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# Full length article Lessons for macroeconomic policy from the Global Financial Crisis

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#### ABSTRACT

This paper proposes lessons for macroeconomic policy stemming from the monetary and fiscal responses to the 2008-09 Global Financial Crisis, with an emphasis on Australia's experience. After canvassing hitherto underemphasised global factors leading up to the crisis, including China's rise and its effect on global saving, external imbalances and world interest rates, the paper critically evaluates the G20's macroeconomic policy response to the crisis and its public debt legacy, especially for advanced economies. It then revisits Australia's GFC performance, highlighting its macroeconomic behaviour at the time and the effectiveness of the monetary and fiscal responses. Lastly, it summarises what the episode implies for any future macroeconomic policy response to a crisis.

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#### 1. Introduction

With the benefit of a decade's hindsight, what lessons should we have learned about the macroeconomic policy response to the 2008–09 Global Financial Crisis? Deemed the most cataclysmic financial event since the Great Depression, Group of Twenty (G20) central banks and governments deployed a range of co-ordinated monetary and fiscal measures to counter the macroeconomic impact of the crisis. Although the GFC buffeted economies worldwide, it affected advanced economies (AEs) more severely than developing and emerging economies (EEs), with AEs subsequently enduring weak economic growth, record low interest rates, anaemic private investment, poor productivity, reduced working hours, sluggish wages growth and high public debt.

Sparked by the collapse of Lehman Brothers bank in September 2008, the GFC sparked further bank failures in the US, Europe and the United Kingdom, shrank asset values, and created havoc in global debt, equity, derivative and foreign exchange markets, reflecting a major loss of investor confidence. Bank credit contracted, stock and commodity prices plummeted and real economies contracted worldwide over the following two years. Although robust banking and financial systems protected many economies including Australia, from the worst effects of the GFC, due to the widespread slump in private investment nearly all economies around the globe experienced a marked slowdown in GDP, reduced working hours and rise in unemployment.

This paper's main aim is to address the question posed at the outset. As background, Section 2 canvasses the underlying causes of the GFC, highlighting the global saving boost stemming from China's rise, external imbalances between the major Asia-Pacific economies, and the low interest rates and easy credit that prevailed in many advanced economies in the years leading up to the crisis. Section 3 then critically evaluates the monetary and fiscal policy responses to the GFC co-ordinated through the G20 that resulted in historically high public debt levels and low interest rates, especially in AEs. Section 4 then recaps the Australian GFC experience, before Section 5 summarises the main lessons that should have been learned for monetary and fiscal policy.

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Global Imbalances, 2000-2006

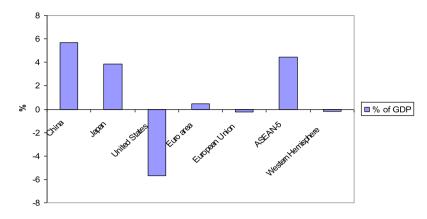


Fig. 1. Global imbalances pre GFC. Source: Based on data from International Monetary Fund, World Economic Outlook; data available at https://www.imf.org.

#### 2. Underlying causes of the GFC

Although centred on Wall Street at its height, the GFC was a culmination of both international and US factors in the lead up. Most US commentary has focused on domestic US factors, to be discussed further shortly, to the neglect of the emergence of historically large external imbalances, most notably between China and the US, due to a surge in global saving (Bernanke, 2005; Makin, 2009) that lowered world interest rates.

#### 2.1. Global imbalances

As Fig. 1 shows, the world's largest current account imbalances in the lead up to the crisis were those of the major Asia-Pacific economies. In particular, the United States experienced sizeable current account deficits matched by surpluses for China, as well as Japan and other East Asian economies. Although smaller than the US deficit relative to GDP, Australia and New Zealand also had notable external deficits at this time.

China's external surplus, overwhelmingly driven by its trade surplus, was the most noteworthy and swelled as its phenomenal economic growth, averaging around ten per cent per annum, outpaced its domestic expenditure growth. Facilitated by an undervalued and tightly pegged exchange rate against the US dollar, China's persistent trade surpluses, along with foreign inward direct investment by multinational firms (such as Motorola, Toshiba, Nokia and LG), enabled the Peoples Bank of China to accumulate foreign exchange reserves exceeding \$US two trillion by 2008, mostly held as US government bonds. See Fig. 2.

