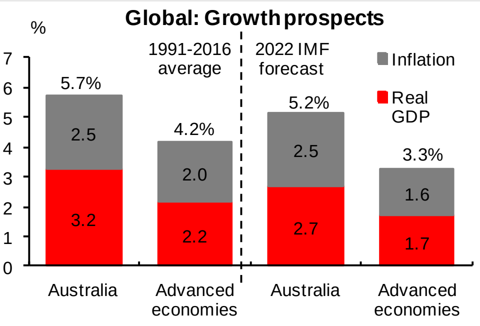
Australia in the new world order

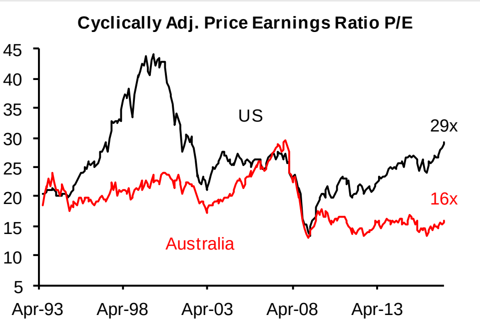
Source: Macquarie Research

AUSTRALIA

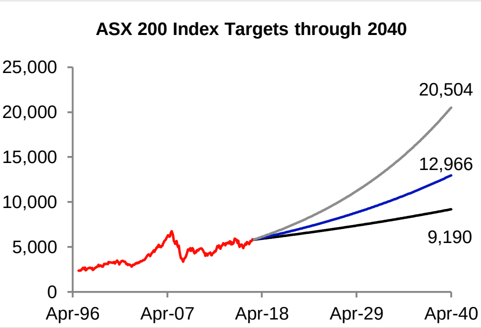
A developed world "growth" haven…



…which is not expensive on a CAPE…



…ASX 20,000 by 2040



Source: ABS, IMF, Factset, Macquarie Research, April 2017

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1 May 2017

Australian Macro Strategy

Australia in the New World Order

- **We see a global economic and political paradigm shift underway.** The rise of populism is a direct reflection of disintegrating labour markets and rising income and wealth inequalities. We expect nationalism will increasingly take precedence over globalism in driving economic and political agendas with Australia well positioned as the East gains further economic prominence.
- **Over the past 25 years, Australia's real GDP growth has outstripped the average for the advanced economies by 0.7% p.a.** According to the IMF, this growth premium will rise rather than fall over the coming five years. Australia is not immune to exogenous shocks and its reliance on China makes it highly vulnerable to country-specific risk. An overleveraged consumer and the potential for a prolonged period of deleveraging may cap the upside for growth. However, there are strong organic attractions that should provide a floor for growth and give us confidence the longer-term outlook remains positive.
- **Australia has a strong natural resource endowment, we see it as geographically isolated from terrorism and external geopolitical risks,** it has positive demographics vis-à-vis other Western developed economies and it is well regulated with a credible central bank. Domestic politics are fractious, but functioning, in our view. We believe turbulent leadership transitions have conjured a degree of fatigue and disillusionment in the electorate but it has driven high policy scrutiny and a clustering around the middle. Policy progress tends to be incremental, and usually requires bi-partisan support. This can be a source of frustration, but predictability is a positive differentiator in a more chaotic world.
- **While Australia remains reliant on foreign capital, portfolio inflows are supported by interest rate differentials and an attractive and sustainable dividend yield (~4%).** It is argued that Australia is an expensive, ex growth asset. The facts don't support this. Annual earnings growth over the past 25 years has been in line with World equities and only slightly below Asia. Price performance has been superior to both on a capital (3.9%pa) and total return basis (8.2%). Australia has one colossal trump card – its super retirement scheme. Over the coming 25 years, the pension asset pool is projected by the ASFA to grow from US$1.7tn to above US$6.6tn (it already sits at 120% of GDP and 100% of the current ASX market capitalization). This is a powerful backstop for equities, a source of natural demand for new issues and a strong tailwind for domestic unlisted assets.
- **Australian corporates have been a beneficiary of its golden period of economic growth.** Banks have ridden a 25-year balance sheet expansion and resources a commodity boom that saw earnings rise six-fold. This is unlikely to be repeated, but assuming earnings growth converges back towards nominal GDP growth (~5%) then even in the absence of further multiple expansion, this pushes the ASX200 to 10,000 in 10 years and 20,000 by 2040. This might appear optimistic, but Australian equities are not expensive when cyclically adjusted. They trade at only 16x versus a long-run average of 19x and US equities at a whopping 29x. If the price you pay is a strong indicator of long-run returns, then we believe Australia remains golden.

Executive Summary:

- **The rise of populism is a direct reflection of disintegrating labour markets and rising income and wealth inequalities** (see here). Populists seem prepared to take up their cause, and we believe this will drive less trade, less interaction and greater localization either via offering greater protection for local jobs, businesses and employment whether by expelling illegal immigrants, restricting immigration or renegotiating trade agreements.
- **We expect the state will bear a much heavier responsibility to counteract the negative impact of structural drags** which are distorting the labour market and incomes via technology and deteriorating demographics. Monetary policy will likely begin to play a secondary role as it moves past and through its limits.
- **Against a backdrop of rising political uncertainty, Australia is well positioned to be a relative economic outperformer:**
    1. Well insulated from geopolitical and terrorist threats, in our view;
    2. Asset-rich with a large natural resource endowment;
    3. Largely food and energy self-sufficient;
    4. Has positive demographic vis-à-vis other developed economies (i.e. solid organic population growth, strong immigration, young and educated);
    5. Geographically well positioned with proximity to the East which has ambitions that are not consistent with economic standing;
    6. A well-regulated and respected corporate sector with an independent and credible central bank.
- **The current political climate in Australia appears fractious, but it is functioning,** as post-boom economic conditions and seemingly turbulent leadership transitions have conjured up a degree of fatigue and disillusionment in the electorate. Australia is aligned with the US despite its economic fortunes lying with the East. We don't foresee a major unravelling of these traditional ties, but we do see the prospect of more multilateral policy agreements that involve closer ties to regional players – both China and India as well as throughout ASEAN.
- **The next two decades will present an opportunity to become more politically independent** and more flexible. We believe key regional players are ambitious and economic strength will increasingly support this ambition as India joins China as an economic power. Australia is unlikely to take a leadership role in driving regional policy, but it is unlikely to question the legitimacy of those whose economic benefits it derives.
- **After 26 years of unbroken economic growth, we believe Australia's growth outlook remains extremely attractive in a world struggling for growth,** particularly the advanced economies, and facing increased challenges from ageing populations. The outlook is for annual GDP growth in Australia to better the IMF's average advanced economy forecast by 1% per annum over the next 5 years. By 2021 Australia's economy is expected to have grown by twice that of the G7 (approximately ~19% versus the G7 of 10%).

- **Australia has posted earnings growth in line with the developed world through the past 20 years.** While we expect this to decline (consistent with the structural decline in economic growth), it should remain relatively favourable through the cycle at ~5-6%. Assuming this to be the case, without any contribution from multiple expansion, this would put the ASX200 at 10,000 in a decade and breaching 20,000 by 2040.
- **Australia's trump card is its colossal super retirement scheme.** Over the coming 25 years, the pension asset pool is projected by the Treasury to grow from US$1.7tn to above US$6.6tn (it already sits at 120% of GDP and 100% of the current ASX market capitalization). This is a powerful backstop for equities, a source of natural demand for new issues and a strong tailwind for domestic unlisted assets. Australia has the added advantage of being reasonably attractive on a cyclically adjusted PE multiple of only 16x (versus the US on 29x).
- **The idea that Australia is ex growth ignores strong structural growth drivers.** Cyclical risks will likely provide some headwinds for areas that have become misaligned such as housing and the consumer. However, we expect structurally the tailwind from population growth, underinvestment (misdirected) and superannuation flows will continue to support infrastructure and related urban development, retail spending (underpinning the structural shift to online), healthcare, food & agriculture as well as further growth in services (hotels, education and asset management). We believe the thirst for yield will not diminish, and longer term will be supported by regional demographics. We expect the premium paid for high dividend growing stocks will increase even further.
- **Backed by a large and growing superannuation industry Australian Financial institutions are well positioned to be pioneers of the sector over the coming** decade with opportunities across areas such an ageing demographic, global asset management and sustainable investing. We expect competition will continue to be tough and technology has enabled low cost, rules-based investing to prosper. We believe these funds will continue to grow their market share and relevance for Australian corporates.
- **We identify four key areas that are structural beneficiaries of Australia's growth outlook.**

Fig 1 Key areas that are structural beneficiaries of Australia's growth outlook

Agriculture	Education	Tourism	Services
Dairy: A2 Milk (A**2M**), Bega Cheese (**BGA**), Fonterra (FSF), MG Unit Trust (MGC)	**Education:** 3P Learning (**3PL**), IDP Education (IDP); Navitas (**NVT**), Seek (**SEK**),	**Airlines, Aiports (and Duty Free) & Transport**: Qantas (**QAN**); Sydney Airport (**SYD**); Transurban (**TCL**); Sealink (**SLK**)	**Online:** Aconex (**ACX**), Corporate Travel (**CTD**), MYOB (**MYO**), TechnologyOne (**TNE**),
Grains: Elders (**ELD**), Grain Corp (**GNC**), Nufarm (**NUF**)		**Construction & Shopping Centres:** Boral (**BLD**), Lend Lease (**LLC**); Scentre Group (**SCG**)	**Fleet Management & Salary Packaging:** Eclipx (**ECX**), SG Fleet (**SGF**), Smart Group (**SIQ**)
Meat: Inghams (**ING**)		**Gamers**: Crown (**CWN**); Star Entertainment (**SGR**);	**Data Providers**: NextDC (**NXT**)
Water: Ruralco (**RHL**)		**Hotels & Leisure:** Ardent (**AAD**); Mantra (**MTR**); Village (**VRL**)	**Wealth Managers**
		Staples: Treasury Wines (**TWE**)	

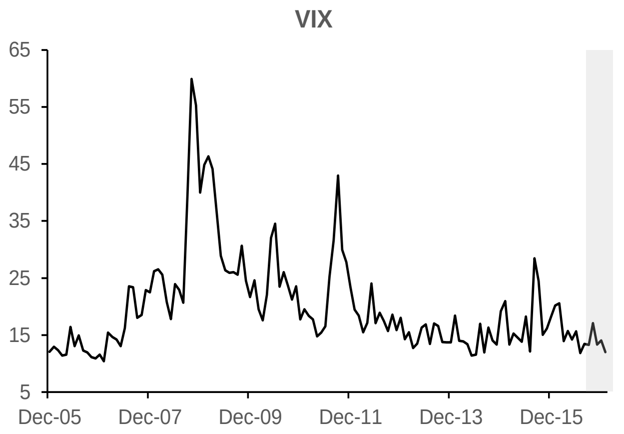
Source: Macquarie Research, April 2017

The Global Political Trends

Evidence continues to build in support of a global economic and political paradigm shift. We expect this will meaningfully alter Australia's standing on the global stage and bring with it material changes for how domestic and international investors view our investment environment.

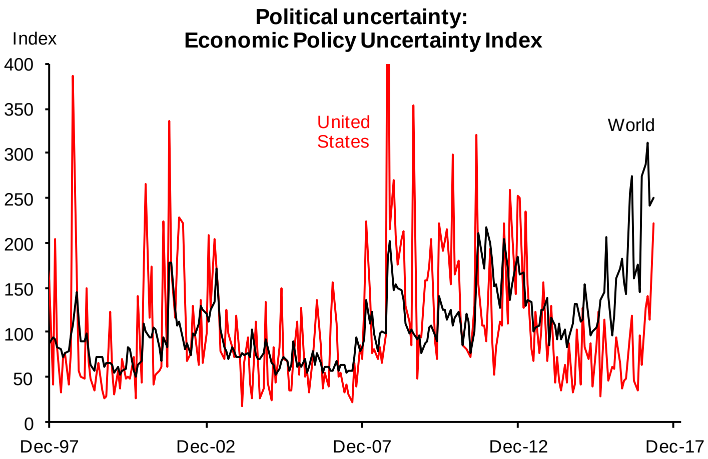
Brexit, the rise of Donald Trump and further potential leadership shifts throughout Europe (i.e. France) continue to reflect the spread of populism. There are signs that populism and anti-establishment policies are in a structural upswing. The world under American hegemony is in decline and a multi-polar world is emerging that will be the consequence of an inward shift in policy direction and a push for regionalization over globalization.

Fig 2 Equity market volatility remains low…



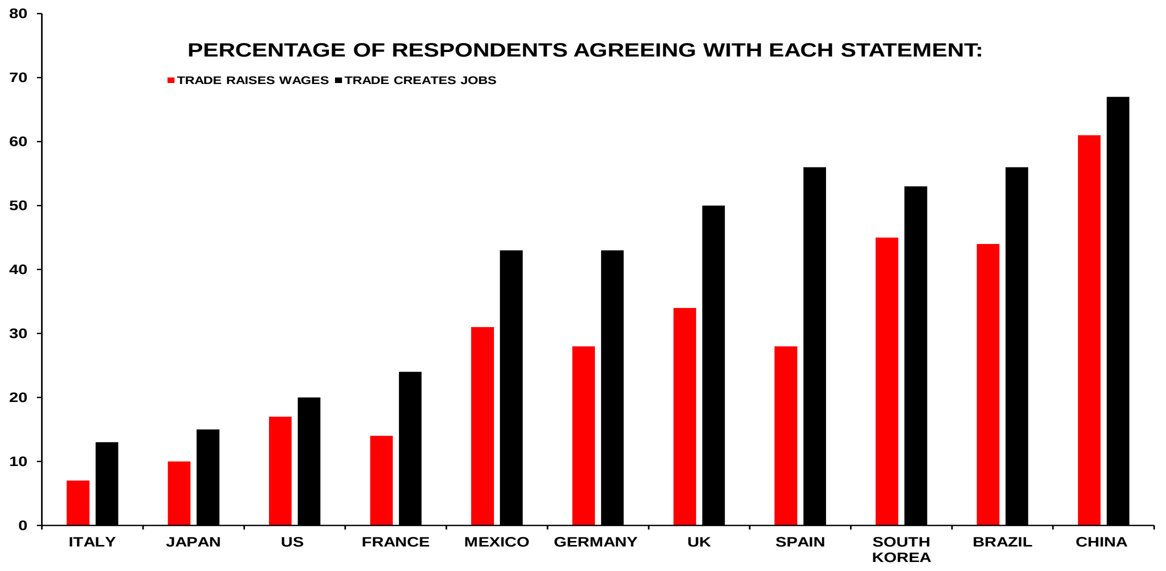
Source (Figs 1 & 2): Factset, Macquarie Research, April 2017

Fig 3 …despite a spike in political uncertainty



Similarly, after nearly a decade of monetary policy being the key method of supporting growth, political change is in the process of pushing the pendulum away from fiscal austerity and tighter financial sector regulation. Technological change and globalization has enriched the world but it has come at a cost for many developed market middle classes.

Fig 4 Who wants globalization? America belongs to the Anti-Globalization Bloc



Source: Macquarie Research, April 2017

The outcome is greater empowerment of individuals, states and countries alike. The pursuit of nationalistic and more inward-focused policy at the expense of international cooperation is already unfolding. How the world reacts and adjusts is highly uncertain but the architects of change are already beginning to emerge and the agenda will be very different to the one that has dominated for the past 30-40 years.

There does not appear to be much debate as to the broader trends unfolding – populism over democracy, de-globalization over globalization, greater public over private sector involvement and multi polarity over American hegemony (the path for the world becomes an outcome rather than an objective).

Global Trends and Key Implications through 2035

Fig 5 Global Trends and Key Implications through 2035

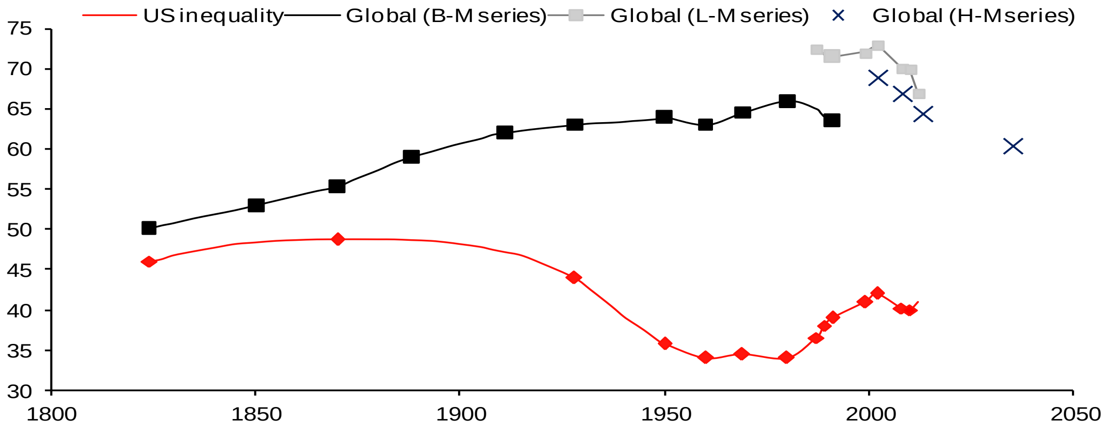
The global economy is shifting. Weak economic growth will persist in the near term. Major economics will confront shrinking workforces and diminishing productivity gains while recovering from the 2008-09 financial crisis with high debt, weak demand, and doubts about globalization. China will attempt to shift to a consumer-driven economy from its longstanding export and investment focus. Lower growth will threaten poverty reduction in developing countries.
Technology is accelerating progress but causing discontinuities. Rapid technological advancements will increase the pace of change and create new opportunities but will aggravate divisions between winner and losers. Automation and artificial intelligence threaten to change industries faster than economies can adjust, potentially displacing workers and limiting the usual route for poor countries to develop. Biotechnologies such as genome editing will revolutionize medicine and other fields, while sharpening moral differences.
Ideas and Identities are driving a wave of exclusion. Growing global connectivity amid weak growth will increase tensions within and between societies. Populism will increase on the right and the left, threatening liberalism. Some leaders will use nationalism to shore up control. Religious influence will be increasingly consequential and more authoritative than many governments. Nearly all countries will see economic forces boost women's status and leadership roles, but backlash also will occur.
Governing is getting harder. Publics will demand government's deliver security and prosperity, but flat revenues, distrust, polarization, and a growing list of emerging issues will hamper government performance. Technology will expand the range of players who can block or circumvent political action. Managing global issues will become harder as actors multiply–to include NGOs, corporations, and empowered individuals–resulting in more ad hoc, fewer encompassing efforts.
The nature of conflict is changing. The risk of conflict will increase due to diverging interests among major powers, an expanding terror threat, continued instability in weak states, and the spread of lethal, disruptive technologies. Disrupting societies will become more common, with long-range precision weapons, cyber, and robotic systems to target infrastructure from afar, and more accessible technology to create weapons of mass destruction.
Climate change, environment, and health issues will demand attention. A range of global hazards pose imminent and longer-term threats that will require collective action to address–even as cooperation becomes harder. More extreme weather, water and soil stress, and food insecurity will disrupt societies. Sea-level rise, ocean acidification, glacial melt, and pollution will change living patterns. Tensions over climate change will grow. Increased travel and poor health infrastructure will make infectious diseases harder to manage.

Source: National Intelligence Council: Global Trends Paradox of Progress (January 2017)

The End of Status Quo

We believe investors are always comfortable with a status quo, as they feel confident that there are investment and economic rules that they can follow with some degree of certainty. Hence, death of 'status quo' tends to be highly destabilizing, until new policies acquire the same dogmatic value. But usually this is years later. In the meantime, volatilities increase significantly as investors attempt to re-position themselves (see What caught my eye? V.61: Lumpenproletariat & deglobalization – Viktor Shvets).

