# INNOVATION AND REFORM IN AUSTRALIA'S *financial market infrastructure*

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*The global financial market infrastructure is in an unprecedented state of transition. Spurred by significant developments in technology and regulatory frameworks, market infrastructure across modern economies is becoming increasingly integrated, competitive, global and complex. The rapidly changing dynamics in global financial markets are being acutely felt in the Australian marketplace. To deliver most effectively for those they are designed to serve, markets need to reliably and effectively provide the infrastructure for companies to raise capital and for investors to invest and allocate risk. Using the example of recent developments in the over-the-counter (OTC) derivatives market, this paper highlights the challenges and opportunities in ensuring Australian financial markets continue to deliver these enduring benefits. An earlier version of this paper was presented at the 20th Melbourne Money and Finance Conference.*

Markets play a central role in the growth and prosperity of any economy. To perform this role, markets need to reliably and effectively provide the infrastructure for companies to raise capital and for investors to invest and allocate risk. While these traditional purposes of markets are well accepted, markets are in a constant state of evolution. They need to adapt and embrace political, sociological, ideological and technological developments to ensure they continue to deliver enduring prosperity for the economies they serve.

Spurred by developments in technology and regulation, market infrastructure around the world is in a period of rapid and unprecedented transition. Arguably, it has become more integrated, competitive, global and complex than at any other time in history.

Clearly, each of these dynamics provides the potential for exceptional benefits for the traditional and most important users of markets — those looking to raise capital to support their business enterprises and those looking to invest and manage risk. Greater integration and global access provides increased investment and capital raising opportunities. Greater competition has the potential to drive down costs and drive up service standards, and greater complexity provides opportunities to exploit niche markets and drive innovative ideas.

It is also important to recognise, however, that while innovation traditionally delivers benefits, there can sometimes be risks attached. The commercial realities of innovation mean that it is typically driven by a subset of market users and providers who stand to receive a direct financial benefit from that change or initiative, whereas the externalities of that change are of less interest to the proponent.

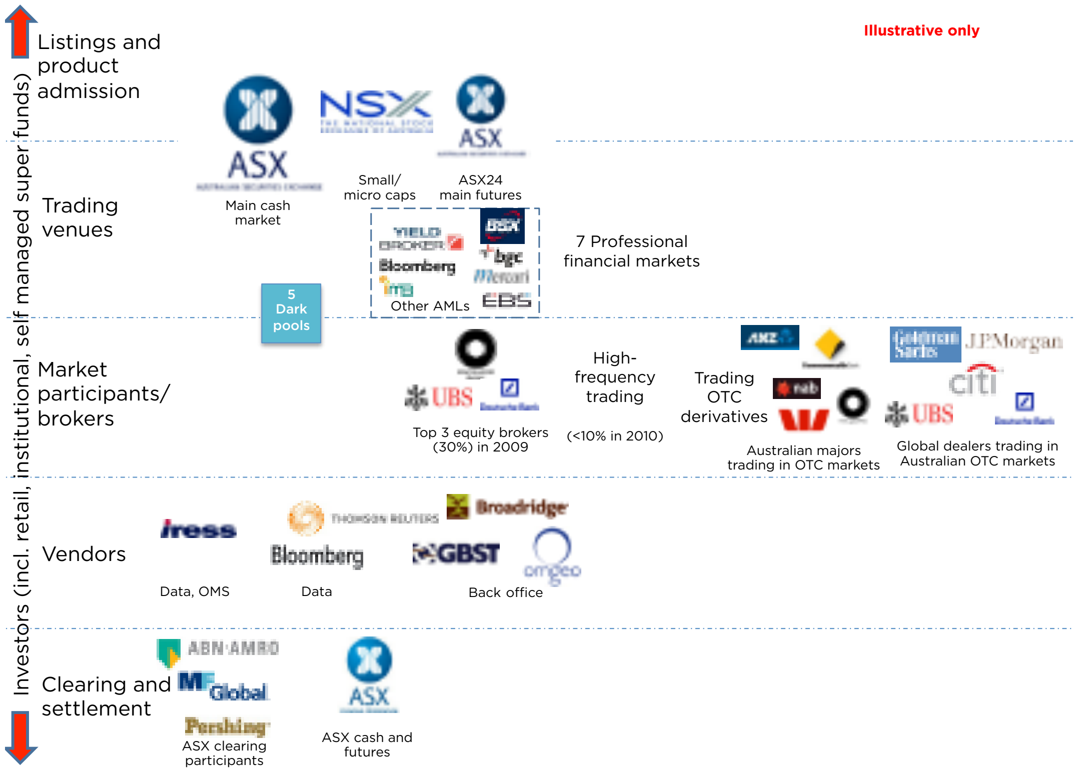
Frequently the interests of those proposing the changes and the interests of the wider market are tightly aligned. That is, innovation benefits all market users. However, history is also marked by changes that have not delivered this wider benefit and where they have in fact had a detrimental impact on the broader market by hindering capital raising or otherwise shaking the confidence of investors and their willingness to invest.