The pegged renmimbi was an anchor for China's rudimentary banking and financial system and shielded Chinese export firms from currency risk. Although China did not join the World Trade Organization (WTO) until 2001, it had experienced high export growth in the years prior at levels similar to Japan's and South Korea's during their post-war take off phases. Huge capital outflows from East Asia, the counterpart to the current account surpluses doubled as capital inflows to the US. At over five per cent of US GDP, and at times drawing in around three quarters of traded global saving, this lowered US interest rates and encouraged an imprudent blow out of bank lending for investment in housing. (See Fig. 3.)

How increased global saving driven by China's rise led to global and US interest rates reaching their lowest level for a century can be illustrated with reference to a simple global loanable funds framework. Fig. 4 simply depicts the net supply of world saving and the demand for saving for investment. A surge in global saving shifts the supply schedule to the right pushing US and world interest rates down. Meanwhile, excess US bank credit creation and unsustainable lending for private investment, including for housing, shifts the global demand for funds to the right, mitigating the impact on interest rates.

#### 2.2. Banking system problems

The GFC reflected deep seated problems in the US housing market that ultimately stemmed from public, not private, sector mismanagement involving extensive government interference and guarantees for the US sub-prime mortgage market (Tanzi, 2013; Taylor, 2009, elaborate). Commercial banks had extended too much credit against temporarily inflated asset values, with insufficient attention to borrowers' creditworthiness.

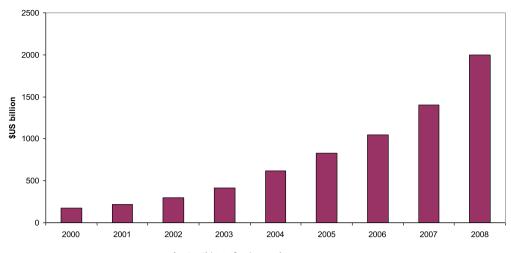
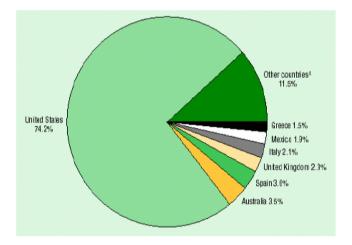


Fig. 2. China's foreign exchange reserves. Source: Based on data from IMF, International Financial Statistics; data available at https://www.imf.org.



**Fig. 3.** Country shares of international capital inflows, 2006. *Source:* Based on data from IMF, *International Financial Statistics*; data available at https://www.imf.org.

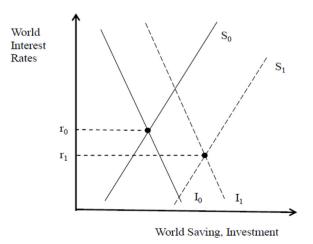
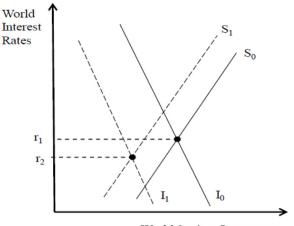


Fig. 4. Global saving, investment and interest rates.



World Saving, Investment

Fig. 5. The global investment collapse and saving.

Hence, weak prudential supervision of financial institutions, lack of transparency about banks' financial products and exposure to non-performing loans contributed to the crisis. What transformed a correction of asset prices into a collapse was the reinforcing panic behaviour of investors selling off financial assets, including securitised mortgages, and liquidating bank deposits. Contagion effects lead to runs on other banks giving rise to the full-blown financial crisis.

As Wall Street was the epicentre of the crisis, the US dollar could have collapsed under such circumstances, yet Asian central banks continued to accumulate US dollar reserves and not re-invest them in US securities, which exacerbated the US liquidity shortage. Paradoxically, while there were plenty of US dollars held outside the US due to the exchange rate policies of external surplus economies, notably in East Asia and the Middle East, there was a shortage of US dollars at home.

The financial panic, collapsed asset prices and a freezing of bank credit led to a slump in real private investment, especially in AEs, with recessions following in most, including in Australia according to several GDP measures (output, income and GDP per capita), as discussed in greater depth shortly. The investment slump and collapse in bank credit, especially in AEs, contributed to a fall in global saving and investment, as depicted in Fig. 5.