Fig 6 Global and US inequality, 1820-2011

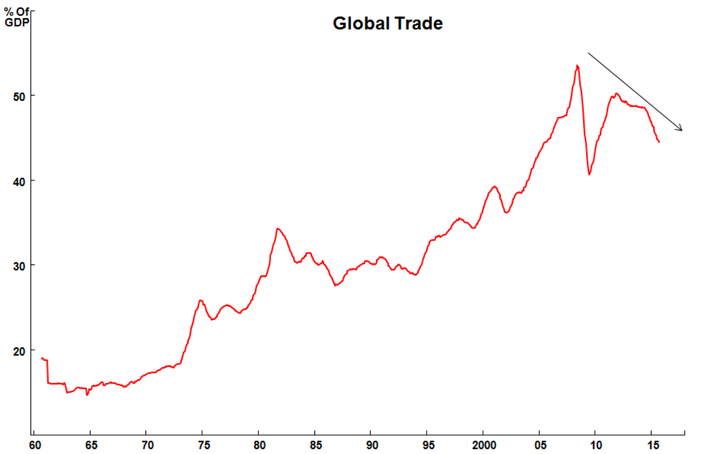


Note: This graph shows global and US income inequalities (calculated across world and US citizens, respectively). In the recent period, global inequality is decreasing while US inequality is going up.

Source: Milanovic Branko: *Global inequality,* page 124, with the 2003, 2008 and 2013 estimates and the 2035 forecast for global inequality from the paper *The future of worldwide income distribution*, April 2015, by Tomas Hellebrandt and Paolo Mauro, The Global Macro Outlook – The view from the commodity pit: April 2017

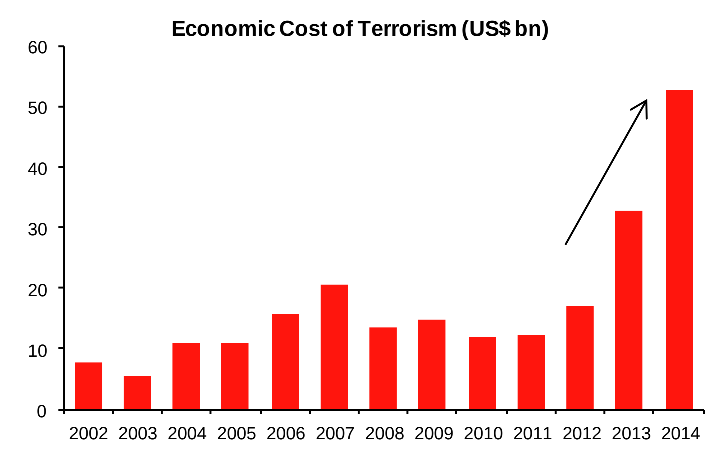
We believe the rise of populism is a direct reflection of disintegrating labour markets and rising income and wealth inequalities. We see it as essentially the majority of the population in developed markets that have been on the receiving end of globalization as well as a growing shift towards assets rather than income as the source of wealth. The same process is now increasingly working through the emerging universe as well. There are not many supporters of Trump or Brexit in London or Silicon Valley but there is plenty of support in Michigan, Pennsylvania and the Midlands. As discussed, whether populists genuinely feel for this group is not as relevant, as their ability to play a role of outsiders to the system and be seen to be prepared to take up their cause of slowing the pace of globalization and offering greater protection for local jobs, businesses and employment whether by expelling illegals, restricting immigration or renegotiating trade agreements (see What caught my eye? V.73: Is higher uncertainty = higher growth? Viktor Shvets).

Fig 7 Global trade has reached its apex



Source: Factset, Macquarie Research, April 2017

Fig 8 Economic cost of terrorism is on the rise



Source: Global Terrorism Index, Macquarie Research, April 2017

We believe globalization and the (financial) de-regulation age died in 2008 (following the GFC and collapse of the Doha round of WTO negotiations), and the almost exclusive reliance on aggressive monetary policies also started to ebb following ending of the Fed's third round of QE in late 2014. We are now somewhere in between the old world and the new world. This could be considered the 'Twilight' zone. Ultimately, the new world would have less trade, greater localization and rising public sector dominance (see What caught my eye? V.73: Is higher uncertainty = higher growth? Viktor Shvets). We envisage a world where the public becomes a much larger allocator of capital, in part crowding out the private sector which remains hampered by an unwillingness to adjust lower return on capital expectations (in 2014 the RBA estimated that the number of businesses which had adjusted downwards their return expectations to below 10% was only 15% but this was despite a cost of capital of only 6-7%).

Fig 9 The cost of capital in Australia is significantly below the long-run average

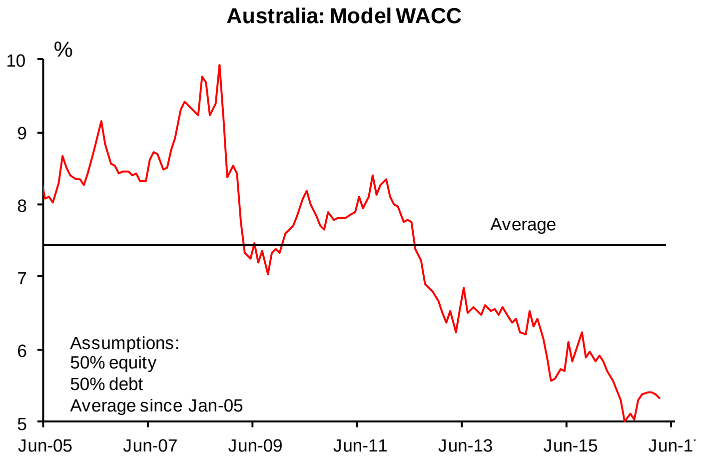
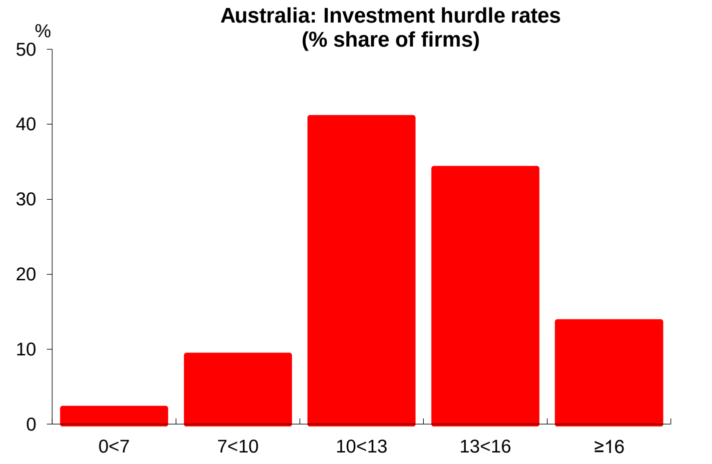


Fig 10 Firms' hurdle rates have remained elevated, dampening investment (2014)



Source (Figs 9 & 10): RBA, Factset, Macquarie Research, April 2017

Fig 11 Protectionism remains high

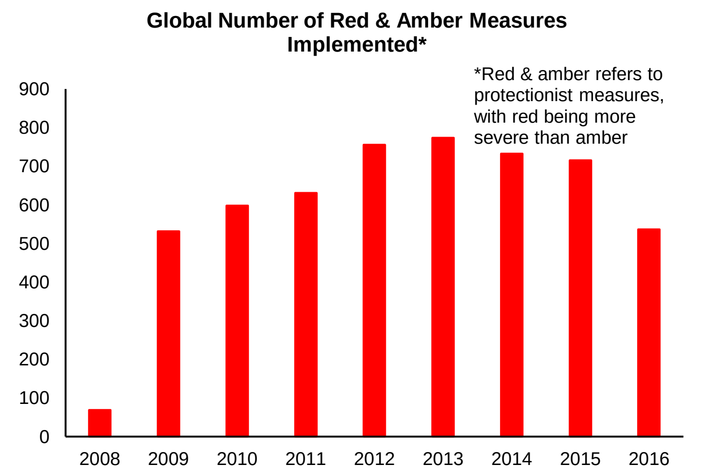
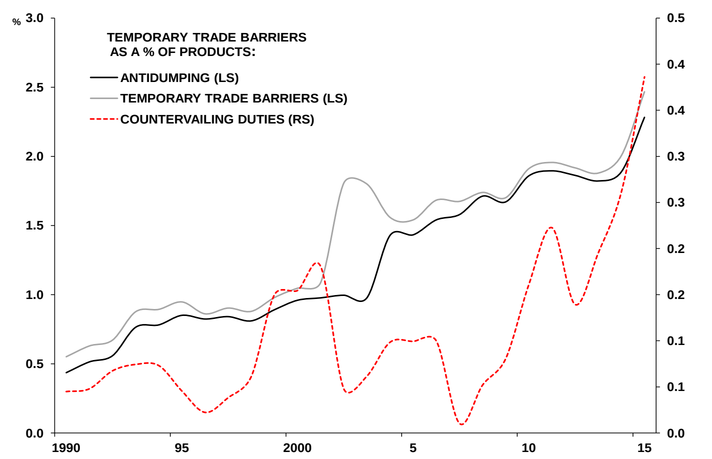


Fig 12 Trade barriers continue to emerge

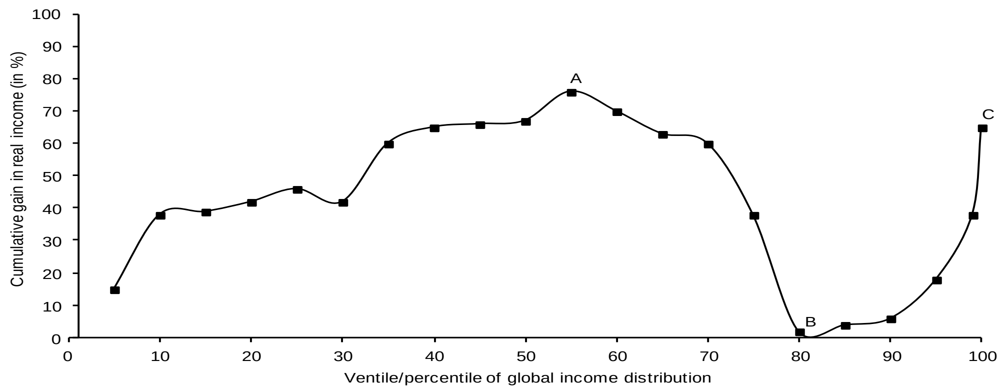


Source (Figs 11 & 12): Factset, Macquarie Research, April 2017

Ultimately, the new world may think differently about concepts such as Central Bank independence and separation of fiscal and monetary policies. It would be a world of less trade, less interaction and greater localization. It would also be a world where the state bears much heavier responsibility to counteract the negative impact of the Third Industrial Revolution (technology), which is distorting labour markets while contributing to growing income and wealth inequalities, within states and between states.

We expect the world will be characterized by an increasingly violent 'tug of war' between technology, which is pushing globalization and marginal costs of many things lower, and states and nations pushing back against this tide. We maintain that the key prerequisites for this new world is a merger of monetary and fiscal policies as well as global co-ordination of fiscal and monetary policies, to ensure the best impact whilst reducing chances of disorderly moves in currency and bond markets.

Fig 13 Relative gain in real per capita income by global income level, 1988-2008



This graph shows relative (percentage) gain in household per capita income (measured in 2005 international dollars) between 1988 and 2008 at different points of the global income distribution (ranging from the poorest five percentiles, 0 to 5, to the richest global percentile, at 100). Real income gains were greatest around the 50th percentile of the global income distribution (the median; at point A) and among the richest (the top 1%; at point C). They were lowest among people who were around the 80th percentile globally (point B), most of whom are in the lower middle class of the rich world

Source: World Bank Economic Review, Lakner, Christoph & Branko Milanovic, 2015, *Global income distribution: From the fall of the Berlin Wall to the Great Recession*, The Global Macro Outlook – The view from the commodity pit: April 2017

What does this uncertain and increasingly violent world mean for policy makers and investors? As in 1870-80s, we believe that political response to a growing anxiety of citizens (and in many cases voters, although quite often non-democracies tend to be even more sensitive to views of the country's residents) is a number of policy changes (see What caught my eye? V.61: Lumpenproletariat & deglobalization – Viktor Shvets):

1. **Proliferation of policies designed to protect and shelter domestic economic activity.** While in 1870s-80s, there was no WTO, either over or covert protectionary measures have always been dangerous, as they tend to invite retaliation (as trade wars between France and Italy or Russia and Germany in the late 19th century illustrated). Hence even in the absence of formal rules, increases in tariff protection in late 19th century were generally gradual and hesitant.

   In our view, this is exactly what is likely to happen over the next five to ten years, except there would be less reliance on tariffs and greater use of non-tariff protection (such as labelling of products; quality and safety rules; anti-dumping regulations). With the benefit of hindsight the breakdown of Doha multilateral round of negotiations that started in 2001 and died in 2008 would probably go down in history as the high point of liberalization and freeing global trade. After many successful preceding rounds, Doha disintegrated under pressure of disagreements on agriculture, industrial tariffs and more importantly non-tariff barriers and services.

   We believe that it was the above outlined pressures points across both developed and emerging economies that grew in strength since the 1990s, implied that only small incremental liberalization steps could be made. In our view, even these steps are likely to reverse as we progress over the next decade.

2. **Increasing closure of borders and much stricter immigration and asylum policies.** As in late 19th-early 20th centuries, governments would increasingly resort to tighter border and immigration controls. Whilst cultural and xenophobic issues would play a part, it would be essentially designed to shelter disoriented and frightened citizens from the perception that not just foreign goods but also foreign people are eroding local opportunities. The borders finally closed globally in the 1920s; we would expect the same to occur across a wide range of countries.

The only key difference is a high probability of growing refugee migration that (as we discussed above) is likely to rise significantly in the current decade, as employment and income opportunities decline in emerging markets with a surplus of younger people. In our view Europe would remain on the front line but economic and refugee mass migration would impact everyone.

3. **Changing the role of the Government – pendulum firmly in state corner.** We also maintain that whilst some of the above consumption expenditure would be paid through conventional neo-Marxist re-distribution of income and wealth, it would be mostly financed directly through central banks, thus breaking the nexus between borrowing and spending. The same largely applies to the governments' role in fixed assets and infrastructure investment.

   Although the risks are high, as discussed in our previous notes, we believe that there is no choice but for governments to become far more proactive. We also believe that given the above challenges as well as pre-existing debt burden (more than 3x global GDP), the state cannot allow volatility rates imbedded in the financial superstructure to undermine the real economic outcomes. The need to control financial volatilities and finance its expanded role implies the inexorable path towards 'nationalization of credit'.

As citizens ask for help to reduce uncertainties and protect them from volatilities of financial, technological and real economies, politicians are likely to respond. The recent rise in populism is not an aberration but we believe a logical outcome. In using the National Intelligence Council's framework, these changes suggest the backdrop will be primarily determined by 1) dynamics within countries; 2) dynamics between countries and 3) the trade-offs between short- and long-term objectives. These decisions intersect to create three future states.

1. **Islands:** This investigates a restructuring of the global economy that leads to long periods of slow or no growth, challenging both traditional models or economic prosperity and the presumption that globalization will continue to expand. The scenario emphasizes the challenges to governments in meeting society's demands for both economic and physical security as popular pushback to globalization increases, emerging technologies transform work and trade, and political instability grows. It underscores the choices governments will face in conditions that might tempt some to turn inward, reduce support for multilateral cooperation, and adopt protectionist policies, while others find ways to leverage new sources of economic growth and productivity.
2. **Orbits** explores a future of tensions created by competing major powers seeking their own spheres of influence while attempting to maintain stability at home. It examines how the trends of rising nationalism, changing conflict patterns, emerging disruptive technologies, and decreasing global cooperation might combine to increase the risk of interstate conflict. This scenario emphasizes the policy choices ahead for governments that would reinforce stability and peace or further exacerbate tensions. It features a nuclear weapon used in anger, which turns out to concentrate global minds so that it does not happen again.
3. **Communities** shows how growing public expectations but diminishing capacity of national governments open space for local governments and private sectors, challenging traditional assumptions about what governing means. Information technology remains the key enabler, and companies, advocacy groups, charities, and local governments in delivering services to sway populations in support of their agendas. Most national governments resist but others cede some power to emerging networks. Everywhere, from the Middle East to Russia, control is harder.

We think there are elements of all three outcomes that will come to pass. The need for government to encourage more public-private partnership will increase the amount of civil and non-governmental involvement in many areas, potentially crossing over into national security. Similarly, the reach of global technology titans will also begin to blur the lines between the social good and who might be more effective in acting change. We think the world is a long way from more decentralized government structures, but this would be the extreme outcome of a "community" based model.

Unilateral volatility – the most likely outcome; however, institutional and global constraints might prevent the most extreme outcomes

While it is generally accepted that persistent deficits and surpluses by various countries is a reflection of persistent domestic distortions that preclude normalization through conventional currency movements and unfettered globalization is causing significant social and political dislocation, unilateral action to re-negotiate previously agreed treaties and using a 'bully pulpit' to drive corporate decisions has the potential to cause much deeper dislocation. In other words, the medicine could be worse than the disease. However, there are a number of automatic stabilizers that could help the global economy avoid the more extreme outcomes.

1. First, it is far from clear whether either 'border adjustment' as a significant uptick in fiscal deficits and infrastructure spending would be passed by the Congress. The longer it takes to negotiate and the closer we get to '18 midterm elections, the less likely either plan would be implemented without diltution. Executive actions can reinterpret law but they cannot authorise spending or put through new legislation.
2. Second, even if some version of fiscal spending and 'border adjustment' were to be accepted, the Trump administration is facing the binding constraints of the global bond and currency markets, which could move in the opposite direction, thus negating a considerable part of the supposed benefit of trade action.
3. Third, one should never underestimate the lobbying and economic clout of firms and sectors of the economy (ranging from Walmart to tech giants) that have been the greatest beneficiaries of globalization.

It is not a foregone conclusion that the pace of deglobalization will significantly accelerate, but it is difficult to see signs that the trend will go back into reverse. Nevertheless, the 'tail risks' remain exceptionally high. We expect nothing less than a complete re-working of global trade and finance system over the coming decades.

For Australia within an Asian context this has a number of key implications. It will have to deal with a larger number of players who are all trying to redefine their own position and economic power. China and India will over the next 10-15 years become the second and third largest global economies. This in itself will reduce Western influence on the region but importantly, there is a growing ambition by regional leaders that is supported by strong economic growth at a time when American influence is shrinking. Asia still suffers from significant territorial disputes (i.e. Diaoyutai/Senkaku Islands, South China Sea), and these have the potential to drive periods of instability, particularly as the demand for raw materials, food and energy become much greater.

Historically Australia has aligned itself both economically and politically with America. This axis has already pivoted towards China from an economic standpoint. It is likely that Australia will need to foster more autonomy, which will allow greater regional alliances over time. Regionalization will be gradual and this will require that Australia is also more flexible in its alignment and ultimately less dependent on America's strategic umbrella. This places Australia in what we believe could be a very fortunate position where it is geographically centred to benefit from a shift away from the West and economically positioned to benefit from a much stronger China and India alongside other developing ASEAN countries.

Australian Economic Outlook

A developed world 'growth haven'

Australia sits in a favourable and unique position with a strong and potentially growing resilience towards a world that is becoming more chaotic, in our view. Geographically we believe Australia is insulated from geopolitical and terrorist threats, it is asset-rich, has a positive demographic backdrop (strong immigration of young and educated foreigners) and is largely food and energy self-sufficient. It has a credible and independent central bank and a financial sector that is well regulated with strong oversight.

On the downside, we see Australia's current political climate as fractious, although functioning. We believe post-boom economic conditions and seemingly turbulent leadership transitions have conjured a degree of fatigue and disillusionment in the electorate but this has not yet brought a sharp change in party representation or policy direction. Australia's risks are more likely to be economic than political or social. Primarily it has an over indebted consumer with low income growth. It is highly reliant on global capital markets to fund investment despite a high savings rate and economically it remains concentrated and subject to exogenous shocks particularly from China. However, we think the distortions created by excess leverage have become so large that regulators and policy makers will only move gradually to slow their growth and to reduce systematic risks.