Where those changes create path dependencies, history has also shown that negative externalities can be difficult and sometimes impossible to unwind. For these reasons, an assessment of any change or innovation needs to be undertaken with a focus on ensuring that the direct benefits and collateral consequences of those initiatives, continue to foster an environment that also supports fair, orderly and transparent markets more broadly for the issuers, investors and consumers they serve.

The changes and issues affecting financial markets around the world are also being acutely felt in the Australian marketplace. Given the ongoing shift in Australia towards greater reliance on market-based financing, these changes have the potential to profoundly shape the future prosperity of businesses and investors in this country. Like elsewhere, competition and innovation in the Australian marketplace is intensifying at every level of our market infrastructure — from capital raising and secondary trading through to post-trade infrastructure, and across and between the exchange-traded and over-the-counter (OTC) markets. There has been enormous change across the entire spectrum and there is more change on the horizon.

The following diagrams highlight the wave of innovation that has been unleashed on Australia's financial market infrastructure in the past few years. Figure 1 illustrates the landscape in 2010.

**FIGURE 1: Market infrastructure 2010**

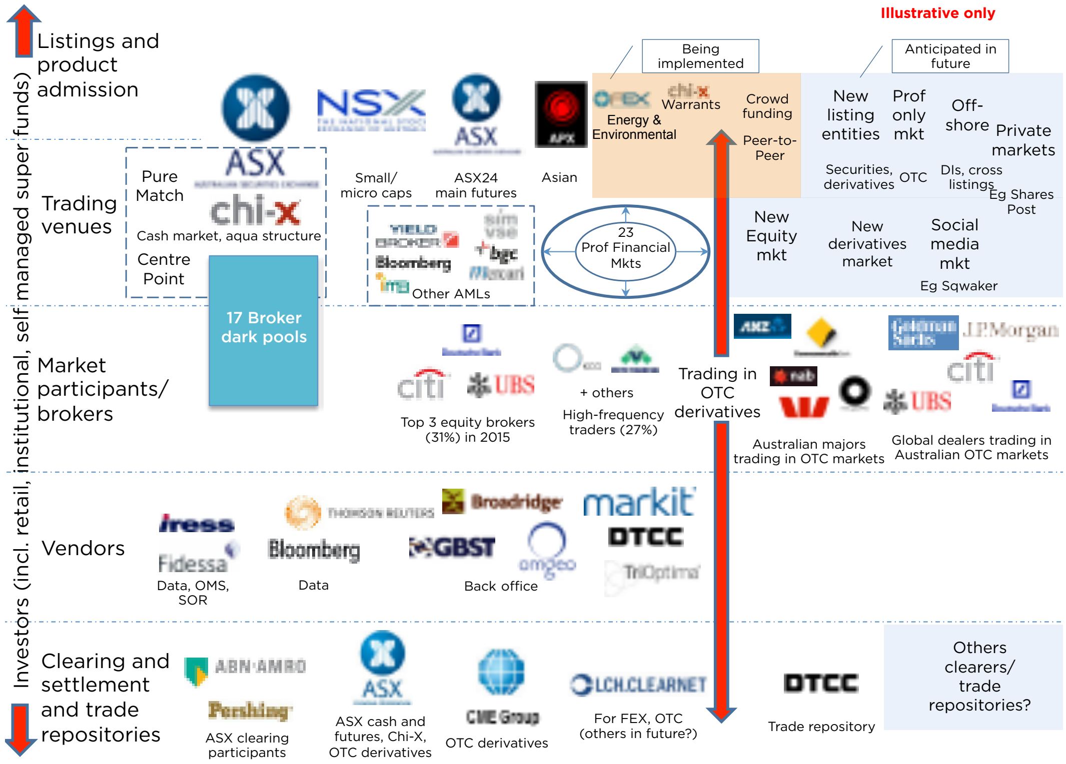



*Source and author: ASIC.*

At that time, infrastructure for public capital raising was largely confined to the Australian Securities Exchange (ASX), with brokers trading ASX-listed securities almost exclusively on ASX's secondary trading platform and otherwise being internalised in a small number of broker-operated crossing systems ('dark pools'). Domestic futures trading took place on ASX, and clearing and settlement was provided by the ASX group's post-trade infrastructure. Unlike the infrastructure for the exchange-traded market, market infrastructure in Australia for the OTC market was largely non-existent.

Perhaps most interestingly, the illustrative depiction of Australia's financial market infrastructure in 2010 in Figure 1 broadly reflects the rather static state of this market at most points in the prior decade. Figure 2 illustrates the extraordinary change in the past few years.

**FIGURE 2: Market infrastructure — current and into the future**




*Source and author: ASIC.*

