed the cost.

Australian corporates have also become increasingly dependent on international capital markets over the last decade. This is most obvious in the debt market where overseas issuance by non-financial corporates is almost four times larger than domestic issuance. The preference for overseas issuance relative to domestic issuance has increased substantially post-GFC. (Figure 5) Relatively attractive international yields have no doubt played a role in this shift as has the development of a deep and liquid FX swap market allowing international issuers to more easily hedge the associated FX risk. Perhaps more importantly however has been the clear lack of interest by Australian institutional investors in Australian corporate debt, with only 13 per cent of the stock of corporate

[7] Driven by both international trends and the possibility of mandatory central clearing of particular contracts being enforced by regulatory bodies.

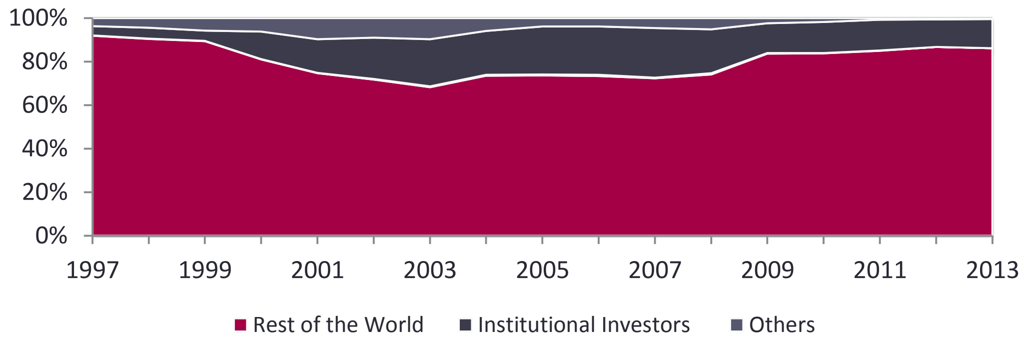
[8] See Council of Financial Regulators (2012)

debt issued into Australia held by institutional investors in 2013.[9] Retail participation in the Australian corporate debt market is almost non-existent as a result of limited access, greater savings being held by superannuation and ironically as a result of online trading increasing the ease by which stocks can be accessed relative to bonds. In this regard recent initiatives to level the playing field between access to bonds and stocks for retail investors, as well as the relative costs of issuance, should be commended.

Figure 4 Australian Non-financial Corporate Bond Issuance: 1997-2013 ($ million)

Source: ABS Cat 5232 Table 28

Figure 5 Holdings of Corporate Bonds issued in Australia (Percent of Total)



Source: ABS 5232, Table 28

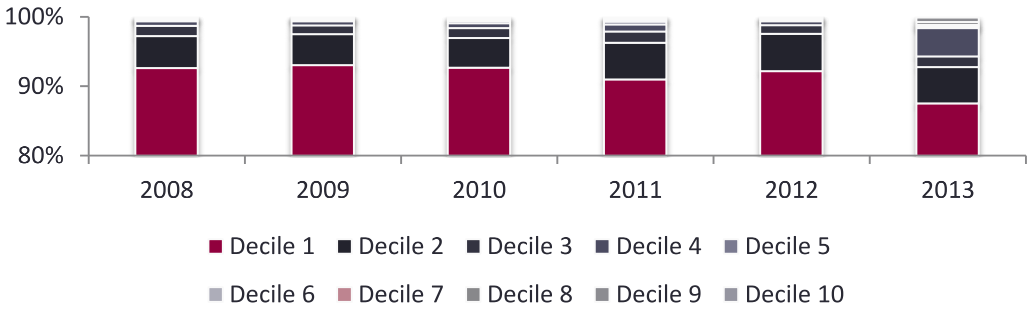
Data is less readily available for Australian firms choosing to utlise international markets for equity capital. The international migration of Australian firms seeking equity capital is currently most evident amongst technology start-ups who establish operations in areas with a strong venture capital ecosystem like Silicon Valley. Data on firms that would otherwise be Australian listing internationally and subsequently moving operations overseas is scarce. However, high profile stories such as the proposed listing of Atlassian on the US stock exchange, and the concentration of the Australian equity market in essentially two sectors suggests that it does happen.