Fig 14 Australia's Advantages & Disadvantages

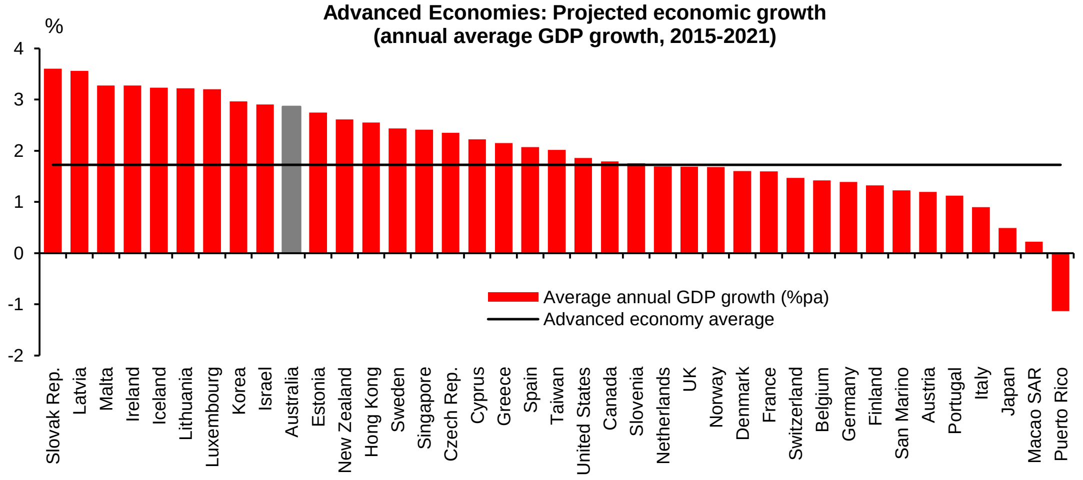
Australia's Advantages:	Australia's Disadvantages:
Economy: Chinese link has provided a strong growth tailwind that should broaden as the East continues its economic ascent. Well-regulated financial sector, independent and credible central bank.	**Economy:** Highly concentrated in resources, widely dispersed across large geographic footprint, developing services sector, vulnerable to exogenous shocks.
Demographics: Young population, solid population growth, strong immigration growth, well educated.	**Culture & social system:** Some cultural misalignment.
Assets: Asset rich (natural resources), large savings pool (superannuation), food and energy independent, natural disaster risks low.	**Consumer:** Highly indebted with ongoing weak compensation levels. Savings rate positive but providing increasing support for consumption patterns.
Politics: High policy scrutiny and a clustering around the middle. Policy progress tends to be incremental, and usually requires bi-partisan support. Frequent leadership changes have not driven large policy swings.	**Capital:** Reliant on offshore funding (albeit at a declining rate) despite high savings levels.
Security: Geographically isolated. Closely aligned with the US but economically aligned with the East (China).	**Future growth & technology**: largely unfunded with limited long-term productivity enhancing investment underway.

Source: Macquarie Research, April 2017

What makes Australia unique?

After 26 years of unbroken economic growth, we believe Australia's growth outlook remains extremely attractive in a world struggling for growth, particularly the advanced economies, and facing increased challenges from ageing populations. Our outlook is for annual GDP growth in Australia to better the IMF's average advanced economy forecast by 1% per annum over the next five years. By 2021, we expect Australia's economy to have grown by twice that of the G7 (approximately ~19% versus the G7 of 10%).

Fig 15 Australia's economic growth rate is expected to exceed the advanced economy average by ~1ppt per annum

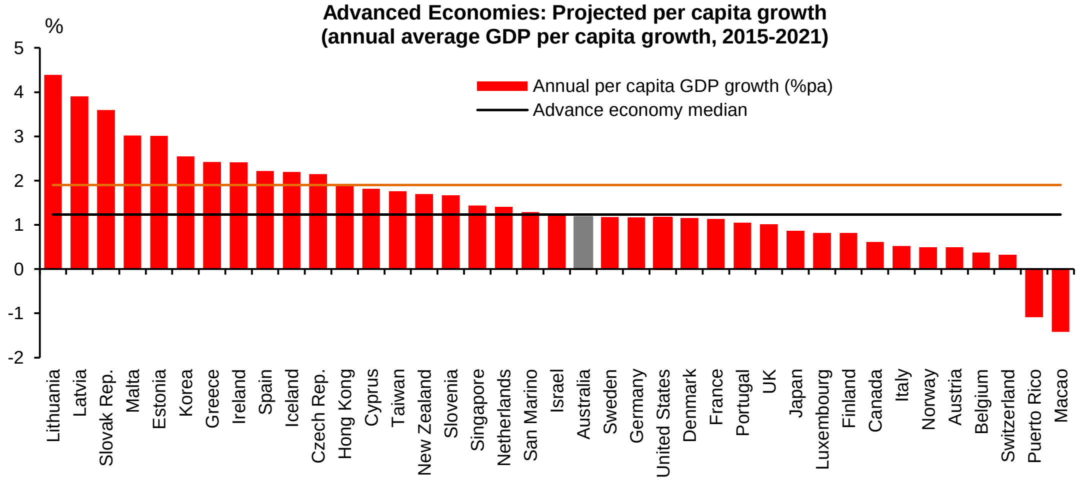


Source: IMF, Macquarie Research, April 2017

The global challenges we have highlighted in section 1 are particularly relevant for Australia. However, Australia's growth drivers are less susceptible to the rise in uncertainty and volatility stemming from the shifts in the geopolitical and economic landscape. Australia's resilience comes from a range of sources and growth outperformance comes with significant insulation from continued strong population growth.

We expect rising protectionism and geopolitical uncertainty will have an effect on the pace of per capita growth. Particularly for advanced economies, which have been the major beneficiaries – in aggregate terms – of the rise in globalisation and streamlining of global supply chains. From a per capita growth perspective, Australia's performance is much less impressive. Australia has just as much to lose as the median advanced economy, with the IMF's estimates putting Australia's per capita GDP growth at 1.2% - around the median, and only 60% of the average (1.9% pa).

Fig 16 Growth composition – Australia's outperformance is not driven by a superior per capita growth outlook

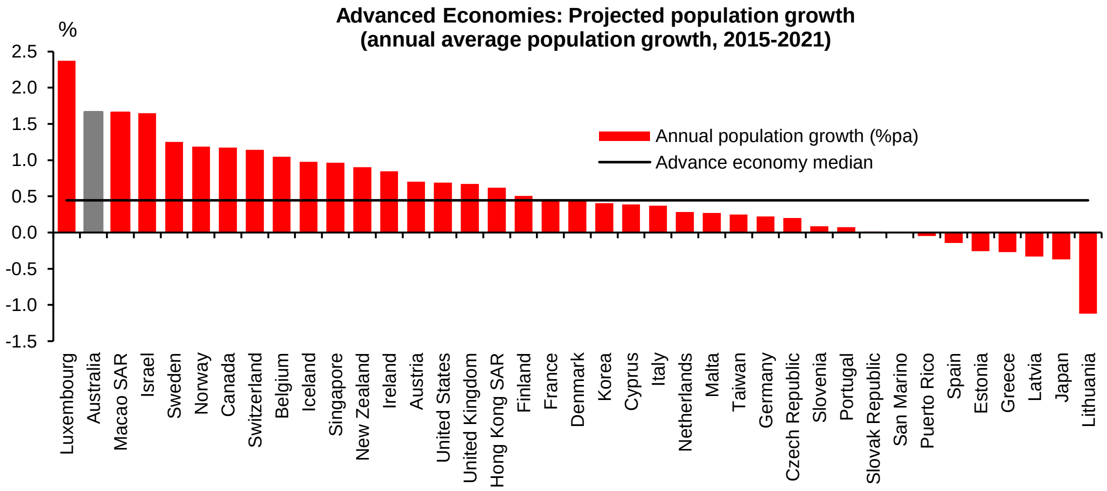


Source: IMF, Macquarie Research, April 2017

Strong population growth to continue

While per capita growth may be more difficult to achieve globally, the bulk (almost two-thirds) of Australia's growth derives from Australia's powerful population growth tailwind. Thus, although Australia's per capita growth outlook is not particularly inspiring, the population growth rate, at an average of 1.7% pa over the next 5 years, is more than 3x the average advanced economy pace. Over the past 50 years, Australia's population has grown at an average rate of 1.5% per annum.

Fig 17 Australia's population is projected to grow at one of the fastest rates amongst advanced economies

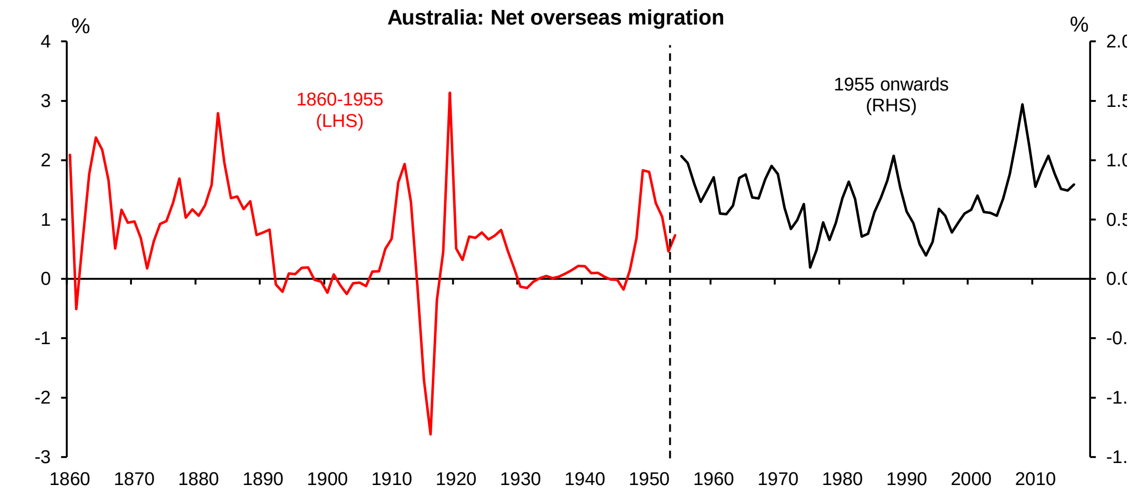


Source: IMF, Macquarie Research, April 2017

Much of that growth stems from Australia's strong inbound migration flows. Australia is one of the few countries in the world to successfully maintain an enduring, large-scale migration program. Over the past 60 years, Australia has run a net overseas migration intake equivalent to ~0.8% of the population.

Recent net migration trends point to a slight upturn in Australia's net migration flows, as departures decline, and arrivals rise. In part, this is likely to reflect the response of Australians choosing to stay in Australia, as much as the attractiveness of migrating to Australia from the rest of the world. One significantly positive consequence of the strong trend is that Australia should remain relatively younger for longer.

Fig 18 Australia has run a strong migration intake for the past 60 years



Source: ABS, Macquarie Research, April 2017

Australia has been an attractive capital destination

Australia's strong population growth offers a growing, and investable, source of advanced economy demand. From a longer-run demand perspective, Australia's growth potential is likely to experience less deterioration than other advanced economies.

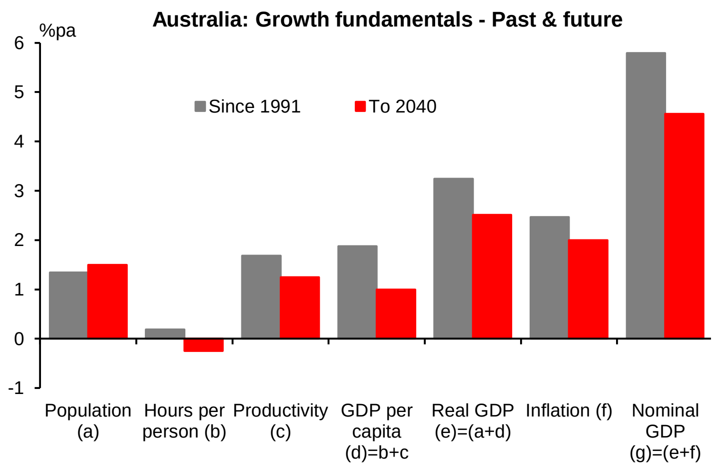
Over the past 26 years (since the 1991 recession) Australia's economy has grown at an average annual pace of 3¼% per annum in real terms. In nominal terms, growth has averaged 5¾% per annum over the same period. On a per capita basis, Australia's GDP rose by 1.9%pa over the past 26 years.

Whilst Australia's population growth (and migration story) provides significant insulation, Australia is not totally immune from the demographically-driven structural slowdown in advanced economy economic growth.

Relative to the previous 26 years, we expect Australia's potential growth rate will slow to 2½%pa by 2040, reflecting a decline in average hours worked (on account of an ageing population), and slower productivity growth. Australia's nominal GDP is likely to slow to ~4½-4¾% per annum.

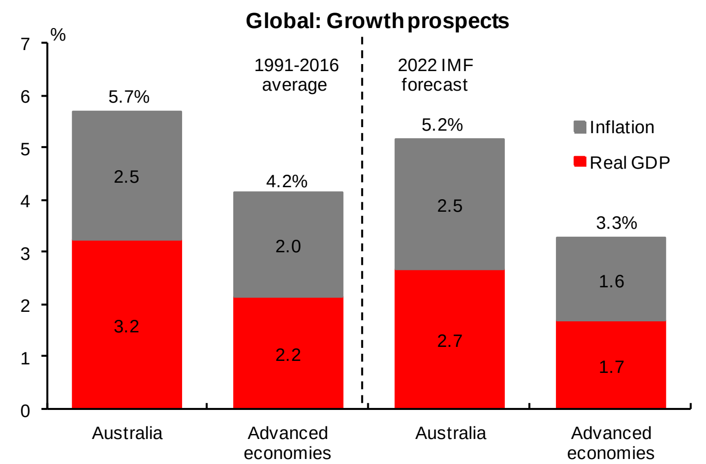
A portion of the structural slowdown in growth is likely over the next five years. The IMF's estimate of Australian GDP growth in 2022 (a proxy for their structural growth outlook) is 2.7%. That's 1ppt per annum faster than the outlook for the advanced economy group as a whole (1.7%pa). At 5¼%, the IMF's estimate of Australia's nominal GDP growth in 2022 is ~60% higher than the advanced economy average (3.3%).

Fig 19 Australia's growth potential – slower, but still stronger



Source: ABS, Macquarie Research, April 2017

Fig 20 Less structural growth weakening relative to advanced economy peers



Source: IMF, ABS, Macquarie Research, April 2017

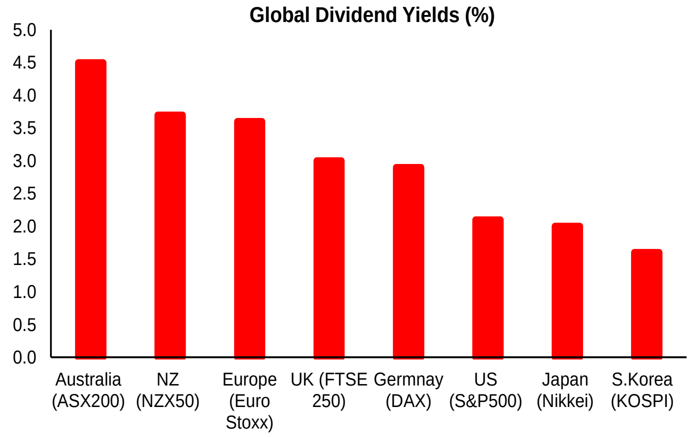
In addition to the growth differential comes the returns differential. Australia's AAA-rated 10-year bonds deliver a yield pickup of 30bp relative to US Treasuries (long run average of ~110bp) and between 150-250bp in additional yield relative to Bunds, Gilts and JGBs (see Figure 21 below).

Attractive yields have seen a significant foreign portfolio inflow into Australian bonds over the past decade. However, these flows can slow, and reverse – particularly when monetary policy diverges and shorter-term differentials offer lower spreads. However, during these periods equity inflows tend to rise, given the still significant yield premium offered by Australian equities.

Australia's growth potential and the economy's relatively higher neutral policy rate are a supportive factor. There is also an additional structural component to the higher average yield for Australia's equity markets – Australia's divident imputation regime. Australia does not double-tax dividends for residents, resulting in significant demand from retail investors – and favourably taxed superannuation funds – to value high payouts from companies. This also adds a degree of capital discipline on the corporate sector.

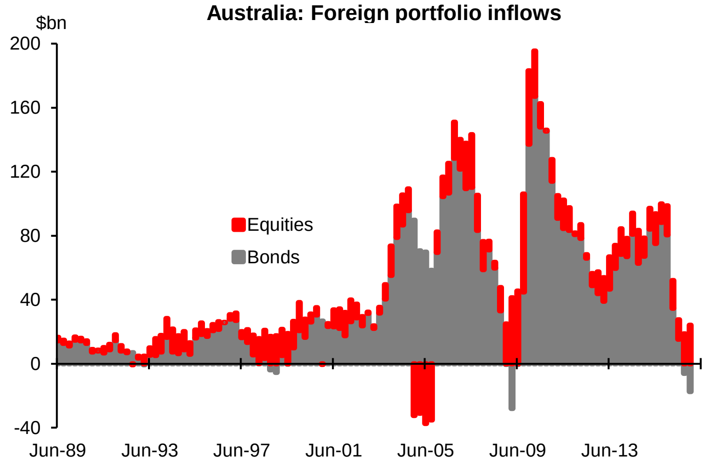
Other features of the Australian story, such as the attractiveness as an international student destination and continued openness to immigration are a further, non-investment, driver of capital flows. Additional capital flows by families to secure accomodation for students, and to support business and other migration, are an additional support to the growth picture.

Fig 21 Dividend yield of ~4.4% is remarkably attractive, both in Australia and globally



Source: Facset, Macquarie Research, April 2017

Fig 22 Attractive yields support equity inflows during periods of low bond differentials

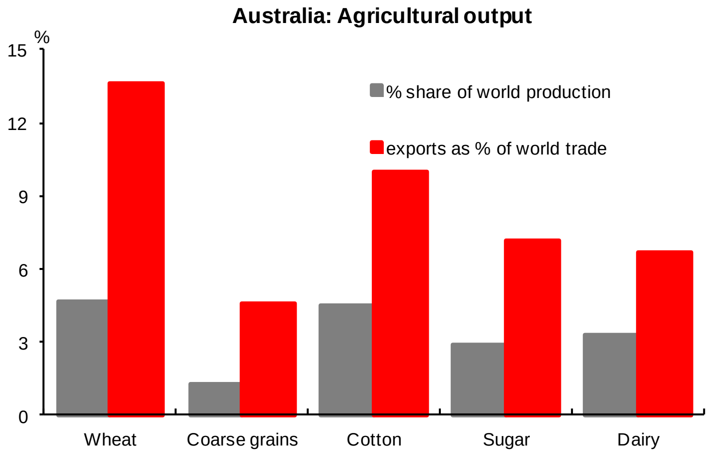


Source: AusTrade, Macquarie Research, April 2017

Australia is internally self-sufficient

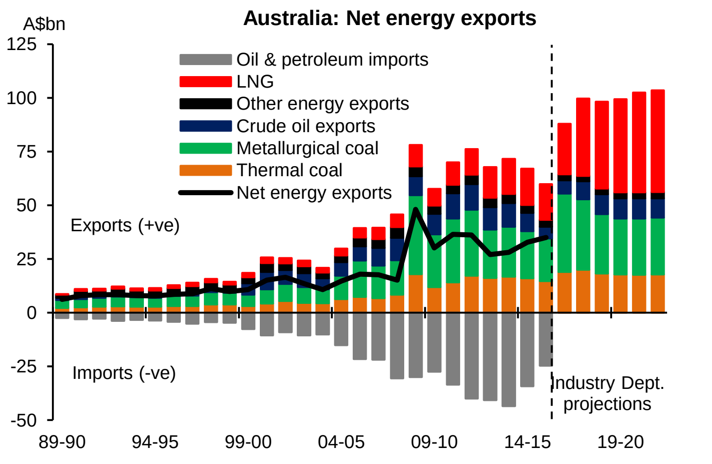
At current levels of production, Australia's agricultural sector exports 70% of what it produces. It is estimated that Australia's farm and fisheries sector produces enough food to feed 60 million people, 2.5 times Australia's population. Additionally, Australia is a net energy exporter, with substantial reserves of coal, gas, and uranium. Thus far in Australia's development, investments in downstream value adding for both energy and agricultural outputs have been minimal, and we expect only gradual and incremental improvement. Nevertheless, we expect this to be a peak demand/seasonal issue rather than a major growth or security concern.

Fig 23 Australia is an outsized contributor to global food trade (2016-17)



Source: ABS, ABARES, Macquarie Research, April 2017

Fig 24 Australia's energy exports are set to surge as LNG volumes rise



Source: ABS, Dept of Industry, Macquarie Research, April 2017

Australia is developed but underdeveloped

Australia's population is concentrated around major urban centres on the continent's south-east. It is estimated that around 85% of Australia's population lives within 50km of the coast.