New listings markets have launched, with a view to competing directly with ASX and developing niche target markets among small-to-medium enterprises and pan-Asian issuers. Other listing and quotation markets are likely to develop, and other forms of capital raising such as crowdfunding are gaining traction overseas and, more recently, in Australia as well. While ASX is still clearly the dominant Australian listings market, the trading of those ASX-listed securities now takes place on an increasing range of exchange and non-exchange platforms, including Chi-X Australia, broker dark pools and ASX's own dark pool (known as Centrepoint).

The domestic infrastructure for futures trading is still predominantly provided by ASX, but a new domestic competitor is entering the fold. At the same time it's worth remembering that the world's largest futures exchanges such as the Chicago Mercantile Exchange and Germany's Eurex hold licences to operate in Australia and have the scale and efficiency to compete effectively in any market. Given the revenues generated by futures trading for ASX (around double the revenue for equities trading) it is reasonable to anticipate that competition for that revenue stream will only increase.

At the same time, the distinction between the futures market and the OTC derivatives market is starting to blur. The 'futurisation' of the OTC market and the prospect of standardised OTC contracts being increasingly traded on liquid 'non-traditional' trading platforms are unfolding tensions and dynamics. More broadly, regulatory decisions and commercial incentives are increasingly drawing the OTC market onto financial market infrastructure historically associated with traditional 'equities exchange' type activity. In the clearing of OTC products for instance, ASX launched its OTC clearing service in 2013, where it competes directly with global monoliths such as LCH and, more recently, the Chicago Mercantile Exchange. Other global competitors also continue to eye off a stronger foothold in the Asian region as they look to deploy their international scale to compete in this marketplace.

The significant capital investment required to successfully operate financial market infrastructure means that further competition is more likely to come from an offshore base, where the scale of those foreign markets can be leveraged to compete with our home-grown operators. This offers the promise for Australia to import efficiencies and practices from the global marketplace more quickly than ever before. The benefits of this to Australian companies looking to access cheaper capital and investors looking for new ways to invest and manage risk are clear. The associated risks of having critical market infrastructure primarily regulated offshore are arguably less so.