For small, non-resource companies, the allure of listing on an international exchange is clear. Primary in this regard is the low activity in smaller stocks listed on the ASX, with almost 90 per cent of total stock market turnover occurring in stocks in the largest decile by market capitalisation. Furthermore, the desire of superannuation funds to reduce costs and invest in ASX 200 companies[10] has resulted in a dearth of investment analysts, funds and brokerage reports covering small cap

[9] The low holdings of corporate bonds by Australian institutional investors can possibly be explained by the potential for concentration risk as the current issuers of corporate bonds also represent a substantial proportion of total equity market capitalisation.
[10] Association of Superannuation Funds Australia (2014)

Australian stocks outside of the resources sector. Consolidation of large international exchanges bringing together even larger pools of liquidity and a more diverse range of participants is likely to increase the attractiveness of listing on international exchanges.

Figure 6 Turnover to market capitalization on ASX by decile 2008 to 2013



Source: CRC Capital Markets MQ Database 2014

6. The cost of relying on international financial market infrastructure

It is clear from the above discussion that Australian companies are increasingly relying on FMIs located outside of Australian borders. There is a rising trend for Australian corporates to issue into international debt markets at low cost and under better terms than can be accessed in Australian markets. Similar trends may be appearing in the domestic equity market, particularly for firms in industries outside of mining and financial services.

While internationally located equity and debt markets can reduce the cost of capital for Australian firms, there are a number of key differences between the FX and derivative markets and those that facilitate the issuance of and secondary market trading of capital securities, these include:

1. An issuer typically decides on which secondary markets an instrument can subsequently be traded based on its listing decision.
2. The choice to raise capital through a given market may influence an organisation's subsequent locational decisions in regards to headquarters and operations, benefitting the real economy of the jurisdiction with the desirable capital market.
3. For domestic companies that lack access to international markets, the availability of domestic financial market infrastructure may provide the only avenue to raise non-intermediated capital and therefore the only source of competition for these lenders.
4. These markets provide the capital that supports the financing of real businesses. International capital flows can be fickle and repatriation of funds is not uncommon in times of stress, having consequences for real businesses and industries.

These differences suggest that the issue of financial market infrastructure location has wider implications for the Australian economy with regard to capital markets compared to markets for FX and derivatives. These concerns go beyond the well documented potential loss of regulatory control to include issues such as the inability for Australian firms to raise capital as a result of global shocks and the potential for Australian firms that would otherwise operate in Australia moving overseas to be closer to capital providers – an issue that can already be seen in Australian technology start-ups moving operations to established 'start-up ecosystems'.

While the number of small firms listed on the ASX is commendable, the concentration in the resource sector and the lack of liquidity in these stocks raises questions around the ability of growing Australian firms outside of these industries to expand operations in Australia. Secondary market liquidity is key to the attractiveness of issuing into a market. In this regard, the lack of interest from superannuation funds, by far the largest group of domestic investors, in both Australian corporate debt and stocks outside of the ASX 200 is concerning. Furthermore, the participation of superannuation funds, in small cap equities can be expected to be further reduced as a result of the cost cutting initiatives to comply with the introduction of the MySuper reforms.

One suspects that with technology increasingly enhancing the ease by which international investors and issuers can access international markets coupled with the ongoing consolidation of international markets, the ability of Australian capital markets to compete will becoming increasingly difficult. With this in mind, it would appear prudent that the issues raised in this paper receive further consideration both in the academic sphere and by policy makers.

Reference List

Association of Superannuation Funds of Australia (2014). 'Submission to the Financial System Inquiry' http://fsi.gov.au/files/2014/04/ASFA.pdf

Bank for International Settlements (2013). 'Triennial Central Bank Survey of foreign exchange and derivatives market activity in 2013' www.bis.org/publ/rpfx13.htm

Council of Financial Regulators (2012). 'Competition in Clearing Australian Cash Equities: Conclusions', a report by the Council of Financial Regulators, December 2012

Council of Financial Regulators (2014). 'Application of the Regulatory Framework for Cross-Border Central Clearing Counterparties', a report by the Council of Financial Regulators, March 2014

Domowitz, I. & Steil, B (2001). 'Automation, Trading Costs, and the Cost of Equity', Chapter 7 of Institutional investors, MIT Press, London

Gupta, N. & Yuan, K (2009). 'On the growth effect of stock market liberalizations', Review of Financial Studies, 22(11), 4715–4752.

Kay, J (2006). 'A giant's strength is valuable - if not used like a giant', Financial Times, 26 November 2006

Quinn, D., & Toyoda, A. M. (2008). 'Does capital account liberalization lead to economic growth?', An empirical investigation. Review of Financial Studies, 21(3), 1403–1449.