The North, and interior of the continent are largely undeveloped. In many respects, this reflects soil conditions and water availability. In others, investments in infrastructure have unlocked significant opportunities.

An example is Australia's Pilbara region, where iron ore resources were unlocked through the 1960s as a result of regulatory changes that removed restrictions on overseas trade and investment. Subsequent development over 50 years has seen the region generate export earnings larger than the GDP of 119 countries[1].

Australia remains a young country, and infrastructure (capital) deepening still has a long way to run. The US interstate highway network, and its advantages for transport and logistic productivity stands in contrast to Australia's national highway network. The major highway connection between Sydney and Melbourne was only completely upgraded to four lanes in 2013, 99 years after it was declared a main road. The highway between Sydney and Brisbane is targeted for dual carriageway by 2020.

Rail infrastructure is also in being upgraded. The current east coast interstate mainline railroad shares train paths through Sydney with commuter trains. Australia and Antarctica are the only two continents without a high-speed rail.

Australia's key advantages and disadvantages in a changing world

Advantages

1. An island, a continent, both? Geographic isolation

Australia shares no land borders with other nations. Crucially, in a world where prospects for resource-based conflicts, e.g. around water security, are elevated, Australia shares no common natural resources (with the exception of offshore fisheries and energy basins).

Australia is relatively free of natural disasters, outside of extreme weather events (droughts, floods, storms). Located in the middle, rather than the edge of a continental plate, Australia is less susceptible to major earthquakes, and as the world's oldest continent, is not volcanically active.

Australia is relatively immune from the turmoil in the Middle East, and subsequent mass refugee flows into Europe. The degree of control of Australia's borders that is afforded by geography is helpful in containing transmission of a range of risks. From a safety perspective, Australia was recently rated as the safest country in the world by New World Wealth.

Australia's isolation has, through the course of the nation's development, contributed to a culture of ingenuity, curiosity, pragmatism, resilience and adaptability which will be useful in navigating the potential challenges ahead.

2. Australian Politics – stability, amidst the rough and tumble

The combination of Australia's compulsory voting and full preferential (instant runoff) and proportional voting delivers up electoral outcomes that are fairly close to the centre, and broadly mainstream.

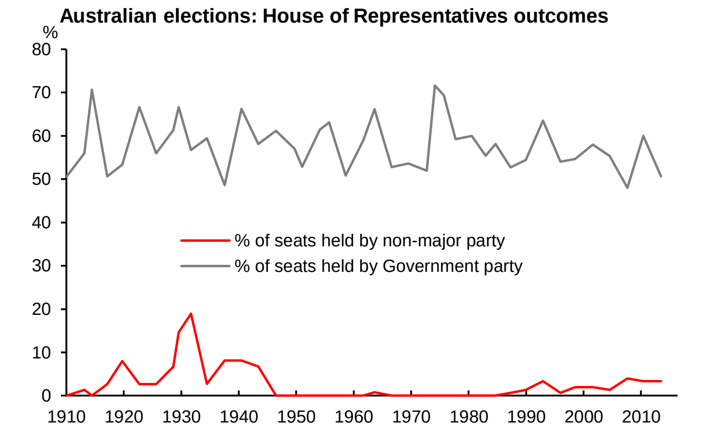
The current political climate in Australia appears fractious to us, but it is functioning, as we believe post-boom economic conditions and seemingly turbulent leadership transitions have conjured a degree of fatigue and disillusionment in the electorate.

Those conditions resulted in the 2016 election delivering the largest ever share of votes cast for non-major political parties in the post-war era. Although the preferential voting system did not see this translate into a fracturing of the Parliament.

The voting systems also means that electoral 'landslides' in Australia could be compared to only 'decimal slides' in other systems. On a two-party preferred (instant runoff) basis the number of seats won by the Governing party does largely reflect the will of the electorate, with electoral boundaries determined by independent authorities at regular intervals.

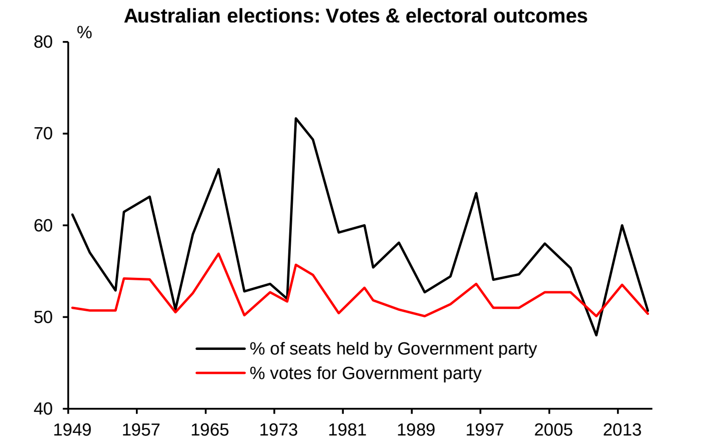
[1] The earnings from the Pilbara alone are larger than the individual economies of 119 countries but are generated by only 60,000 people (Pilbara Development Commission, 2013).

Fig 25 Minor party vote share is not enough to translate into significant lower house representation



Source: AEC, Macquarie Research, April 2017

Fig 26 Credible & transparent system – Electoral outcomes representative of electorate's intentions



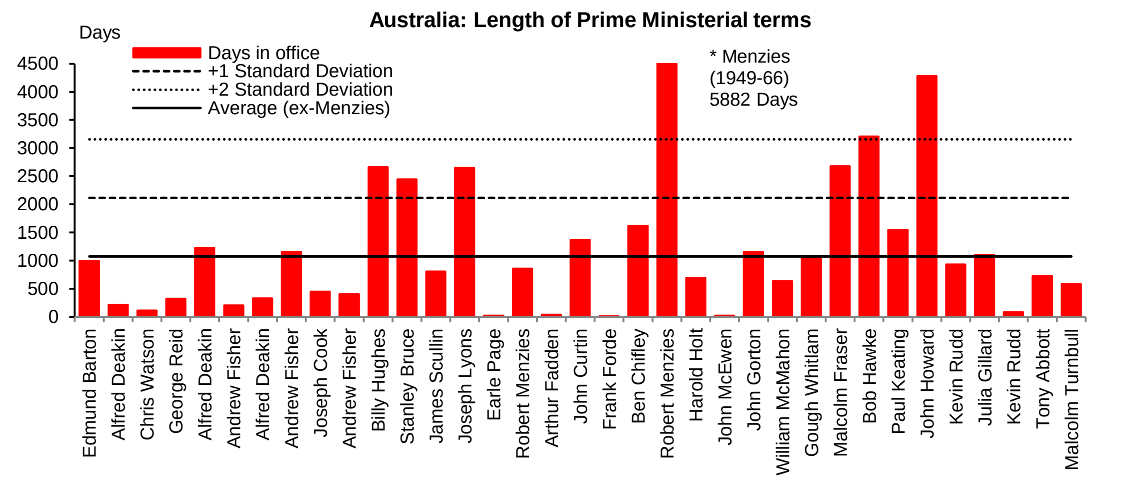
Source: AEC, Macquarie Research, April 2017

One aspect of the past decade that has garnered attention has been the seemingly dramatic, 'overnight', changes in Prime Ministers. Whilst the conditions and momentum for these shifts builds over months, relative to the 30 years from the mid-1970s to the mid-2000s there has been a slightly shorter tenure of leadership.

This is one of features embedded in Australia's democracy. In addition to the structure of the voting system, the procedures and customs of the Federal parliament provide for changes within the executive, and of entire governments between elections – which are not subject to fixed timetables and can be called at whim. Despite this flexibility, Australia has had 45 Parliamentary terms (average length 2.6 years) and just 29 Prime Ministers (average term 3.3 years, or 2.9 excluding Sir Robert Menzies, who served for 16 years). The current Prime Minister is around halfway through an average Prime Ministerial term.

The flexibility to call elections at any point means that the political environment is hotly contested. In the main, this leads to policy being subject to significant scrutiny, and a clustering around the middle. Progress tends to be in modest, incremental steps, and usually requires bi-partisan support. Whilst this may provide a degree of frustration at times, amidst the current backdrop of lurching changes the practical predictability is a positive differentiator.

Fig 27 Leadership – Average length of Prime Ministerial terms – Recent terms lengths close to long-run average, but shorter than the 30 years prior to 2007



Source: ABS, Macquarie Research, April 2017

Other aspects of Australia's institutional frameworks contribute to the stability of the political system, and efficient functioning of the economy. Independent institutional arrangements for key roles and authorities have been set down in long-standing legislation. In particular, the Reserve Bank, the Australian Bureau of Statistics, Electoral Commission, and Australian Taxation Office.

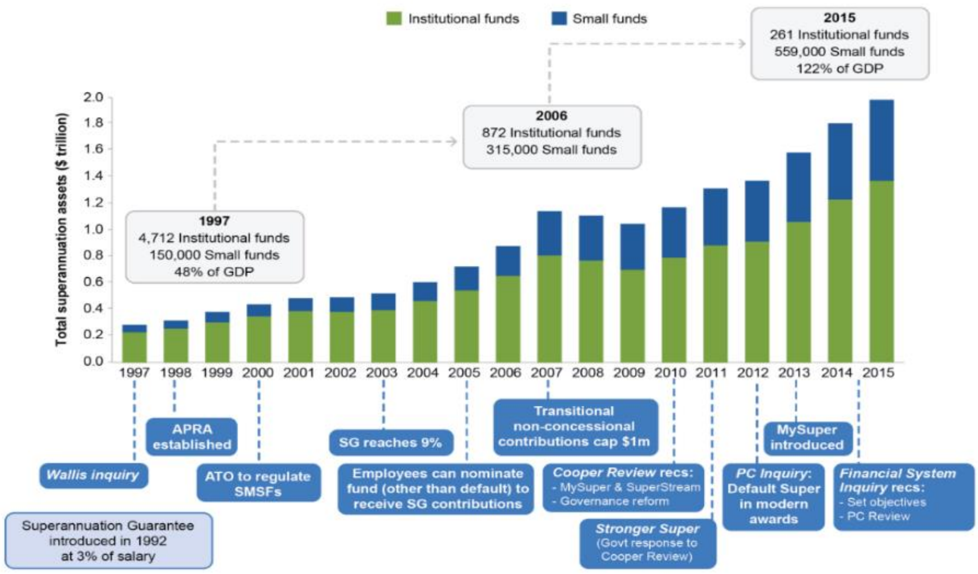
Australia's central bank, the RBA, is independent of Government. And reforms over several decades have established independent and credible prudential regulators, corporate and other law enforcement bodies, and anti-corruption oversight bodies. According to the World Bank's Worldwide Governance Indicators, Australia ranks 11th out of 215 nations in terms of control of corruption. And is in the top 20 for government effectiveness, rule of law, and regulatory quality.

The effectiveness and quality of Australia's institutions, political and governance systems is also reflected in the outsized contributions Australia makes to global governance organisations, including the UN, IMF, World Bank, G20, APEC and ASEAN forums, amongst others.

3. Asset rich with a strong super scheme

Compulsory employer superannuation was introduced in the Australian market in 1992 under the Labor Government as part of a tripartite agreement between the government, employers and the trade unions. The system was a forward looking initiative aimed to combat an ageing population and potential shortfalls in government funded pensions for the elderly. The industry is still in its infancy in the context of many traditional industries and below summarises the key developments in the Australian industry thus far.

Fig 28 Key developments in the Superannuation system



Source: Productivity Commission 2016, Superannuation Efficiency and Competitiveness: Issues Paper, 2016

Australia punches well above its weight in a global context. According to the latest figures from the OECD[2], Australia has the fourth-largest pool of private pension investments in the world behind the USA, Great Britain and Canada. This compares to Australia's weight in the S&P BMI World index of 2.4%, which is only the ninth-largest country.

The outlook for the domestic industry is optimistic with projections underpinned by a commitment of further increases in the compulsory super guarantee rate. The 2014 Federal Budget stated the minimum contribution would remain at 9.5% for 7 years until 30 June 2021, and then increase by 0.5% each following year until the rate reached 12%, on 1 July 2025. According to most recently available statistics from The Association of Superannuation Funds of Australia (ASFA), this would see the current, $2,199 billion of assets increase to anywhere between $8,600 billion and $10,500 billion by 2040.

[2] Pension Markets in Focus No.12, 2016, OECD

Fig 29 Projected superannuation assets (A$bn)

Year	Consensus private sector forecast ($ billion)	Treasury 2008 asset forecasts ($billion)	Treasury 2010 asset forecasts ($billion)	Treasury 2010 forecasts total assets % of GDP and (% of ASX)
2020	3,100 - 3,500	2,815		
2025	3,500 - 5,000	3,830	3,200	120% (73%)
2030		5,075		
2035	6,100 - 9,500	6,650		
2040	10,500	8,645		130%

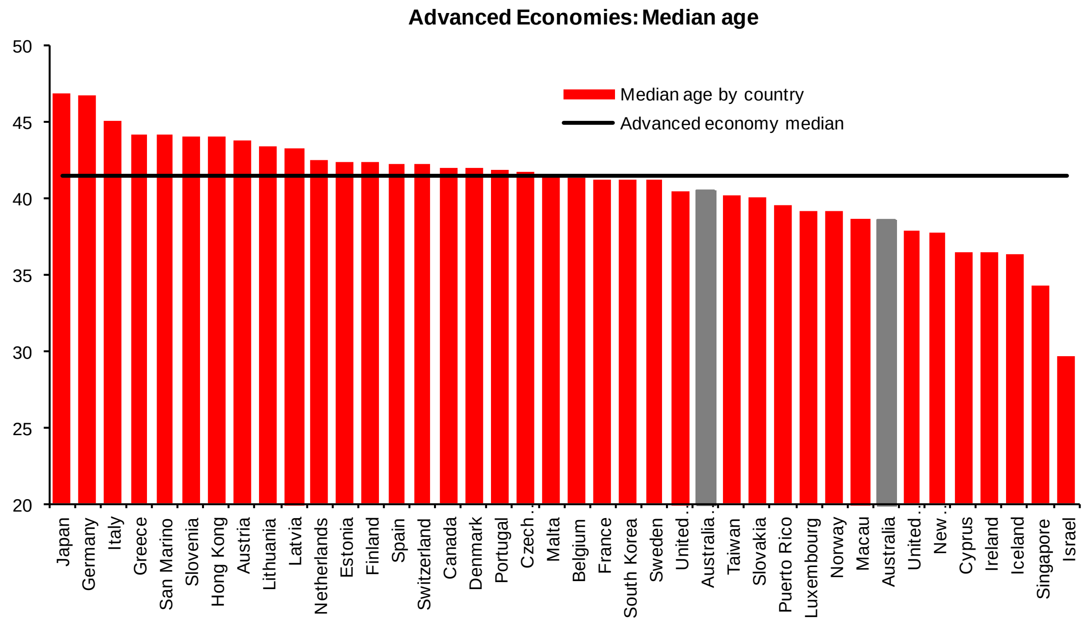
Source: ASFA, April 2017

With this backdrop Australia is well positioned to be a source of innovation for the global asset management industry. Our geographic ties with Asia also are supportive given the expected growth in coming decades. We believe Australia's strong governance and benign political environment positions the country well to be a leader for industry across the region.

4. Demographics – young, renewing

Australia, relative to other advanced economies, is a young nation. Initial results from Australia's 2016 census put Australia's median age at 38 years old. The average age of Australia's population is projected by the ABS to rise to 40.5 years in 2040, which is about as 'old' as the UK is today.

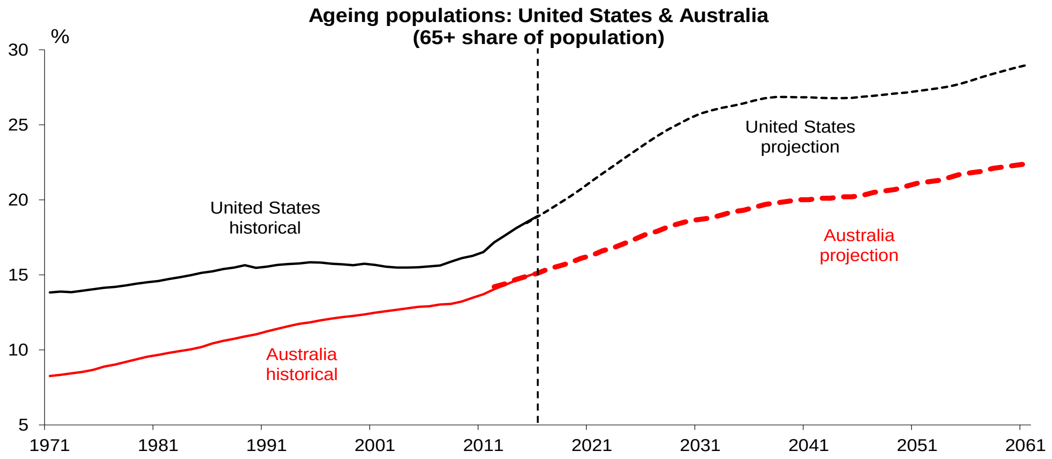
Fig 30 Advanced economics – Median age – Australia not immune to ageing, but insulated



Source: CIA World Factbook, ABS, Macquarie Research, April 2017

Australia's migration program is a key driver of both Australia's young population, and projected gradual ageing profile relative to other advanced economies. The median age of migrants arriving in Australia is ~27 years old, almost more than 10 years younger than the median age of existing residents. This 'refreshing' of the population results in Australia's dependency ratio rising at a much more gradual pace than other advanced economies, which are set to experience more pronounced increases as the baby boomer generation enters retirement.

Fig 31 Younger for longer - aged population burden to rise at a more modest pace than other advanced economies



Source: ABS, US Census Bureau, Macquarie Research, April 2017

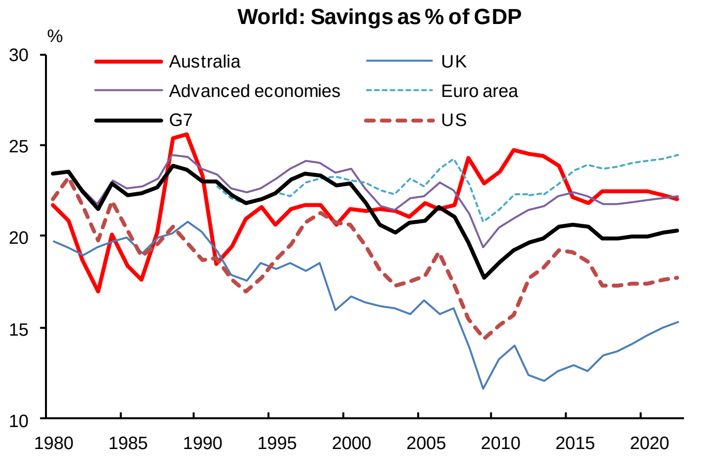
Disadvantages

1. Australia's reliance on global capital

Australia is an importer of global capital, and has been reliant on capital (as well as labour) inflows over the past 225+ years. On a relative basis, Australia's savings rate is comparable to advanced economy peers.

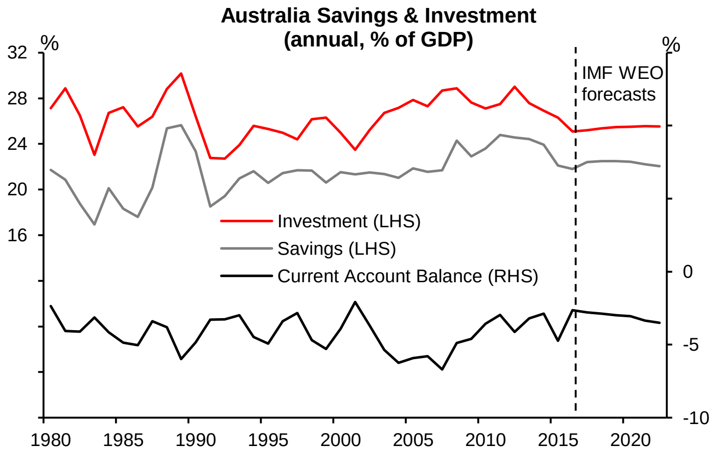
The source of Australia's capital deficit is a higher rate of investment. This, in part, reflects a combination of a capital intensive mining sector and the investments required to manage strong population growth.