## A case study: Reforms to OTC derivatives markets

Last year, we published a paper[1] which used the changes in the trading of ASX-listed equities as a case study for the changes taking place in the Australian market. The magnitude of the changes in the OTC derivatives markets is easily comparable to the changes that have occurred in the trading of ASX-listed equities and possibly even more significant given the global enormity of this market. The OTC derivatives market has faced dramatic disruption recently, driven by regulatory interventions and the increased use of global infrastructure. This is having a major impact on Australian users of OTC derivatives markets, particularly the major banks, asset managers, and corporate end users. The changes happening in OTC derivative markets are viewed by many as 'once in a generation', and parallel the profound structural change seen in markets for other asset classes, many years ago. As US Commodity Futures Trading Commission Chairman Tim Massad recently commented:

> I see many parallels to the securities reforms launched in the 30s and 40s, and I believe we will look back on our current reform effort similarly: that is, today as then, we are putting in place a sensible framework built on the principles of transparency and market integrity.

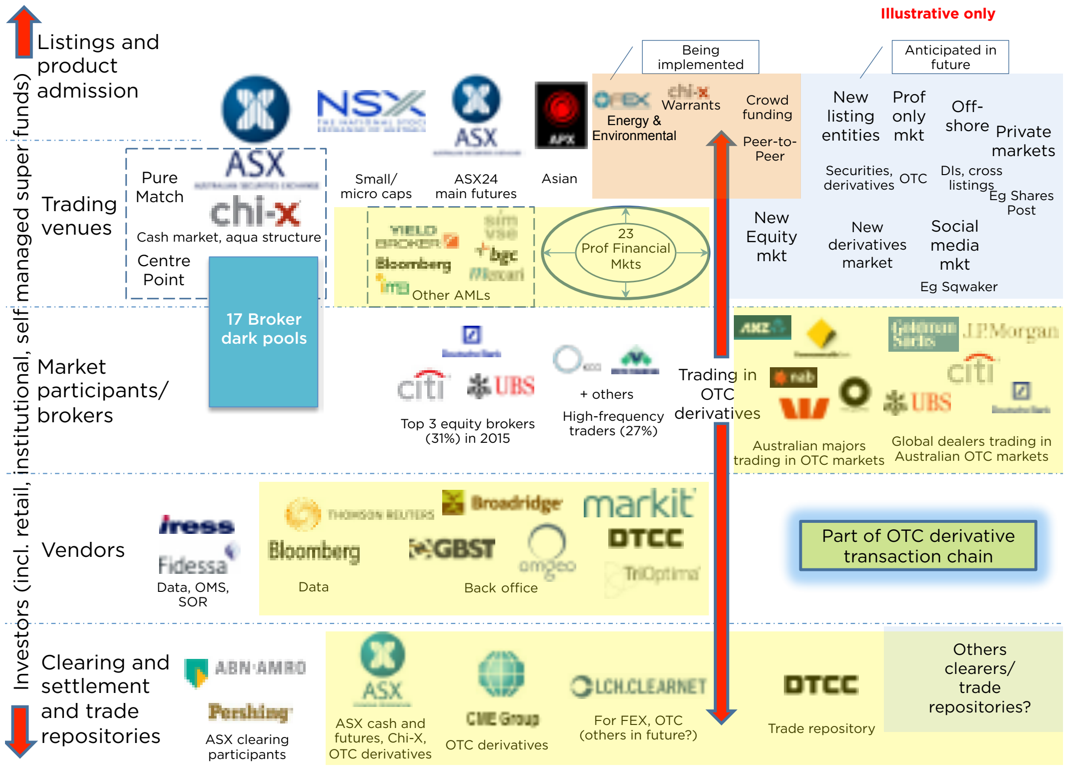
Reforms to OTC derivatives markets have led to the creation, or increased importance, of OTC derivatives market infrastructure, including:

> new players — with trade repositories being set up to retain and distribute OTC derivatives data

> increased use and regulation of existing infrastructure — regulation resulting in increased use of CCPs and electronic trading platforms, which will increase the need for careful regulatory oversight of this infrastructure

> opportunities for new players and services — as OTC derivative markets become more electronic and centralised, there will be demand for providers and services who can make trading and clearing more efficient. This will include electronic confirmation services, portfolio compression to reduce counterparty risk, and communications systems to allow margin to be posted between counterparties and optimised to ensure collateral is most efficiently used.