Recessions and higher unemployment occurred in most AEs, although many large emerging economies, including China, experienced economic slowdowns rather than recession. As depicted in Fig. 6, the world economy as a whole experienced recession in 2009, with global trade collapsing more sharply than world GDP due mainly to less trade in intermediate investment goods.

#### 3. The macroeconomic policy response

In response to the crisis, governments guaranteed bank deposits and implemented co-ordinated monetary and fiscal expansion via the Group of Twenty (G20). See Spilimbergo et al. (2008). While there has been little disagreement about the co-ordinated monetary response to the crisis, the fiscal response remains highly debatable with respect to its nature and scale. Fearing another Great Depression like that of the 1930s, fiscal stimulus in response to the crisis was justified by The Depression macroeconomics of JM Keynes (1936) which provided the rationale for large fiscal stimulus packages valued by the International Monetary Fund at 2 per cent of world GDP in 2009 and 1.6 per cent in 2010.

Historically large budget deficits ensued, influenced not only by discretionary stimulus measures that increased government spending and cut taxes, but by bank bailouts, notably in the United States and United Kingdom, and significant falls in company, income and indirect tax revenue due to the sharp slowdown in economic activity and higher unemployment. A huge empirical literature has evolved since the GFC gauging the size of fiscal multipliers using a wide range of techniques which have yielded quite mixed results. See for instance, Alesina et al. (2015), Auerbach and Gorodnichenko (2013), Auerbach et al. (2010), Born et al. (2013), Cogan et al. (2013), Guest and Makin (2013), Ilzetzki et al. (2013), and Mountford and Uhlig (2009).

#### 3.1. Comparable historical precedents

Numerous economists have contested the Keynesian view that the New Deal assisted the US recover from the Great Depression. For instance, as argued by Higgs (1997), the policy-induced uncertainty associated with fiscal activism and greater government regulation prolonged The Depression by harming business confidence, thereby deterring private investment and slowing employment growth. The main counter argument to Keynesian pump priming at the time was the so-called UK Treasury View which, in the words of Winston Churchill (1929) concluded that:

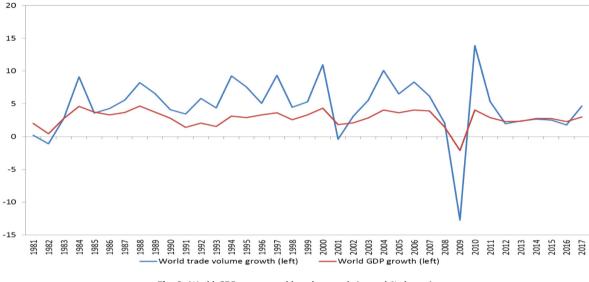


Fig. 6. World GDP versus world trade growth (annual % change). Source: IMF, IFS; data available at https://www.imf.org.

"... whatever might be the political or social advantages, very little additional employment and no permanent additional employment can in fact and as a general rule be created by State borrowing and State expenditure".

Having pursued the opposite course of action throughout The Depression, the US Treasury Secretary Henry Morgenthau observed a decade later that "We are spending more than we have ever spent before and it does not work ... after eight years of this Administration we have just as much unemployment as when we started ... And an enormous debt to boot!"

The macroeconomic policy response to the earlier much neglected 1920–21 US depression is also noteworthy. During this episode there was the largest ever fall in wholesale prices, a one third fall in industrial production, and near halving of the Dow Jones Industrial Average. However, although unemployment shot up, then President Warren Harding responded by balancing the federal budget, while the Federal Reserve raised interest rates. Within eighteen months the 1920–21 depression ended, ushering in the so-called "Roaring Twenties"

More recently, there was no co-ordinated fiscal response to the 1997–98 Asian Crisis. Nor was there an Australian fiscal response to the Asian Crisis, even though over fifty per cent of Australia's two-way trade was with Asian economies. Yet Australia's fiscal response to the North Atlantic crisis was one of the largest in the world as a per cent of GDP, when less than twenty per cent of two-way trade was with that region.

#### 3.2. The G20s fiscal response

Fig. 7 shows how much G20 government budget balances worsened during the crisis episode, with considerably larger deficits run by G20 AEs on average than by G20 EEs which had been in slight surplus before the crisis. The average budget deficits of both advanced and emerging G20 economies remained larger than before the crisis for years afterwards, suggesting the stock of global public debt continued to increase. This sharply elevated public debt sparked the post GFC sovereign debt crisis that afflicted most southern European economies, most notably Greece.