Fig 32 Australia's savings rate is around the advanced economy average



Source: IMF, Macquarie Research, April 2017

Fig 33 A high level of investment is the driver of Australia's current account deficit



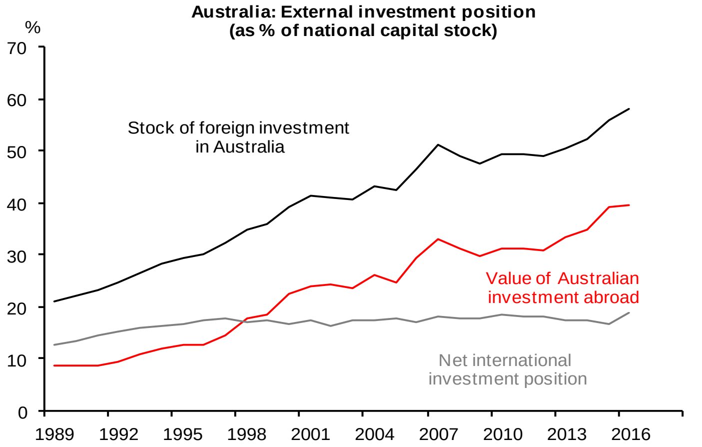
Source: IMF, Macquarie Research, April 2017

Despite the reliance on global capital inflows, foreign ownership (Australia's net international investment position) of Australia's capital stock stands at roughly 60%. The increasing diversification of Australia's pension savings pool (superannuation) has seen an increase in Australian investment abroad. On a net basis, Australia's net international investment position stands below 20% of Australia's capital stock.

Regardless of the driver - inadequate savings vs. excess investment - as a capital importer, Australia is vulnerable to shifts in the supply or competition for global capital, and changes in costs.

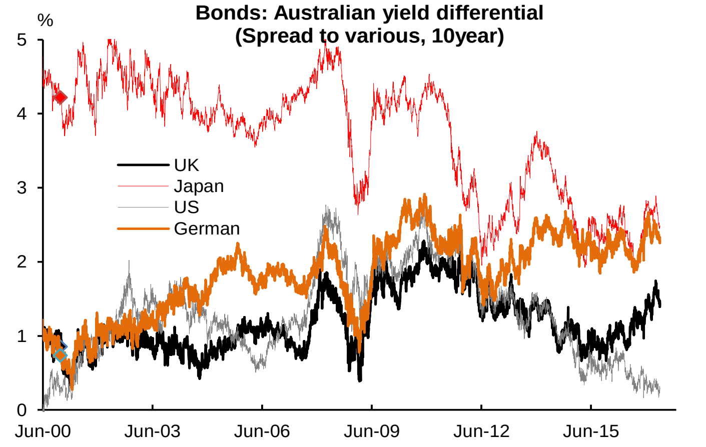
The transmission channels through the economy are the level of investment activity, and on the domestic cost of capital (including, ultimately, monetary policy). Although Australians are formidable digital adaptors and adopters, internet infrastructure is relatively weak, with average internet speeds steadily declining in world rankings.

Fig 34 Australia's rising outbound investment provides a stabilising buffer for the economy



Source: ABS, Macquarie Research, April 2017

Fig 35 Australia's bond yields offer a premium against most global yields, in addition to a premium rating



Source: Bloomberg, Macquarie Research, April 2017

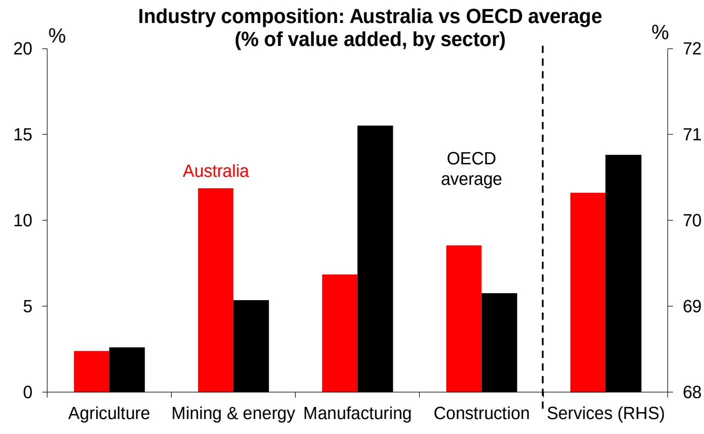
2. Economically less diverse

Australia's economic endowments, policy mix and strong migration profile are all drivers that shape the mix of economic activity across the economy. Relative to the OECD average, Australia's services sector is broadly on par as a share of GDP.

Where the economy differs to developed economy peers is to have a smaller manufacturing sector, and larger mining and construction shares of GDP.

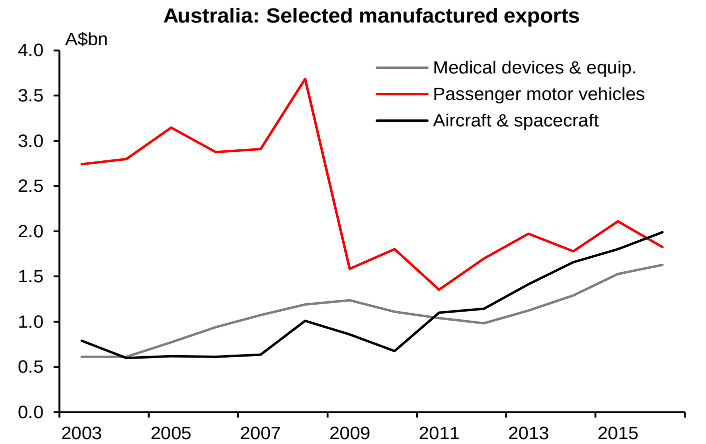
Australia's diversity also extends to customer bases. Over the past 200 years Australia has shifted its dominant trading relationship from the UK, to the US, to Japan, and now China. Significant investment relationships have followed, with the UK and US Australia's major sources of foreign capital, followed by Japan.

Fig 36 Industry composition – outsized mining & construction sector



Source: OECD, Macquarie Research, April 2017

Fig 37 High skilled niche exports filling the gap left behind by automatic assembly closures



Source: ABS, Macquarie Research, April 2017

Over the past few years, the economy has become somewhat hollowed out, with reductions in manufacturing capacity in the automotive sector, oil refining, chemical and other production. At the same time, other high-end niche manufacturing has expanded, reliant on specific design skills and expertise (aerospace, materials composites and medical devices). Annual exports of these higher-end products have risen rapidly over the past decade.

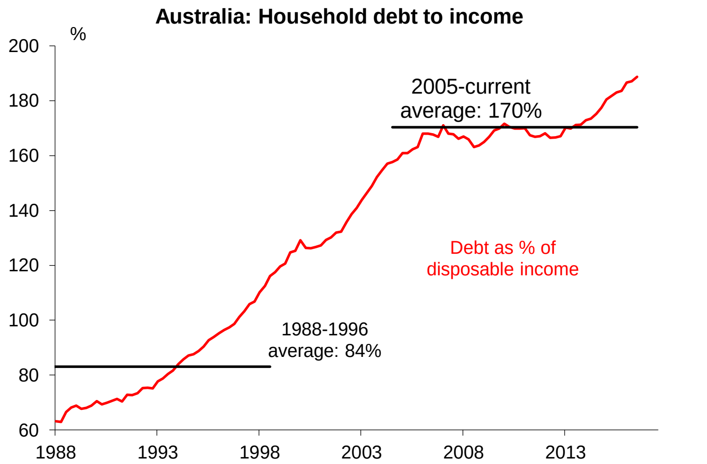
3. Indebted consumer

While Australia's economy averted recession through the global financial crisis, the subsequent policy mix (fiscal consolidation, monetary accommodation) has spurred on a continued expansion of household balance sheets. The RBA has successfully fostered a large enough boost to household demand to contain downside risks from the downswing in income and investment from the 1 in 150-year mining boom. But doing so has come at the expense increasing the household sector's vulnerability to shocks through an increased debt burden. Economic stability has come with a trade-off of increased financial fragility.

With Australia's household debt to income ratio pushing up to ~185%, the RBA's policy options are somewhat constrained – in both directions. A further tightening of macro prudential policy tools has been announced by APRA, the prudential regulator. Some additional tweaks are likely to follow over coming months, which could ease some of the pressures in east coast housing markets. However, if successful these measures will slow household wealth gains, at a time when income growth is muted.

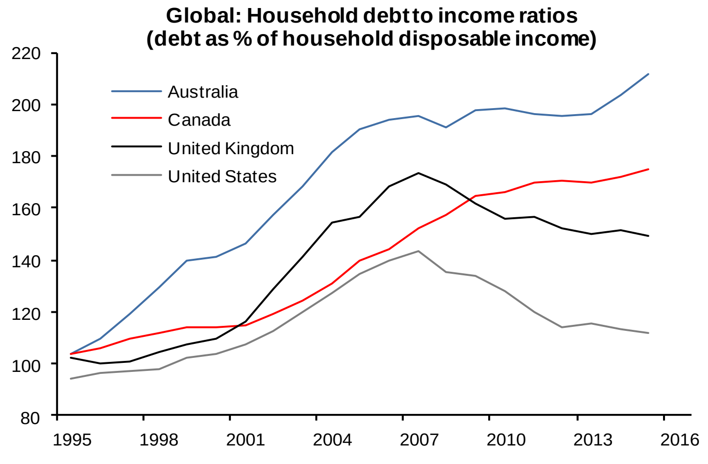
If successful, macro prudential measures and out of cycle rate rises from mortgage lenders could provide the RBA with additional scope to cut rates. But with less scope, and appetite, to drive further increases in household debt burdens, consumers' current debt burdens provide less opportunity for the RBA to speedily normalise rates, and also less opportunity to drive a stimulatory boost in the event of a shock.

Fig 38 Rising household debt to income has been a key component of recent macro stabilisation



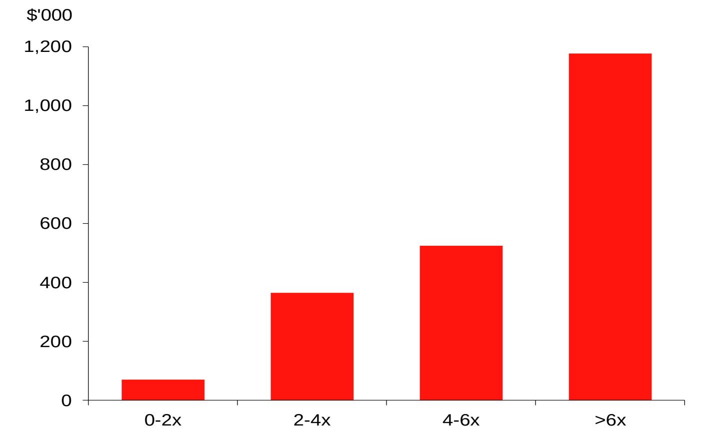
Source: RBA, Macquarie Research, April 2017

Fig 39 Australia's debt burden has risen, while households in other countries have adjusted



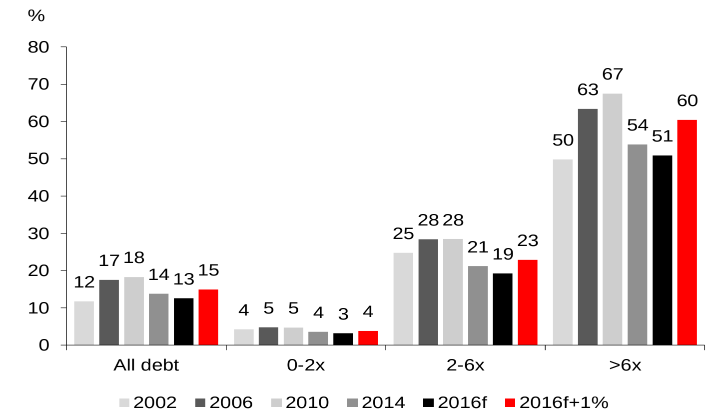
Source: OECD, Macquarie Research, April 2017

Fig 40 Average level of debt per household (split by debt to income)



Source: RBA, Macquarie Research, April 2017

Fig 41 Interest burden by level of indebtedness (split by debt-to-income)



Source: OECD, Macquarie Research, April 2017

Key Sectoral Outlook

Food supply / agriculture

- **Dairy**
  - ⇒ Australia's dairy sector is experiencing significant investment to increase its efficiency and productive capacity. Around 40% of Australia's milk production is exported, with Australia having a 7% share of global dairy trade, with Japan, China, South East Asia and the Middle East key markets.
  - ⇒ Over the next five years, Australia's dairy herd is projected by ABARES to increase 4%, with productivity (Litres per cow) rising a further 4.6%. Total milk production is expected to grow 8.8%. The sector is benefitting from increases in upstream irrigation infrastructure, on farm investments, and downstream manufacturing. This is particularly the case in Tasmania, where the airport is being extended to facilitate expansion of long-range freight flights. Initial direct flights of milk from Tasmania to China have begun, following major Chinese investment in dairy farms.
- **Meat**
  - ⇒ The global protein challenge as Asian middle classes rise is well known. Australia is currently a top-10 world beef supplier; however, production intensity is low in some areas, with potential to boost productivity through investments in farm productivity and management.
  - ⇒ Australia's transport costs pose a challenge to the viability of these investments. Particularly in Australia's vast, largely pastoral, hinterland. According to the CSIRO, with transport distances of over 1000km between production, processing and markets, transport costs can account for up to 40% of the market price[3]. A program of targeted investments that deliver significant cost savings through upgrading underdeveloped transport networks has the potential to boost returns and output.
  - ⇒ As with many parts of Australia's agricultural production, current beef output and industry structure is a function of historical constraints on infrastructure, capital investments and labour availability. Significant output expansions are possible with additional investments in logistics and at the enterprise level.
- **Grains**
  - ⇒ Australia produced a record wheat crop in 2016, with the boost in production adding 0.5ppts to GDP growth. However, the 35Mt harvest (4.7% of global production) was achieved at an average yield of 2.72 tonnes per hectare. Although more than 40% above recent norms, the yield on Australia's record wheat crop was only 80% of the global average yield.
  - ⇒ Increased application of technology in agriculture, and ongoing R&D to boost crop yields as climate variability increases have the potential to boost Australian output – as would increased investment in irrigation and transport infrastructure.
- **Water**
  - ⇒ Whilst Australia is the driest continent on earth (apart from Antarctica), there remain material opportunities to harness water resources to enhance thus far underdeveloped agricultural areas, particularly in the sparsely populated North.
  - ⇒ As part of the focus on the development of Northern Australia, the Northern Australia Land and Water Taskforce has been established, and a $500mn National Water Infrastructure Development Fund has been established and already accepted initial project applications.
  - ⇒ In one example, the North Queensland Irrigated Agriculture Strategy has identified a potential 30,000-50,000 hectares of land that could be supported by investments in farm and in stream dams.
  - ⇒ Additionally, in existing agricultural areas there remains scope for capital depending to lift the efficiency of water use. Investments in Tasmanian irrigation schemes are on track to expand further, and will drive a further boost to on-farm investments in dairy and other crops, supporting downstream manufacturing activities.

[3] https://www.csiro.au/en/Research/LWF/Areas/Landscape-management/Livestock-logistics/TRANSIT

Education Nation – quality, with improved value

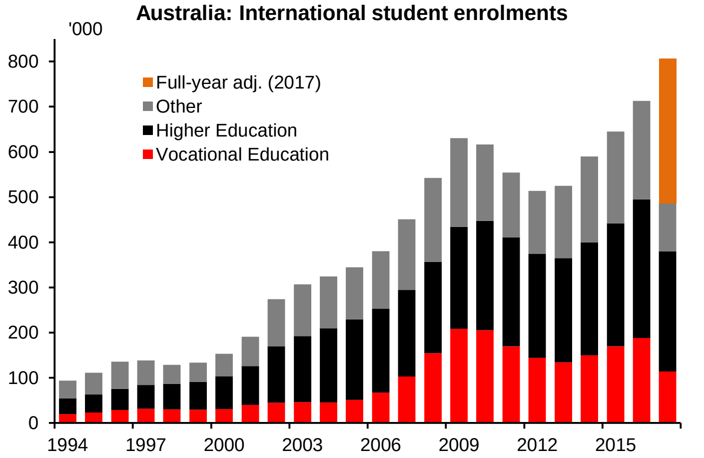
Australia is on track for a record ~805k enrolments in 2017, based on the first batch of international student data. That's a >12% increase on 2016, with the past 5 years showing a CAGR of 9.4%pa.

A key driver of the pickup in Australia's student enrolments over the past few years is the depreciation in the A$. The A$ has depreciated since 2012, the year in which Australia experienced its lowest level of enrolments in 10 years.

In addition to the improved price competitiveness, Australia's relative attractiveness has improved since the middle of 2016. Australia has thus far escaped the rise in populist sentiment that can detract from foreign student experiences, and there has been no change in visa regulations that have restricted opportunities elsewhere.

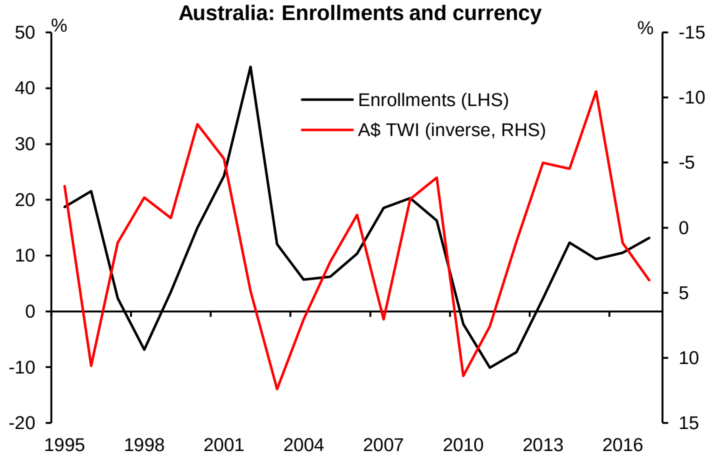
From a quality perspective, the Times Higher Education World University Rankings puts six of Australia's universities in the world Top 100, with the University of Melbourne and the Australian National University included in the Top 50 global institutions.

Fig 42 Int. enrolments on track for new record high



Source: AusTrade, Macquarie Research, April 2017

Fig 43 Currency remains supportive of further growth



Source: AusTrade, RBA, Macquarie Research, April 2017

Destination nation - Tourism

Despite headwinds from a strong currency, over the past decade Australia has continued to see growth in inbound tourism. Tourist arrivals over the decade to December 2016 rose by 4.1% pa. Tourist arrivals in Australia are projected to grow at a CAGR of 5.6% over the coming decade[4]. Much of that growth is driven by tourist flows from China and India.

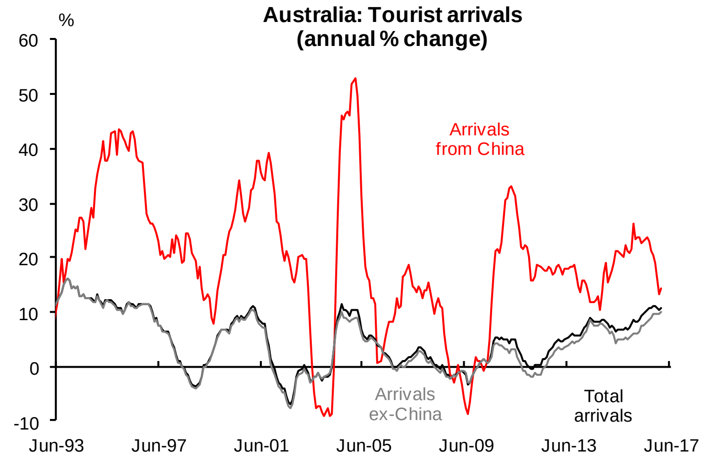
Around 15% of Australia's tourists currently come from China, with 1.2mn short-term arrivals over the past 12 months. If Australia maintains its (relatively low) market share of China's outbound tourists, that figure could rise to almost 5mn annually by 2030.

India and Indonesia are other key markets with strong growth outlooks and expanding middle classes. An additional 1mn in arrivals from these countries over the 10-15 years is possible if Australia maintains its market share of increased outbound tourism flows as respective middle classes grow.