**FIGURE 3: Market infrastructure — OTC derivative markets**



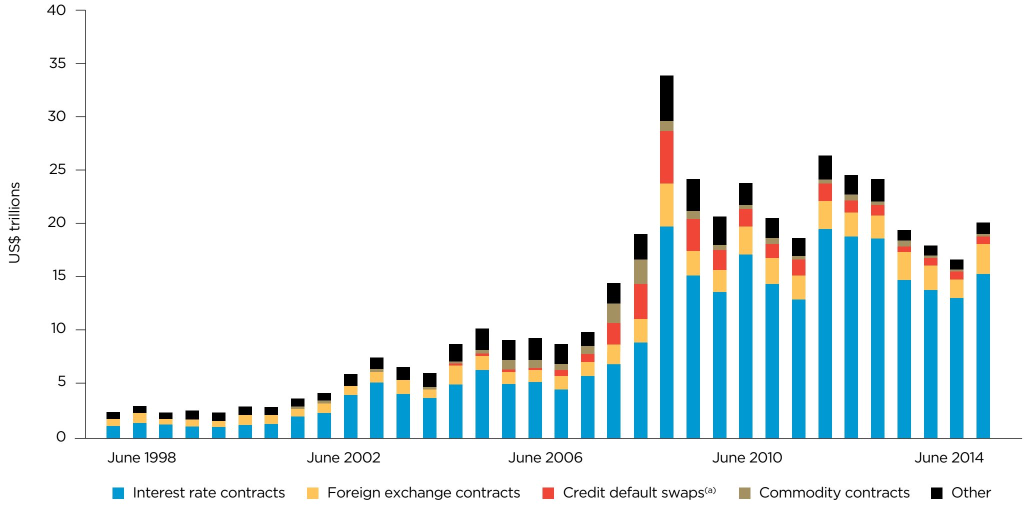

*Source and author: ASIC.*

Vitally, none of the reforms we will discuss will take place in isolation in Australia. Almost all OTC derivatives market infrastructure will either be based offshore, or will be based in Australia but need to operate and compete offshore. Therefore any reforms in Australia must be implemented with an eye on reform globally, and ensuring Australian OTC derivative market participants and infrastructure can compete globally while being effectively regulated locally. Deferring to equivalent foreign regulation is a key tool for regulators to avoid duplicate regulation while at the same time minimising risk to the Australian marketplace.

## OTC derivatives and the GFC

By way of background, OTC derivatives markets grew substantially in the lead-up to the global financial crisis (GFC). This was the result of various factors, including substantial growth of global investment banking franchises, as well as increasing numbers of facilities and infrastructure being available to facilitate OTC derivatives trading. While the market value of OTC derivatives has fallen from its 2008 peak, it is still 10 times higher than it was just 15 years ago (see Figure 4 to see the substantial growth in OTC fixed income, credit and commodity derivative markets). To provide some context for this, the value traded in the Australian OTC derivatives market in 2013–14 was 65 times the value traded in the Australian equities market.

**FIGURE 4: Gross market value of OTC FICC derivative contracts**




(a) CDS data start in December 2004.

*Source: UK Fair and Effective Markets Review, 10 June 2015.*

Now almost seven years after the onset of the GFC and the failures of Lehman Brothers and AIG, the central role that OTC derivatives played in exacerbating the crisis is sometimes forgotten. Some OTC derivative markets froze, counterparties cut each other off, and a global recession began.

In September 2009, the G20 leaders took steps designed to ensure OTC derivative markets were better regulated, and could never again contribute to a GFC. They committed to a range of reforms to increase the transparency of OTC derivative markets, reduce systemic risk, and improve market integrity. This reflected a desire to, in some ways, transplant a number of useful features of exchange-traded markets and bring them into the OTC world — recognising that exchange-traded markets fared comparatively well during the financial crisis.