Public debt in AEs post crisis now averages around 105 per cent of GDP, a level not seen since World War 2. Meanwhile, in developing and emerging economies, public debt for some economies is at levels associated in the past with fiscal crises, while many low-income developing economies are currently experiencing debt distress (IMF, 2018). Hence, most G20 economies confront major fiscal challenges, having not experienced public debt levels of the current order for decades. This suggests countries will have to implement more stringent fiscal measures over the medium term to bring debt levels back to historical averages. (See Fig. 8.)

A decade after the GFC, G20 advanced economies have also persistently experienced sub-normal growth, on average at under 2 percent. G20 emerging economies on the other hand recovered relatively quickly. G20 emerging economies, less weighed down by high public debt as fiscal stimulus had been more restrained, grew on average at over 6 per cent. See Fig. 9.

It is an interesting fact that the slowdown in economic growth in AEs was on average over this period twice as bad as that of EEs, at the same time, AEs' budget deficits and public debt levels as a share of GDP were more than twice as high (Makin, 2015a, elaborates).

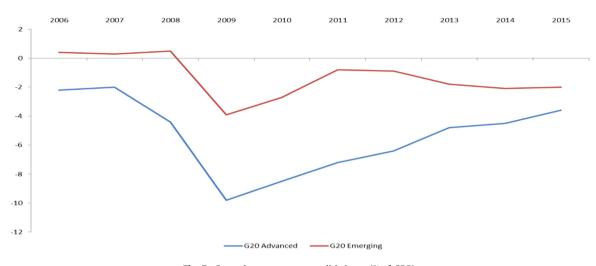
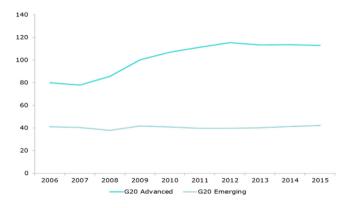
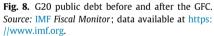
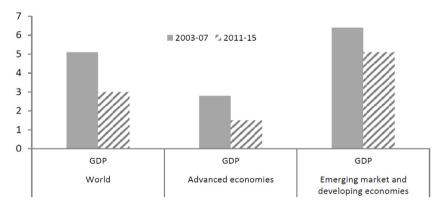


Fig. 7. General government overall balance (% of GDP). Source: IMF Fiscal Monitor; data available at https:// www.imf.org.







**Fig. 9.** World economic growth: before and after the GFC. *Source:* Based on data from International Monetary Fund, *World Economic Outlook*; data available at https://www.imf. org.

#### 4. Problems with basic Keynesian theory

Interest in Keynesian economics had waned in academic and macroeconomic policy circles pre-GFC but was revived by the crisis. The main problems with crude Keynesianism that motivated the fiscal response to the GFC (Makin, 2018) are that it assumes

- (i) economies are closed
- (ii) the quality of government spending is irrelevant
- (iii) the multiplier critically depends on the Keynesian consumption function
- (iv) there are no lags due to recognition, implementation and action
- (v) public debt is irrelevant

Consider these problems in turn. On the first point, significantly higher flows of exports, imports, and capital flows have ensured that economies have become far more interdependent over recent decades. The value of the sum of exports and imports, a measure of economic openness, has more than doubled over recent decades in advanced economies and has been even faster in most emerging economies where international trade growth has been accompanied by strong growth in international capital flows.

Yet, there are no exports, imports, capital flows or exchange rates in Keynes' (1936) model of macroeconomic behaviour. This unrealism invalidates the approach as a way of understanding how individual economies work in today's highly integrated world economy. It is especially misleading as a framework for considering the macroeconomic effects of fiscal policy for small open economies like Australia whose GFC experience is examined in greater depth subsequently.

Regarding the next assumption about government spending, basic Keynesian theory makes no distinction between public consumption and public investment expenditure and ignores that even public investment spending in little used infrastructure may be unproductive (the 'bridges to nowhere' problem). The form of public expenditure deployed by governments is central to interpreting the overall impact of fiscal policy and whether fiscal stimulus is counter-cyclical or pro-cyclical in an open economy.