Rising Asian middle classes aren't the only source of future Australian tourism growth. Reductions in travel costs (both in terms of time, expense, and convenience) also augur well for Australia. The 'tyranny of distance' has been a challenge Australia has long faced. Improvements in technology are boosting passenger comfort in the latest generation airliners, whilst at the same time boosting efficiency and reducing fuel costs. Greater safety is also improving way finding, with more efficient routes potentially reducing the time and cost of journeys to Australia – at current speeds.

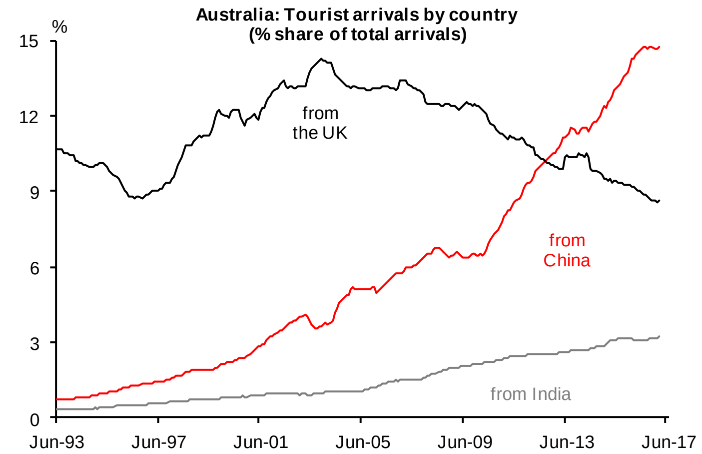
This is the latest evolution of a long running trend. In 1947 the trip from Australia to London took 5-7 stops over three days. In March 2018 a Qantas Dreamliner will do a non-stop trip in 17 hours. A one-stop flight, in greater comfort, from almost anywhere in the world will further boost Australia's attractiveness as a destination.

Fig 44 Strong growth in arrivals from China helping to drive total arrivals



Source: ABS, Macquarie Research, April 2017

Fig 45 Traditional markets being overtaken by emerging Asian middle class



Source: ABS, Macquarie Research, April 2017

[4] Source: Tourism Research Australia, International Visitor Arrivals

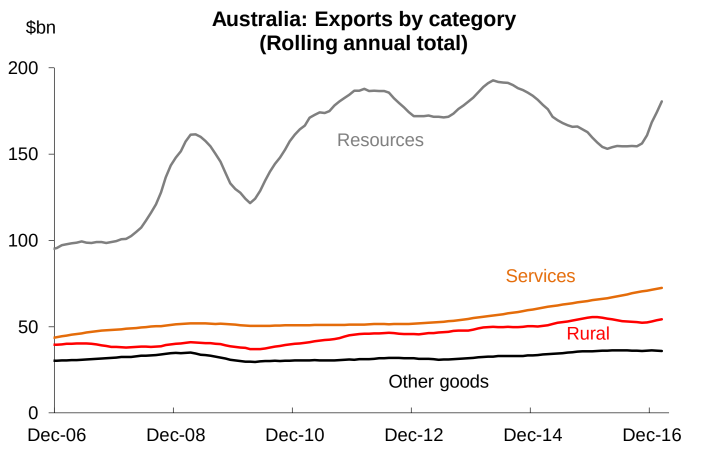
Services – the right ingredients: skilled people, great cities

The next decade is likely to see services account for over 50% of global employment. *Macq-ro Insights – Global Services: A New Economic Order* - http://r.macq.co/_MTA5MjczNg In Australia, the services sector already accounts for 75-80% of employment.

Services are where the world's growth trajectory lies. And Australia's services sector is the largest feature of our economy, and has continued to grow strongly right through the mining boom, anchored by our diverse, highly educated, high quality workforce who reside in our major capital cities that are consistently ranked amongst the most liveable in the world. Australia's services exports (including tourism and education) account for ~21% of our total exports.

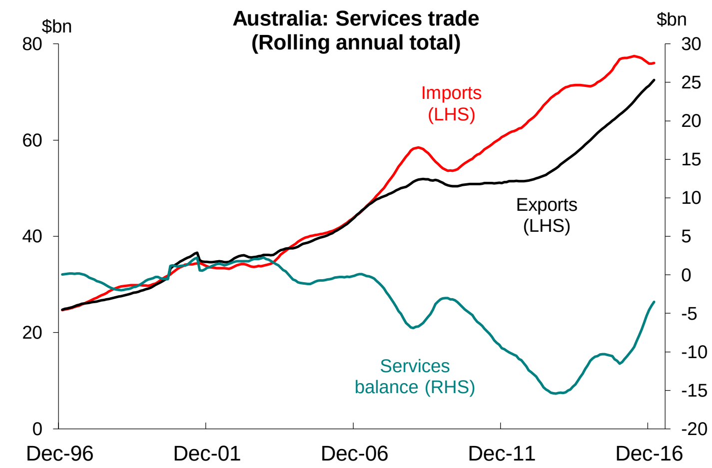
Services are a city business. And Australia is one of the more urbanised countries in the world. Despite our large continent, more than 89% of Australians live in cities (82.4% US, 81.6% Canada, 79.6% UK). Australia has a significant infrastructure investment pipeline underway to further improve the productivity, and safeguard the competitiveness (avoid congestion threat), of those cities. Whilst education and tourism are key services export highlights, Australia is growing its highly skilled services exports in professional services, technology, architecture and design, financial services, infrastructure and property management.

Fig 46 Australia's services exports are more significant than farm exports



Source: ABS, Macquarie Research, April 2017

Fig 47 Services trade balance recovering strongly as currency normalising from peak levels



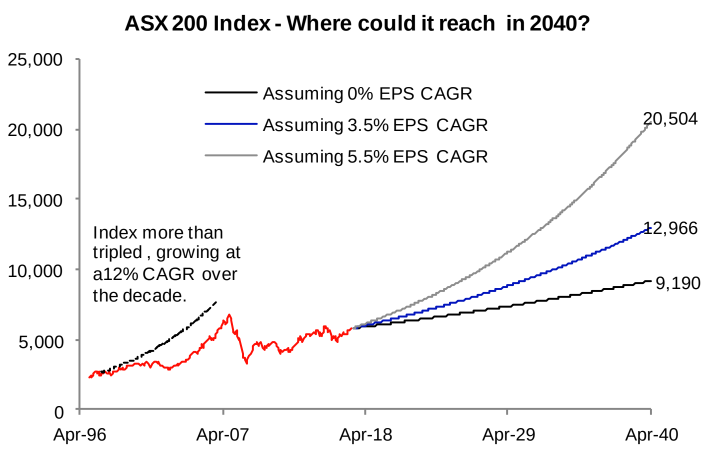
Source: ABS, Macquarie Research, April 2017

Australian Equity Outlook

Australia has had a reasonable track record of returns over the past 20 years (Fig 48). In US$, it has posted average annual total returns of 8.2% (and average annual price returns of 3.9% - see Fig 50). This compares favourably to MSCI World and MSCI Asia, which have delivered average annual total returns of 6.2% and 5.0%, respectively.

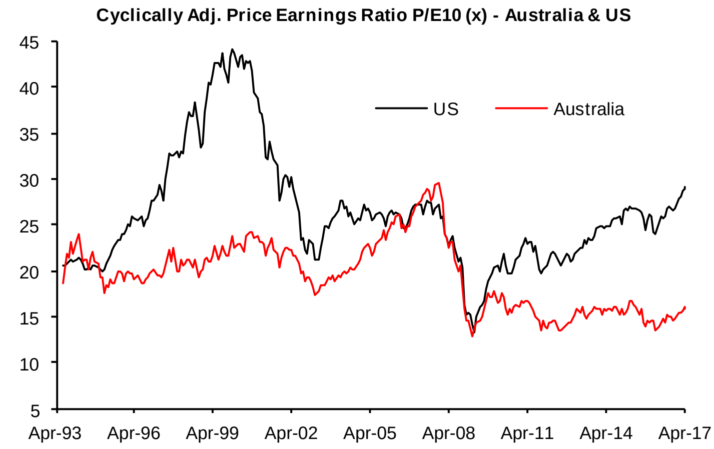
If we were to assume earnings growth of 5.5% and a stable PE multiple, the ASX200 will be around 10,000 in 10 years and will exceed 20,000 by 2040 (Fig 45). We believe this is not unrealistic given a 16x cyclically adjusted PE multiple (vs. a LTA of 19x and US equities at a whopping 29x) (see Fig 49), and in the context of long-term growth for the economy (~5%) and profit share for corporates.

Fig 48 ASX could exceed 20,000pts by 2040



Source: Factset, Macquarie Research, April 2017

Fig 49 Australia not expensive on a CAPE



Factset, Macquarie Research, April 2017

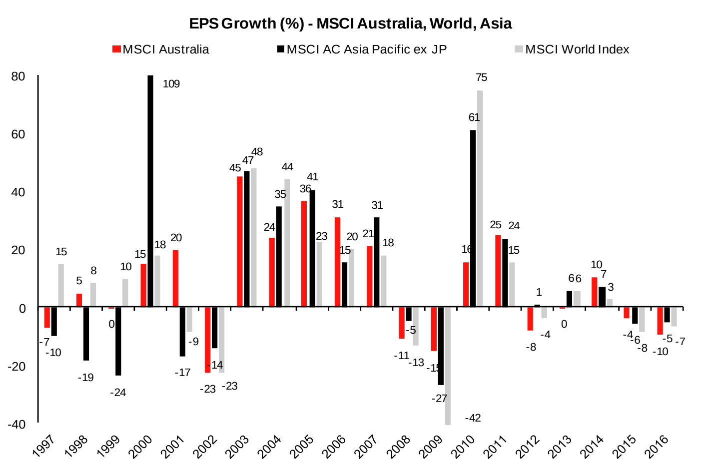
Fig 50 ASX posts avg annual total returns of 8.2%...

LTA Index Returns & EPS Growth: MSCI Australia, World & Asia x Japan				
*LTA numbers **		**Australia**	**Asia**	**World**
Arithmetic				
Price Return (%)	USD	7.0	6.2	5.7
Total Return (%)	USD	11.6	11.5	8.3
Price Return (%)	Local	5.7	5.5	5.7
Total Return (%)	Local	10.1	8.7	8.1
EPS Growth (%)		8.5	12.4	9.7
Geometric				
Price Return (%)	USD	3.9	1.9	3.9
Total Return (%)	USD	8.2	5.0	6.2
Price Return (%)	Local	4.4	2.7	4.0
Total Return (%)	Local	8.7	5.8	6.4
EPS Growth (%)		7.0	8.2	6.8

*where Long Term Average (LTA) is 20 years.

Source: Factset, Macquarie Research, April 2017

Fig 51 …with EPSg in line with developed world

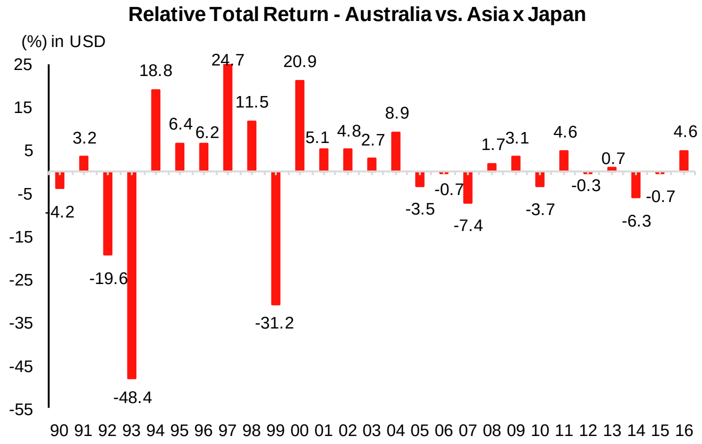


Source: Factset, Macquarie Research, April 2017

We think the market will continue to be underpinned by a strong dividend yield of ~4% with earnings growing roughly in-line with nominal GDP which is at a level which should comfortably exceed most other large developed countries at between 4-5%. This would imply that without further multiple expansion the market is bounded on the downside by an approximate 4% dividend yield but likely to be capped on the upside at around 10-11% as a through the cycle maximum return.

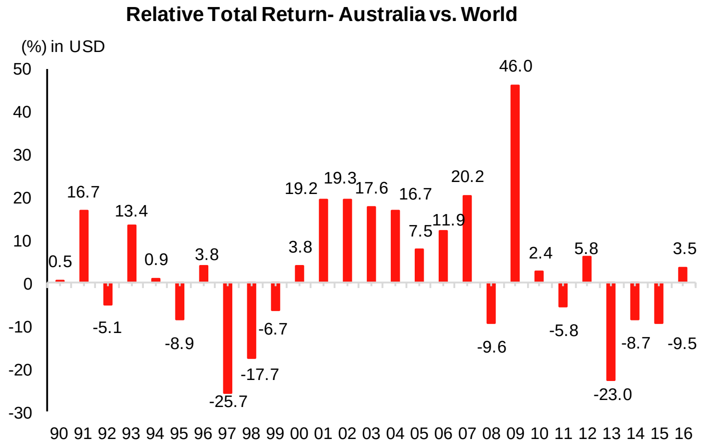
This puts the midpoint return potential for Australia at around 7% which is below the 25-year historic average, but only down in line with the structural shift lower in real growth (~2.5%) and inflation (~2.0%). We consider Australian equities to be ex growth (corresponding with the peak in growth rates for banks around the GFC). However, we don't see this as a major headwind for long-term equity returns.

Fig 52 Total returns in Australia have exceeded those in Asia…



Source: Factset, Macquarie Research, April 2017

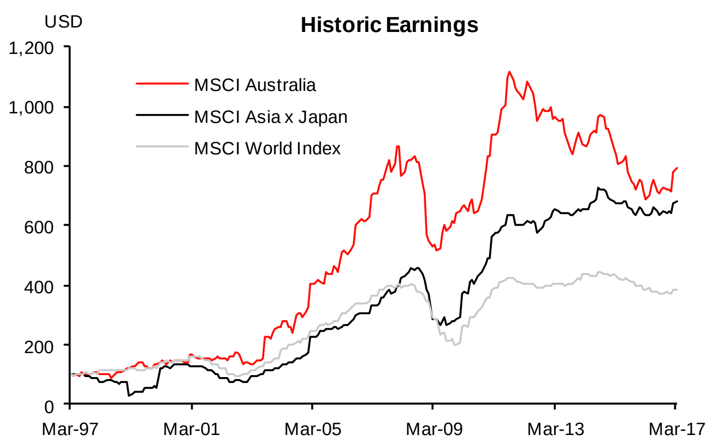
Fig 53 …. and the World Index, by both frequency and magnitude.



Source: Factset, Macquarie Research, April 2017

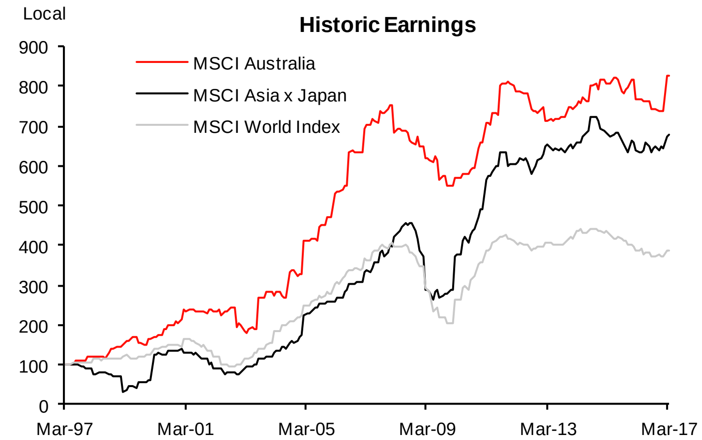
Over the past 10 years we have seen a significant decline in return on capital (from a peak of 18.5% pre GFC to 12.4% in Apr-17), but yet the PE multiple has continued to re-rate (even more significantly ex Financials). This is not a sustainable divergence. We do see some upside potential for RoE's via both a turn higher in leverage which for the market remains relatively low at 50% D/E and for asset turn which should be positively leveraged to stronger sales growth. We don't see much scope for further margin upside given the past decade has been devoted towards taking out costs. Under these assumptions, we think RoEs, which are sitting close to post GFC lows, can potentially rise between 100-200 basis points to give a through the cycle return close to 13%. Based on a P/B of ~2x, this is consistent with a stable P/E of around 16x.

Fig 54 Australia has delivered superior EPSg…



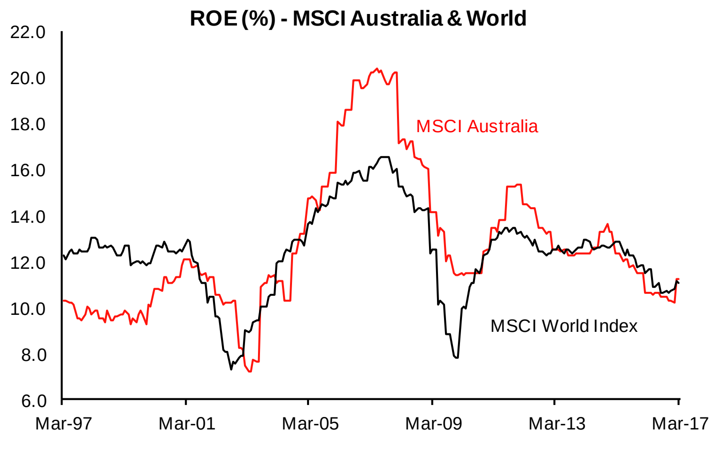
Source: Factset, Macquarie Research, April 2017

Fig 55 …in USD and local currency



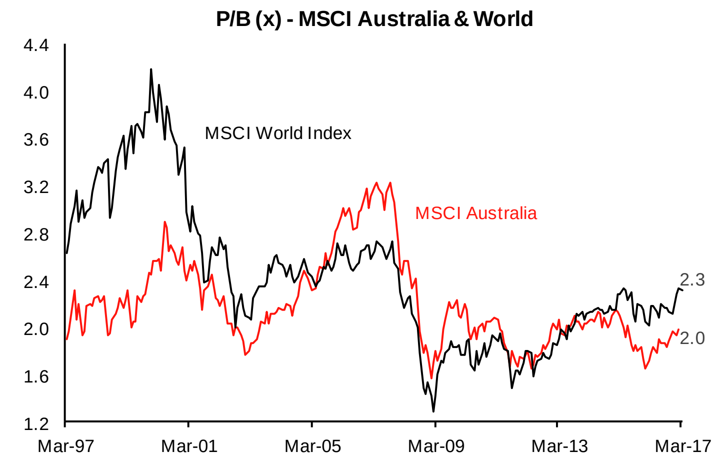
Source: Factset, Macquarie Research, April 2017

Fig 56 Similar ROE trends for Australia vs. World



Source: Factset, Macquarie Research, April 2017

Fig 57 but Australia trading at reasonable P/B discount

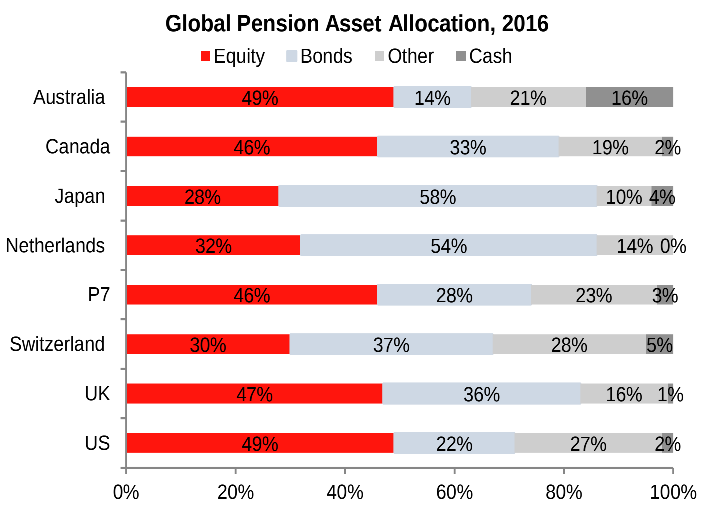


Source: Factset, Macquarie Research, April 2017

We think the Australia superannuation system is potentially one of the most significant underlying supports for domestic equities over the coming decade. The Australian superannuation system is legislated to grow. Total superannuation assets have now hit A$2.2 trillion, posting the second fastest 10 year CAGR of all sovereign super funds at 6.9%.