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Some of the characteristics of exchange-traded markets that would be of value to OTC markets include increased levels of real-time trade transparency and transparency to regulators, the use of central clearing as standard, and high levels of platform trading to assist in price formation and reduce the power of intermediating brokers. Of course, this all needs to be balanced against the generally much lower level of liquidity in OTC derivatives markets compared with, for example, the trading of listed equities.

With these drivers in mind, the G20 leaders consequently committed to implementing initiatives in their home markets that would result in:

> all OTC derivative transactions being reported to centralised databases known as trade repositories, fully accessible to regulators and to the public in aggregated form

> standardised OTC derivative transactions being centrally cleared through CCPs

> standardised OTC derivative transactions being executed on electronic trading platforms, where appropriate

> minimum amounts of margin being exchanged between counterparties when derivative transactions are not cleared through a CCP.

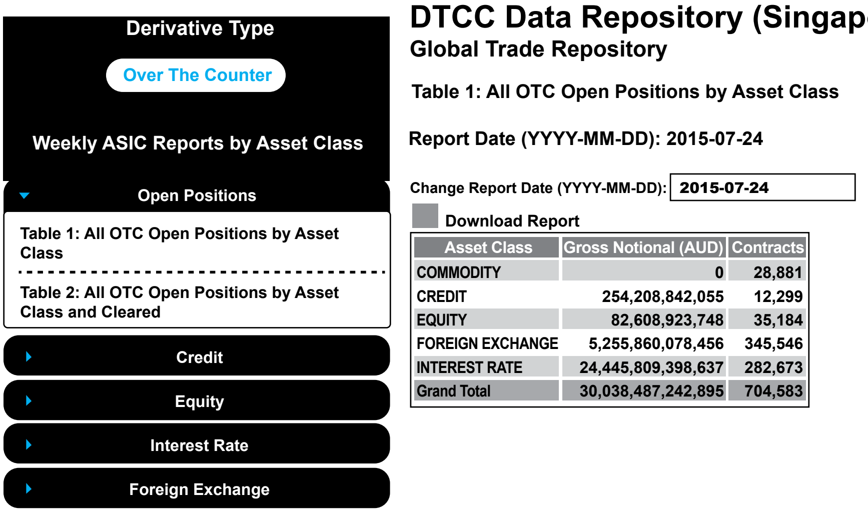
Regulators around the world have been working to implement these reforms over the past six years. The status of implementation of each of these reforms has varied but the aggregated impact of the reforms has been substantial.

### What's been done so far?

The most substantially implemented of the reforms is the requirement to report OTC derivative trades to trade repositories. This has now been implemented across a majority of the G20. Regulators now have a greater insight into the trading activity in OTC derivative markets, and are able to better investigate market abuse. In implementing these reforms within Australia, ASIC has been working with the other agencies in the Council of Financial Regulators. In doing so, ASIC has been keen to ensure our implementation of the reforms is as consistent as possible with implementation globally. This is critical given that the Australian market constitutes around only 2 per cent of the global OTC derivatives market. To this end, ASIC has licensed a Singaporean trade repository as the first, and currently only, Australian derivative trade repository licensee. This has allowed reporting entities to use globally consistent infrastructure, through ASIC substantially deferring to the existing supervision of this trade repository by the Monetary Authority of Singapore. The G20 leaders have recently pushed for deference to be increasingly used, and a number of international groups are working on how this could be achieved.

Recognising the desire of the G20 to bring surveillance of OTC derivative markets closer to what is currently in place in exchange-traded markets, ASIC has also recently upgraded its market surveillance system to make use of OTC derivatives data alongside our existing feed of data from exchanges. This will allow us, for the first time, to interrogate data from both exchanges and OTC derivatives markets using one system. Aggregated data is also now being published by the Australian licensed trade repository, and this information is shown in Figure 5.