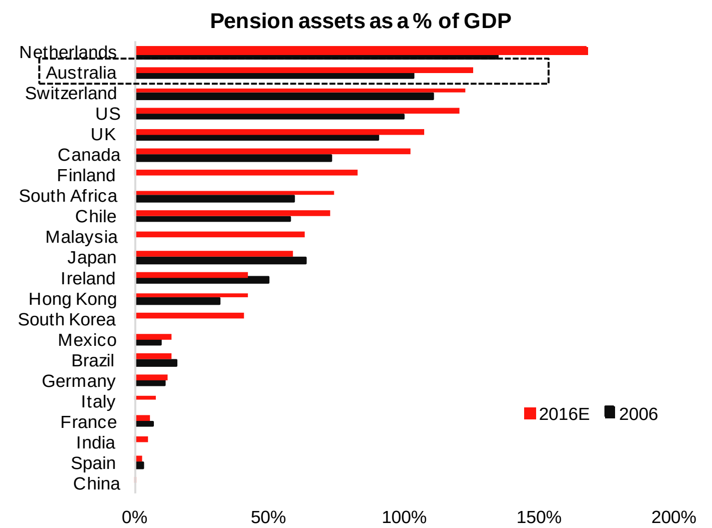
The long trend of growth in superannuation assets relative to GDP has been particularly apparent. The asset pool, which was equivalent to 47% of GDP in 1996, is now equivalent to 126% of GDP (Fig 54). The Association of Superannuation Funds of Australia (ASFA) projects the asset pool to be between A$8,645 - $10,500 trillion by 2040. If we were to grow nominal GDP by 4.5% over this period, then super assets will reach between 170-206% of GDP.

Fig 58 Australia and US have the highest allocations to equities vs. rest P7 markets



Source: Willis Towers Watson, Factset, Macquarie Research, April 2017

Fig 59 Pension Assets/GDP ratio has increased the most in Australia over the last decade, up +44%



Source: Willis Towers Watson, Factset, Macquarie Research, April 2017

Australian superannuation funds have a relatively high exposure to equities and a stronger growth orientation (which is partly driven by young members). Australia is on par with the US, UK and Canada, in the proportion of private pension assets invested in equities (Fig 58) at almost 50% of the asset pool. In addition, there is a strong preference for domestic equities. In fact, Australia (after the US) has the highest home bias in the world, with more than 60% of its total equity exposure allocated to the local market vs. the average global domestic equities allocation of 43%.

We think there are two additional factors that will support a preference for domestic equity allocations:

(i) Higher dividend yields – from an income perspective, Australian shares are more attractive than global shares. The ASX offers a 4.5% yield vs. 2.6% for the MSCI World; and

(ii) Tax incentive - investors can claim deductions on dividends received from Australian companies that have paid tax on their profits.

There are caveats: (i) if the current low interest rate (and volatile super returns) environment persists, retirees may be forced to draw a greater proportion of their savings; and (ii) there is an increasing trend in favour of international assets, which is likely to become more prevalent – the rise in offshore investment reflects investors diversifying their portfolios beyond the limits of the Australian market, which is highly concentrated (accounting for just ~3% of the world market capitalisation).

Fig 60 Australia's total pension assets growing at 6.9% CAGR….

Country	Total assets 2006 (USD billion)	Total assets 2016e (USD billion)	10 year CAGR (USD)
Australia	809	1,583	6.9%
Brazil	177	251	3.6%
Canada	965	1,575	5.0%
Chile	89	172	6.8%
China	-	141	-
Finland	-	199	-
France	158	146	-0.8%
Germany	332	415	2.3%
Hong Kong	62	133	7.8%
India	-	105	-
Ireland	116	130	1.2%
Italy	-	153	-
Japan	2,936	2,808	-0.4%
Malaysia	-	190	-
Mexico	96	154	4.8%
Netherlands	985	1,296	2.8%
South Africa	160	207	2.6%
South Korea	-	575	-
Spain	40	39	-0.1%
Switzerland	479	817	5.5%
UK	2,439	2,868	1.6%
US	13,878	22,480	4.9%
Total	**23,721**	**36,435**	**4.0%**

Source: Willis Towers Watson, Factset, Macquarie Research, April 2017

Fig 61 …. 2nd highest rate, behind HK, and well above global average of 4.0%

	Growth rates to 2016 (USD)		
Country	1 year CAGR	5 year CAGR	10 year CAGR
Australia	1.1%	2.3%	6.9%
Brazil	7.4%	-4.9%	3.6%
Canada	8.5%	3.2%	5.0%
Chile	11.0%	4.8%	6.8%
China	-3.8%	20.3%	-
Finland	0.8%	2.5%	-
France	1.6%	0.8%	-0.8%
Germany	1.8%	-1.5%	2.3%
Hong Kong	3.9%	8.0%	7.8%
India	3.8%	6.2%	-
Ireland	2.8%	6.8%	1.2%
Italy	-0.4%	5.4%	-
Japan	5.1%	-5.4%	0.0%
Malaysia	0.5%	-	-
Mexico	-12.2%	1.6%	4.8%
Netherlands	0.9%	3.8%	2.8%
South Africa	19.6%	-1.2%	2.6%
South Korea	0.8%	12.6%	-
Spain	0.9%	-0.5%	-0.1%
Switzerland	2.9%	4.2%	5.5%
UK	1.3%	2.9%	1.6%
US	5.1%	8.0%	4.9%
Total	**2.9%**	**3.8%**	**3.4%**

Source: Willis Towers Watson, Factset, Macquarie Research, April 2017

We run a simple scenario analysis (Fig 62) to determine what the extent of equity inflows would amount to out through 2040. Our conservative base case is that the 60% allocation in domestic equities normalises to 50% (remaining above the global average). This would have the impact of reducing projected asset growth by ~17% (a ~$500 billion cut to current 2040 domestic equities forecasts).

Fig 62 Bull, Base, Bear case of % of superannuation asset pool invested in domestic equities

	Nominal GDP Growth Forecast	Asset Pool Growth Forecast (%)	Asset Pool Forecast range in 2040 ($bn)	Total Assets % of GDP	% of Asset Pool Invested in Equities	% of Equities invested Domestically in 2040	$bn of Equities invested Domestically in 2040
Bull	4.5%	5.5-7.0%	$8,645 -10,500	170-206%	50%	60%	$2,593 – 3,150
Base	4.5%	5.5-7.0%	$8,645 -10,500	170-206%	50%	50%	$2,161 – 2,625
Bear	4.5%	5.5-7.0%	$8,645 -10,500	170-206%	50%	42.8 % (global average)	$1,850 – 2,247

Source: ASFA, Macquarie Research, April 2017

Australian Asset Management Outlook

Superannuation – a growth engine for Australia

Australia's asset management industry is well positioned to be pioneers of the sector over coming decades. Australia has the fourth-largest pool of private pension investments, and this is forecast (ASFA) to grow from A$2,199 billion to between A$8,600 and A$10,500 billion by 2040.

With this backdrop we see opportunities for Australian business across a range of macro thematics that are playing out:

- **Ageing Demographic**: As the population grows older, innovation will be required to meet changing financial demands. We expect annuity style products, income and lower volatility return streams will continue to emerge. Health Care, Technology and sectors owning hard assets should thrive.
- **Global Asset Allocation**: Given their sheer size the pool of Australian assets will need to look beyond the domestic market for opportunities. As global connectivity improves Australian investment managers will likely increasingly look to manage global portfolios from Australia.
- **Sustainable Investing:** We believe Environmental, Social and Governance (ESG) based investing will be an integral part of investment frameworks going forward. Australian corporates and asset managers have an opportunity to set world standards in the sustainable investment domain.

The Data Revolution

Data is everywhere! In 1992 there was 100 gigabytes of data produced per day. In 2018 this is forecast to be 50 terabytes per day. As the quantity of data continues to grow so too should the opportunities for unique insights. We foresee further rapid expansion of data in coming years and expect data driven decisions to gain prominence.

We explore examples where we have seen data and analytics impact the industry. This is by all means a small list and future applications are only limited by the imagination:

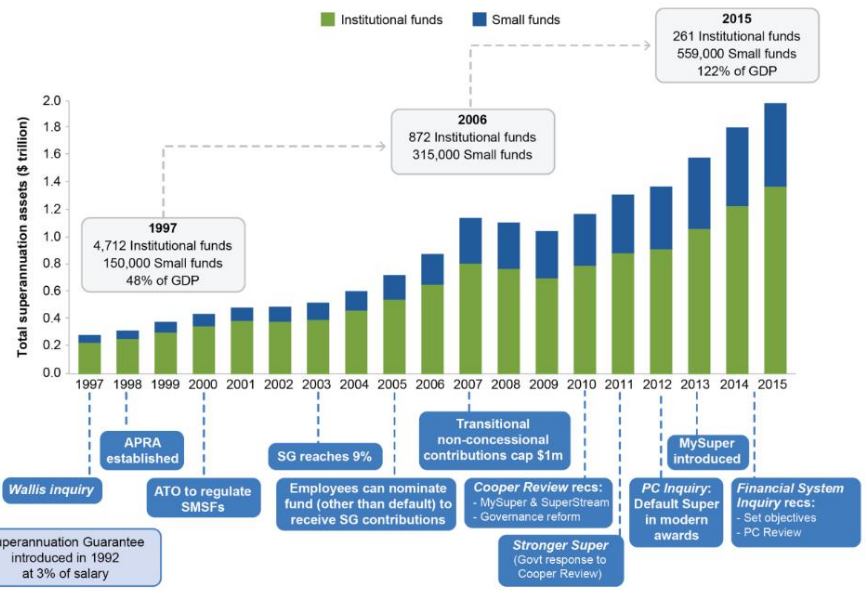
- **Alternative Data sources**: New data sets can offer unique insights to investors. Macquarie's Steel Survey was found to provide an edge for determining steel demand.
- **Understanding the Consumer**: Forecasting has become now-casting as the lag in data disappears. The likes of Google and Financial Institutions have extremely rich datasets on the consumer enabling much more accurate and timelier estimates.
- **Satellite imaging**: Monitoring of remote and hard to reach areas is only limited by the weather as satellite imaging gives insights into mining, agriculture and many other industries.
- **Natural Language processing**: Linguistic analysis on news flow and company releases is increasingly being used to estimate impact on markets.

Those investors that are able to harness the power of data and technology will benefit by standing out from the herd and building an edge.

A growth engine for Australia: Superannuation

Compulsory employer superannuation was introduced in the Australian market in 1992 under the Labor Government as part of a tripartite agreement between the government, employers and the trade unions. The system was a forward looking initiative aimed to combat an ageing population and potential shortfalls in government funded pensions for the elderly. The industry is still in its infancy in the context of many traditional industries and below summarises the key developments in Australia industry thus far.

Fig 63 Key developments in the Superannuation system



Source: Productivity Commission 2016, Superannuation Efficiency and Competitiveness: Issues Paper, 2016

Australia punches well above its weight in a global context. According to the latest figures from the OECD[5], Australia has the fourth-largest pool of private pension investments in the world behind USA, Great Britain and Canada. This compares to Australia's weight in the S&P BMI World index of 2.4% which is only the ninth-largest country.

Fig 64 Australia's private pension assets currently the fourth-largest in the world

Top 10 Countries by Private Pension Investment (USD)

Country	Private pension investments (in USD m.)	Private pension investments (% GDP)	Weight (%) in S&P BMI Global Index
USA	23,854,679	132.9	51.4
GBR	2,690,204	97.4	5.7
CAN	2,248,545	156.9	3.3
AUS	1,511,771	122.2	2.4
JPN	1,326,799	32.0	8.7
NLD	1,317,676	178.4	1.1
CHE	793,201	123.0	2.7
DNK	598,574	205.9	0.5
BRA	411,790	19.2	0.8
SWE	374,146	76.0	1.1
KOR	343,315	25.8	1.8

Source: OECD, S&P, Macquarie Research, April 2017

[5] Pension Markets in Focus No.12, 2016, OECD

The outlook for the domestic industry is optimistic with projections underpinned by a commitment of further increases in the compulsory super guarantee rate. The 2014 Federal Budget stated the minimum contribution would remain at 9.5% for 7 years until 30 June 2021, and then increase by 0.5% each following year until the rate reached 12%, on 1 July 2025. According to most recently available statistics from The Association of Superannuation Funds of Australia (ASFA), this would see the current A$2,199 billion of assets increase to anywhere between $8,600 billion and $10,500 billion by 2040.

Fig 65 Projected superannuation assets (A$)

Year	Consensus private sector forecast ($billion)	Treasury 2008 asset forecasts ($billion)	Treasury 2010 asset forecasts ($billion)	Treasury 2010 forecasts total assets % of GDP and (% of ASX)
2020	3,100 – 3,500	2,815		
2025	3,500 – 5,000	3,830	3,200	120% (73%)
2030		5,075		
2035	6,100 – 9,500	6,650		
2040	10,500	8,645		130%

Source: ASFA, April 2017

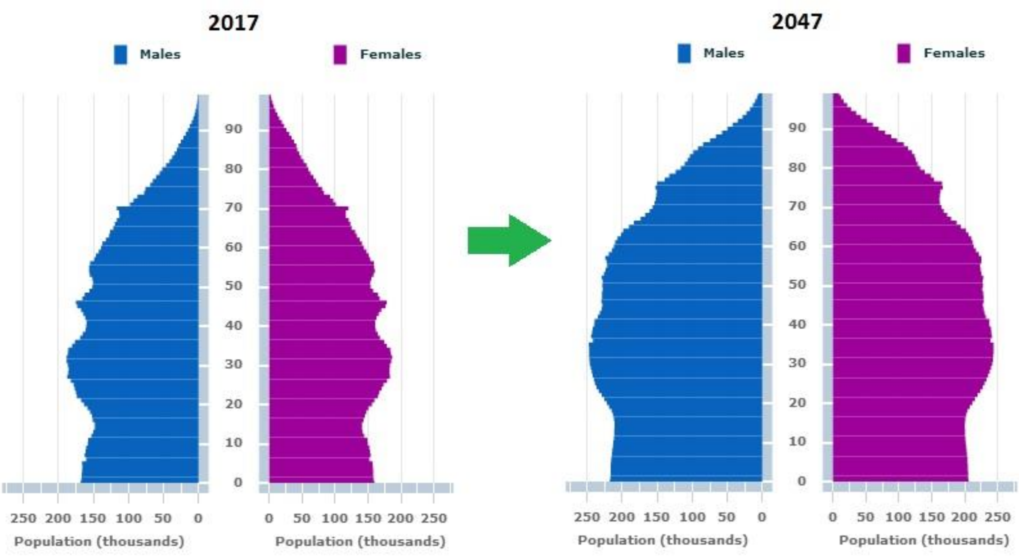
With this backdrop Australia is well positioned to be a source of innovation for the global asset management industry. Our geographic ties with Asia also are supportive given the expected growth in coming decades. We believe Australia's strong governance and benign political environment positions the country well to be a leader for industry across the region.

So where are opportunities for innovation for Australian companies? In financial services and asset management there are a number of thematic trends where Australia has the chance to play a leading role.

Ageing Demographic: Young at heart

Australia's population is older than it has been in the past and the trend is forecast to continue into the future. Fifteen percent of Australians were aged 65 and over in 2014, compared to 8% in 1964. Based on population projections by the Australian Bureau of Statistics, by 2064 there will be 9.6 million people aged 65 and over, and 1.9 million aged 85 and over, constituting 23% and 5% of Australia's projected population respectively. Additive to this the increasing life expectancy of people. This creates a problem when the higher percentage of the population will need to be funded into retirement.

Fig 66 Current and Projected Age distribution for Australia



Source: ABS, April 2017

The possible shortfall in pension assets was a key motivation for superannuation reform in the 1990s. This alone, however, will not be enough, in our view. There is a large opportunity for investment professionals to build and structure new products to meet the demands of the ageing population. One example we've seen is the recent increase in annuity-style products. Led by Challenger (CGF) these products have experienced significant growth and are expected to continue to do so. We see significant room for innovation in this space. As an example, as more and more data on individuals become available (we talk about this later in the report) the ability to offer more tailored products increases substantially.

As individuals move from full- or part-time employment to retirement demand from their investments shifts. Retired investors will typically favour income-producing assets to fund their retirement. Tax awareness will also be critical for these investors who are typically in a lower tax bracket. This creates opportunities for product innovation. We would expect more yield driven product with a focus on lower volatility to be demanded by the market.

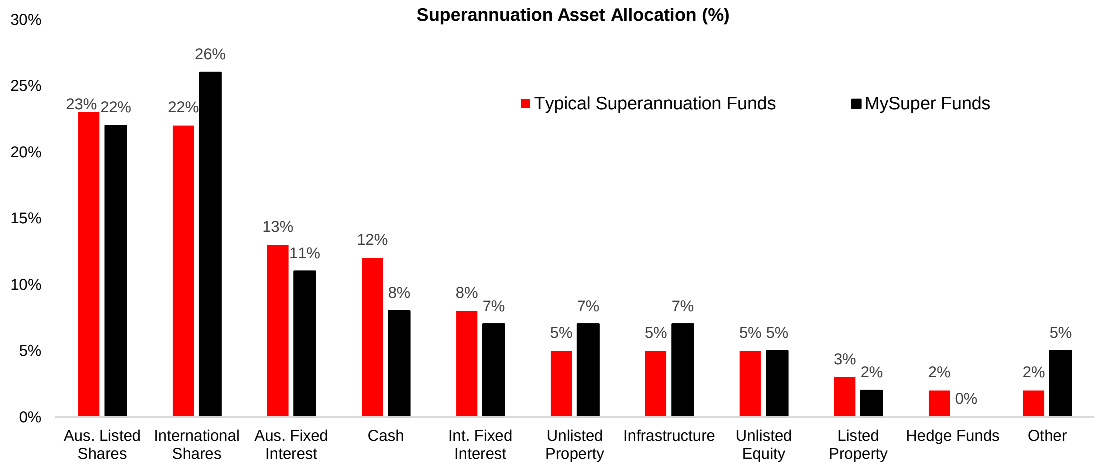
At a sector level Health Care providers are an obvious beneficiary of an ageing demographic. Technology firms that are able to provide solutions across industries and improve productivity should also thrive. All industries will continue to be driven by the economic cycles however high yielding, more predictable industries such as Utilities and Real Estate should see their equity in demand by an ageing population.

Going Global: We are the world

Australian investors typically have a strong 'Home Bias', meaning a large proportion of their investments are in Australian assets.

We saw earlier that the size of the Australian superannuation pool relative to global peers is larger than Australia's relative market capitalisation. We believe the growth rate in the superannuation assets is going to be faster than the growth in the Australian listed equity market. This creates an issue where many potential investments (in the listed space) are too small for the funds who need to invest in them. In listed equities, funds will need to seek further exposure to international companies.

Fig 67 Australian shares are a large portion of Superannuation Asset Allocation



Source: APRA, Macquarie Research, December 2016

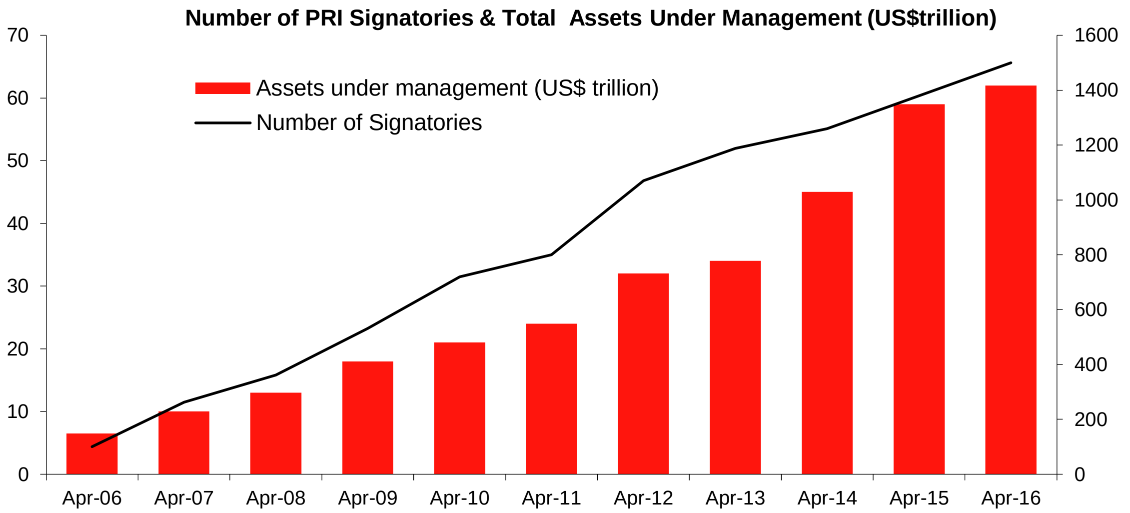
The recent success of listed fund managers Magellan (MFG) and Platinum (PTM) should motivate other investment managers to seek opportunities to manage global portfolios from Australia. This doesn't come without challenges, however improved global connectivity and market transparency makes global management out of Australia a more realistic option. Given Australia's geographic positioning we particularly foresee opportunities in the Asian markets where we are likely to have a greater competitive advantage over global peers.