**FIGURE 5**




| Asset Class | Gross Notional (AUD) | Contracts |
|---|---|---|
| COMMODITY | 0 | 28,881 |
| CREDIT | 254,208,842,055 | 12,299 |
| EQUITY | 82,608,923,748 | 35,184 |
| FOREIGN EXCHANGE | 5,255,860,078,456 | 345,546 |
| INTEREST RATE | 24,445,809,398,637 | 282,673 |
| Grand Total | 30,038,487,242,895 | 704,583 |

*Source: Based on DTCC website.*

There has also been substantial progress in implementing a requirement to centrally clear trades through CCPs. ASIC and the Australian Government have recently consulted on regulations and rules that would implement a clearing obligation in certain OTC interest rate derivatives, and the clearing obligation is expected to come into effect in early 2016. This follows a similar requirement that has been implemented in the US and Japan, and is likely to come into effect in the coming years in the EU and a number of other Asian jurisdictions.

As a result of regulatory actions and a desire to reduce counterparty risk post-GFC, the volume of trades being cleared through CCPs is rapidly growing. To facilitate this, in the past two years, two large global CCPs have been licensed to operate in Australia, LCH.Clearnet and CME. In addition, ASX was given regulatory approvals to launch an OTC interest rate derivatives clearing facility, and this commenced operations in late 2013. While the growing use of CCPs for standardised OTC derivatives transactions is widely considered to be reducing systemic risks, the Financial Stability Board (FSB) has made it a priority to ensure that CCPs themselves are not too big to fail. To this end, the FSB and international standards-setting bodies are now implementing a coordinated work plan to promote CCP resilience, recovery planning and resolvability, including by:

- evaluating loss absorption capacity, liquidity and stress testing
- conducting a stock-take of CCP recovery mechanisms
- reviewing existing CCP resolution regimes and resolution planning arrangements
- considering whether there is a need for more granular standards
- analysing the interconnections between CCPs and the banks that are their clearing members, and potential channels for transmission of risk.

### What's next for OTC derivatives reforms?

A great deal of work will be needed in the next few years to implement requirements for counterparties to exchange margin for non-centrally cleared trades. This comes on the back of internationally agreed principles agreed by IOSCO (International Organization of Securities Commissions) and the Basel Committee in September 2013. We expect these requirements to bring in the need for margining across a range of firms that previously had limited or no need to margin, in particular corporates, superannuation funds and asset managers. Law reform is likely in the next year to remove some legal impediments to margining, and APRA is likely to consult on implementing these requirements for its regulated population in 2016.

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At this stage, mandatory platform trading requirements have been implemented only in the US. Other jurisdictions, including Australia, are reviewing the liquidity of OTC markets, to determine if a trading mandate would be appropriate. We are expecting to make particular use of trade repository data to do this. The Australian regulators expect to invite feedback in late 2015 on the criteria that ought to be employed in determining if a product should be subject to this mandate.

Despite the lack of any formal platform trading requirements, there has been a substantial increase in the number of trading platforms operating in Australia that support products traditionally traded in the bi-lateral OTC derivatives market. The number of OTC trading platforms in Australia has quadrupled since the end of 2008 from six to 25, with almost all of this growth coming from platforms typically established outside Australia and primarily regulated by regulators in those home jurisdictions.

## Conclusion

Regulators and industry need to embrace competition and innovation if the Australian financial market is to remain relevant and attractive in a global context. This is a key finding of the Johnson Report on building on our strengths to establish Australia as a financial centre in the region.[2] In fulfilling this goal, it is equally important to ensure that the Australian financial market remains fair and efficient, and that it continues to operate with a high degree of integrity.

While these goals remain constant, Australia's financial market infrastructure is in an unprecedented period of change. Arguably, it is subject to greater competitive pressures than at any other period in history and, like financial market infrastructure all around the world, it has become more globally integrated and complex than ever before. For the Australian financial industry and its regulators, the goal must always be to ensure our markets continue to support the abilities of Australian businesses to raise capital and the potential for Australian investors to invest and allocate risk. Developing a roadmap to success has rarely been more challenging or exciting.

## Notes

1. Harvey, Oliver and Aldridge, Calissa 2014, 'Evolution of Australian financial market infrastructure', *JASSA*, no. 3, pp. 27–34.
2. *Australia as a Financial Centre — Building on our Strengths*, Report of the Australian Financial Centre Forum, November 2009.