Sustainable investing: Where do the children play?

The most recent benchmarking report of 2016 by the Responsible Investment Association Australasia (RIAA) finds that $633 billion of investment assets in Australia apply some form of ESG integration and engagement. This represents 47% of those assets professionally managed in Australia and is a notable increase from the $13.9 billion of ESG managed assets reported in the first public RIAA survey in 2002.

A key growth driver of ESG investment approaches in Australia has been leadership from the superannuation industry, as demonstrated by Australian Supers contributing 26% of the top 50 leaders on ESG (as rated by the Asset Owners Disclosure Project's 500 Global Index of Asset Owners). This is in the context of the predicted growth in superannuation fund assets in Australia and similar ESG growth trends being in evidence internationally, with the UN-sponsored Principle for Responsible Investment (PRI) reporting 1,500 signatories from over 50 countries with c. US$60 trillion in assets under management.

Fig 68 Number of PRI signatories and total asset under management (US$ tn)



Source: PRI, Macquarie Research, 2017

These trends are supported by current economic realities, with the recent World Economic Forum's 2017 Global Risks Report highlighting six ESG-related risks in the top 10 of the most likely current impacts. The integration of ESG factors is increasingly mainstream and set to grow. In turn, it is becoming part of the efficient allocation of capital and fundamental price formation, and will be increasingly critical for listed companies competing for international capital.

Fig 69 ESG risks rising up World Economic Forum's agenda

Top 10 risks in terms of **Likelihood**	Top 10 risks in terms of **Impact**
1. Large-scale involuntary migration	**1.** Failure of climate-change mitigation and adaptation
2. Extreme weather events	**2.** Weapons of mass destruction
3. Failure of climate-change mitigation and adaptation	**3.** Water crises
4. Interstate conflict	**4.** Large-scale involuntary migration
5. Natural catastrophes	**5.** Energy price shock
6. Failure of national governance	**6.** Biodiversity loss and ecosystem collapse
7. Unemployment or underemployment	**7.** Fiscal crises
8. Data fraud or theft	**8.** Spread of infectious diseases
9. Water crises	**9.** Asset bubble
10. Illicit trade	**10.** Profound social instability

Source: World Economic Forum's 2017 Global Risk Report, 2017

Australian corporates and asset managers have an opportunity to set world standards in the sustainable investment domain.

ESG Value Creation

ESG value creation is the net result of delivering lasting value to the stakeholder on which companies rely to sustain their business model, grow market share and retain their social license to operate.

In 1975, physical and financially accountable assets were the primary balance sheet artefacts. During the last 30 years the nature of value has changed, with intangible assets increasing to more than 50% of the market value of the average listed firm (Source: GIFT 2016, CIMA Report).

The way in which companies are able to utilise intangible resources– such as human, natural or intellectual – to cultivate relationships with key business model stakeholders, is of increasing importance for understanding how companies sustain competitive advantage over the long term.

Institutional investors are increasingly using ESG analysis to assist in their research of the ability of companies to adapt and thrive in the face of these changing pressures. This relates to the ability of companies to adapt to a changing business environment, such as demographic changes, the drivers of human capital, finite natural resources, and other macro trends.

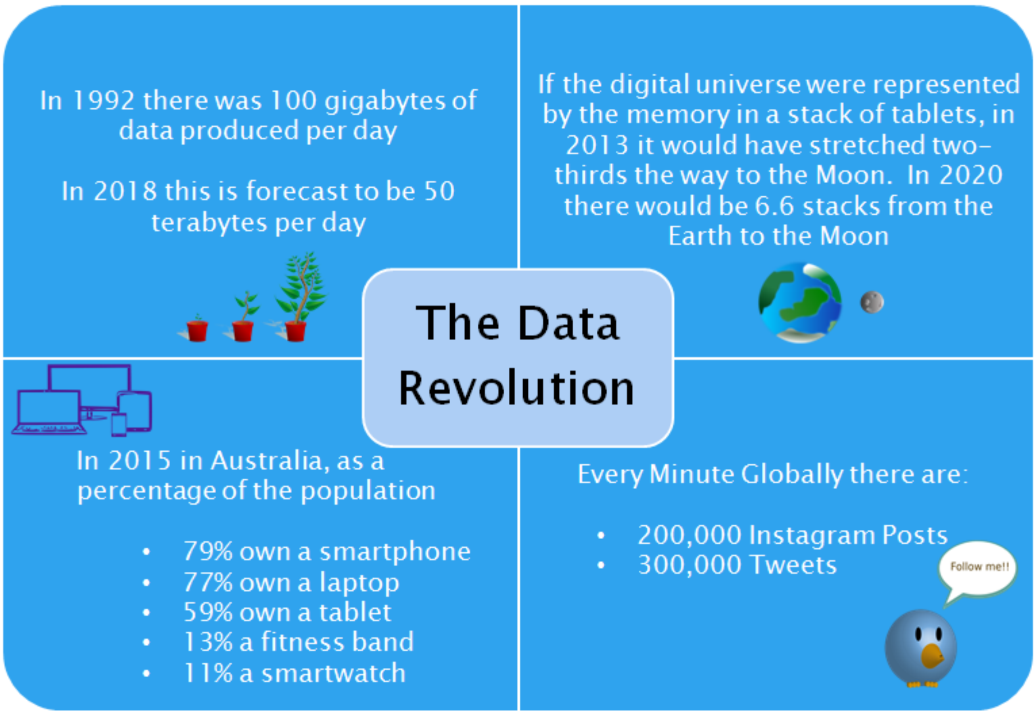
The quality of management in responding to these changes is also a key determinant of ESG value creation: customer loyalty, resilient supply chains, retaining and attracting talent, and strong relationships with other key stakeholders are increasingly important to sustaining and enhancing competitive advantage.

Corporate governance is a critical element of ESG value creation: strong oversight of strategic decisions and capital allocation from a diverse and effective Board, and clear alignment of management and shareholders' interests, can lead to significant value creation.

The Data Revolution: Asset Management 2.0

In a 2012 the Harvard Business Review described Data Scientist as the Sexiest Job of the 21st Century. A deluge of new data has become available in virtually every industry. An entire new breed of workers is required to firstly collect and organise this data and then also analyse the data to gain insights.

Fig 70 The deluge of data is only getting bigger!



Source: EMC2, Macquarie Research, April 2017

As the quantity of data continues to grow, so too should the opportunities for unique insights. Some Australian corporates have embraced the data revolution, however there are many who have been slow adopters. We foresee the continued rapid expansion in coming years, and we expect data-driven decisions to gain prominence.

For investors there is a clear opportunity to unearth an extra insight and find an edge over their competition. This will be increasingly important given the commoditisation of more traditional investment strategies we discussed earlier.

Potential applications:

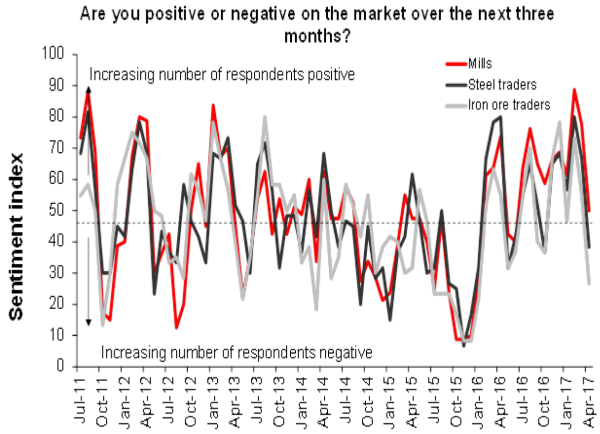
We discus some example applications where we have seen and continue to see opportunities for innovation. This is by all means only a small list and future applications are only limited by the imagination.

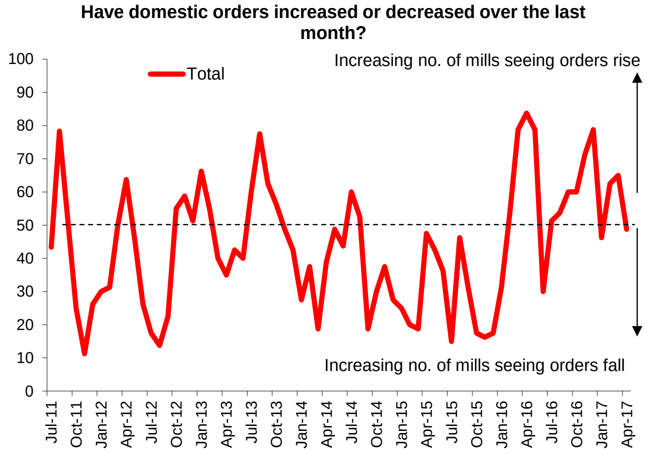
Alternative data

New data sets that can offer insights to investors will become increasingly valuable. Macquarie's research team have begun aggregating these datasets under the banner of 'Macquarie IP' and are constantly looking out for new areas of interest.

The value of one such dataset, our Steel Survey, was highlighted in a recent report. By manually surveying a sample of Steel producers on their activity levels and outlook for markets, the commodities team are able to provide a more accurate forecast for prices.

Fig 71 Macquarie's Steel Survey gives a unique insight into Steel production





Source: Macquarie Research, April 2017

There are countless examples of these datasets. In an interesting academic study[6], the researcher utilised a dataset of over 14.5 million customer product reviews on Amazon.com from 2004 through 2015. He found evidence that consumer opinions contain information for stock pricing with the stocks with high customer ratings outperforming those with low customer ratings.

The Consumer: Credit Cards, Receipts, Mobile phones

Consumers are core to the economy and information on spending habits and behaviour is exploding. Bank statements and credit card transactions will give insights into consumer confidence and other economic indicators. Forecasting has become Now-casting as the lag in data disappears. The likes of Google have extremely rich datasets enabling much more accurate and timelier estimates.

Investors can utilise this concept across multiple areas. For example, analysts can look to get a faster read on Christmas trading for segments of the market based on spending behaviour. Or possibly look at which airlines are winning market share either via pricing or spending.

[6] Huang, Jiekun, The Customer Knows Best: The Investment Value of Consumer Opinions (February 24, 2017). Journal of Financial Economics (JFE), Forthcoming.

Australian retail banks have been analysing spending behaviour of their customers and are able to offer their customer better services through other products. They are also able to advise corporates on appropriate business strategy such as, where to open a new store. These innovations will only increase going forward and all companies should be thinking about what data they now have access to and how it can be used.

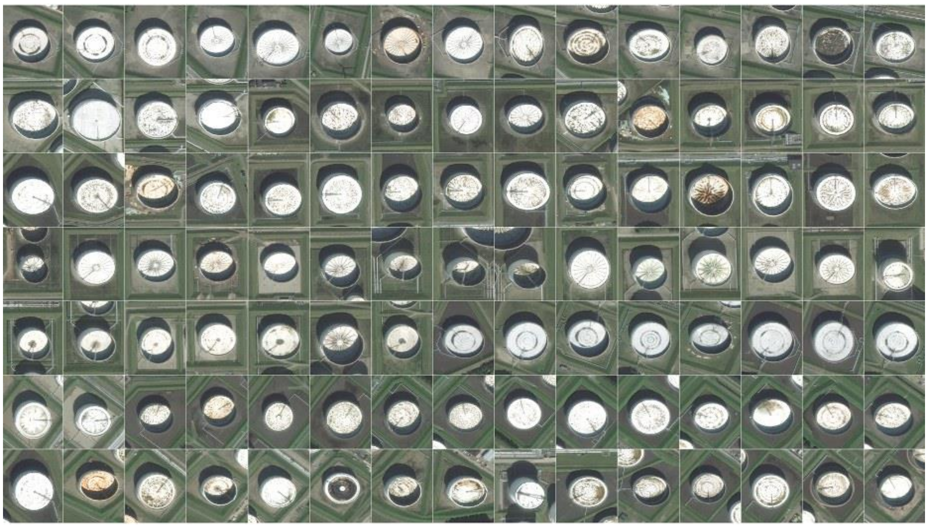
Targeted campaigns gained attention following the recent US elections and Brexit. An individual's social media presence can offer unique insights into the type of person they are, what are their core values and then subsequently, what type of marketing works best for them. Cutting-edge organisations are using this information to achieve better outcomes.

Satellite signals, GPS tracking

At Macquarie's Global Quantitative research conference, we hosted Terra Bella, which is a company pioneering the use of satellites with the aim of addressing economic and environmental challenges across the world. This is achieved through the use of satellite imaging and combining cutting edge technology in computer vision, pattern recognition and machine learning.

In the presentation, Tera Bella showed examples of how one can get real-time data on things such as (1) Vehicle detection of a car import lot in the US, (2) coal mass stockpile in Australia and (3) crude oil inventory in the oil fields of areas such as Iran. In the Iran case study, it was shown that by combining Terra Bella onshore terminal estimates with GPS tracking data of oil tankers, one can obtain a more complete picture of global crude oil storage levels.

Fig 72 Satellite imaging can provide real time analytics on oil supply



Source: Orbital Insight / DigitalGlobe, April 2017

The Australian agriculture industry is also an innovator in the use of technology and analytics to achieve more productive and sustainable farming. This is achieved via instruments such as satellite imagery, variable rate fertilisers, soil sampling and analysis, field-centric weather monitoring and many more. Australia's agriculture sector has a strong opportunity to continue driving innovation for the industry.

Natural Language Processing

Text analytics has gained popularity in recent years and the Macquarie Quantitative research team has done extensive analysis on the possible applications for asset management.

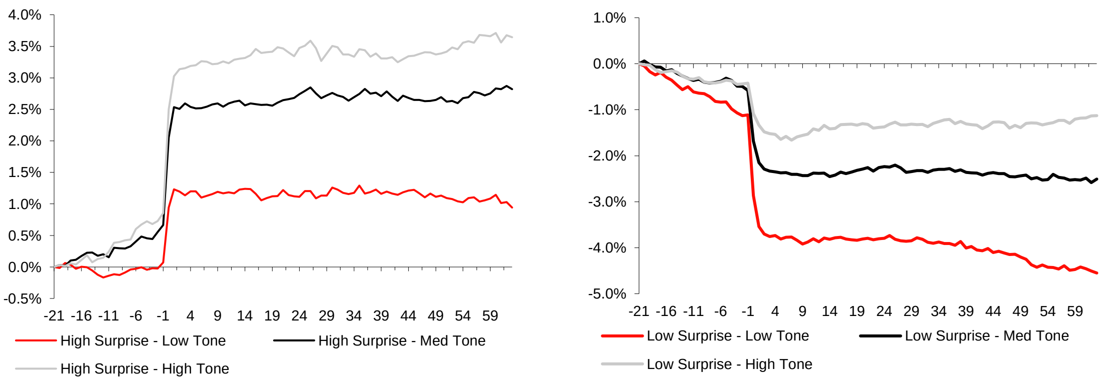
Any news flow or documentation released publically by a company can be instantly assessed and given probability of impact on the market. These algorithms are continuously learning and adapting to changes in behaviour.

In one example[7], the team showed that an investor could forecast whether a positive or negative reaction was likely for a stock following their post earnings announcement conference call based on the tone of the language in the call.

[7] Quantamentals, I just called to say I'm bullish. Macquarie Research, April 2015

Fig 73 Tone of company conference calls can inform the likely market reaction

Excess return of stocks with High (Low) EPS Surprise additionally filtered on change in conference call tone



Source: Macquarie Research, April 2017

New Data, new tools, new skills

Organisations that are able to utilise the deluge of new data stand to benefit greatly however there are a number of challenges in getting to this point… enter the data scientists.

Traditional datasets, especially in finance are often very structured and well defined for a particular purpose. Collecting daily closing prices for global stocks would be an example. New datasets are often completely unstructured, noisy and typically quite narrow.

This requires a different skillset for users to interpret the data and get meaningful insights. It is not just about Volume, Variety and Velocity, but additionally Veracity, Validity and Volatility.

Fig 74 Volume, Variety and Velocity… PLUS Veracity, Validity and Volatility

Volume, Variety and Velocity… PLUS Veracity, Validity and Volatility	
Data Structure	
WAS	**IS NOW**
Structured (time series)	Unstructured
Dense	Sparse
Accurate (reasonably)	Very noisy
Small (few GBs)	Large (dozens of TB's)
Toolkit and Skills	
WAS	**IS NOW**
Run on a Desktop / Laptop	Parallel processing (at scale)
On premise	In the cloud
Flat file / RDBMS (MS SQL, Oracle)	No SQL (MongoDB, Cassandra, Hadoop, Paraquet)
	Spark (distributed computing engine)

Source: Macquarie Research, April 2017

Those companies and investors that can identify, capture and assess these data-based insights stand to benefit over coming decades.

Important disclosures:

Recommendation definitions

Macquarie - Australia/New Zealand
Outperform – return >3% in excess of benchmark return
Neutral – return within 3% of benchmark return
Underperform – return >3% below benchmark return

Benchmark return is determined by long term nominal GDP growth plus 12 month forward market dividend yield

Macquarie – Asia/Europe
Outperform – expected return >+10%
Neutral – expected return from -10% to +10%
Underperform – expected return <-10%

Macquarie – South Africa
Outperform – expected return >+10%
Neutral – expected return from -10% to +10%
Underperform – expected return <-10%

Macquarie - Canada
Outperform – return >5% in excess of benchmark return
Neutral – return within 5% of benchmark return
Underperform – return >5% below benchmark return

Macquarie - USA
Outperform (Buy) – return >5% in excess of Russell 3000 index return
Neutral (Hold) – return within 5% of Russell 3000 index return
Underperform (Sell)– return >5% below Russell 3000 index return

Volatility index definition*

This is calculated from the volatility of historical price movements.

Very high–highest risk – Stock should be expected to move up or down 60–100% in a year – investors should be aware this stock is highly speculative.

High – stock should be expected to move up or down at least 40–60% in a year – investors should be aware this stock could be speculative.

Medium – stock should be expected to move up or down at least 30–40% in a year.

Low–medium – stock should be expected to move up or down at least 25–30% in a year.

Low – stock should be expected to move up or down at least 15–25% in a year.
* Applicable to Asia/Australian/NZ/Canada stocks only

Recommendations – 12 months
Note: Quant recommendations may differ from Fundamental Analyst recommendations

Financial definitions

All "Adjusted" data items have had the following adjustments made:
Added back: goodwill amortisation, provision for catastrophe reserves, IFRS derivatives & hedging, IFRS impairments & IFRS interest expense
Excluded: non recurring items, asset revals, property revals, appraisal value uplift, preference dividends & minority interests

EPS = adjusted net profit / efpowa*
ROA = adjusted ebit / average total assets
ROA Banks/Insurance = adjusted net profit /average total assets
ROE = adjusted net profit / average shareholders funds
Gross cashflow = adjusted net profit + depreciation
*equivalent fully paid ordinary weighted average number of shares

All Reported numbers for Australian/NZ listed stocks are modelled under IFRS (International Financial Reporting Standards).

Recommendation proportions – For quarter ending 31 March 2017

	AU/NZ	Asia	RSA	USA	CA	EUR	
Outperform	47.26%	55.50%	38.46%	45.47%	59.09%	48.21%	(for global coverage by Macquarie, 8.20% of stocks followed are investment banking clients)
Neutral	38.01%	29.31%	42.86%	48.77%	37.88%	36.79%	(for global coverage by Macquarie, 8.25% of stocks followed are investment banking clients)
Underperform	14.73%	15.19%	18.68%	5.76%	3.03%	15.00%	(for global coverage by Macquarie, 8.00% of stocks followed are investment banking clients)

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