Increased public consumption by reducing national saving increases the current account deficit, raises external liabilities and can actually reduce national income in the medium term, whereas public investment only raises national income to the extent that its productivity exceeds the effective interest rate payable on foreign borrowing undertaken to fund it (Makin, 2015b, elaborates).

On the third point above, evidence supports Friedman's permanent income theory of consumption which implies household consumption does not rise proportionately with a temporary income increase, as presumed in the simple Keynesian consumption function (Taylor, 2009 provides evidence of this for the United States). Instead, household consumption tends to its permanent level, such that most temporary fiscal related income increases are saved. The Ricardian equivalence propositional (see Barro, 1989; Seater, 1993) also suggests that when faced with higher budget deficits, households, wary of future taxes required to pay off new public debt, will save rather than spend.

If a dollar of new public debt negates a dollar of consumer spending in this way, tax cuts and welfare payments prove ineffective as a stimulus measure, in the sense that there is no extra private consumption spending. Therefore, if the private sector reacts to fiscal stimulus measures by saving more, the size of the fiscal multiplier is diminished, rendering any stimulus relatively ineffective. A full offset in the long run implies a zero fiscal multiplier. Australian saving data provide evidence of private saving strongly offsetting changes in public saving over recent decades. Makin and Narayan (2011), for instance, suggests the public–private saving offset coefficient for Australia for the period 1980 to 2008 was between 0.75 to near unity.

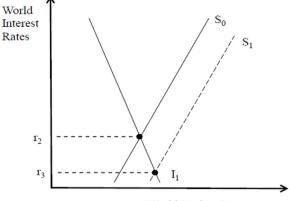
On the fourth point above, studies of past episodes of fiscal expansion in advanced economies reveal that fiscal policy can be pro-cyclical, and usually impacts after the trough of any downturn. Stimulus in the form of infrastructure spending normally arrived too late, around a year or more on average after troughs had been reached.

Finally, with regard to ignoring public debt, Keynes' well-known quip that 'in the long run we are all dead' is of course literally true, but it ignores that, due to higher public debt households and firms can in the foreseeable future expect little tax relief. Moreover, it means governments need to continue drawing on available saving as public debt is rolled over.

A notable and unexpected feature of the world economy post crisis has been high saving, low investment and persistently low interest rates, as depicted in our loanable funds model in Fig. 10. World saving is high due to heightened debt-related post crisis uncertainty and Ricardian effects, while private investment has been anaemic, also due to debt-related uncertainty, banking re-regulation and restricted bank lending, notwithstanding bouts of quantitative easing in AEs, notably the United States, Europe and Japan, with monetary policy generally loose elsewhere.

#### 5. The Australian GFC experience

It has often been asserted that Australia avoided recession during the GFC based on a single indicator of macroeconomic activity — the absence of negative real GDP over two successive quarters. However, two quarters of negative growth in a row were recorded in nominal GDP, the standard real production and income-based measures of GDP, as well as for the real gross national income (reflecting the impact of the terms of trade slump at the time).



World Saving, Investment

Fig. 10. Post-crisis global investment and saving.



**Fig. 11.** Australian GDP vs GDP per head. *Source:* Australian Bureau of Statistics, *National Accounts*; data available at https: //www.abs.gov.au.

The standard real expenditure-based GDP measure was the only national income series not to fall for two successive quarters. Meanwhile, the statistical discrepancy associated with the GDP expenditure measure, was sizeable by historical standards during this period, implying a wider set of national accounts measures should have been used to paint a broader picture of the state of the Australian economy.

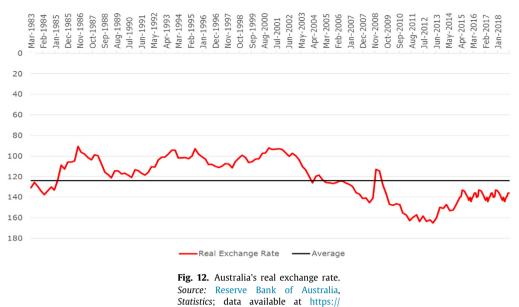
Several labour market indicators, for instance, showed employment conditions unambiguously worsened in the wake of the crisis. Hours worked fell in the quarters immediately afterwards, while the unemployment rate simultaneously increased by over one per cent. Unemployment rose to near six per cent, much lower than the ten per cent unemployment reached in the United States, and considerably below unemployment rates in previous Australian recessions.

In any case, for an economy experiencing high population growth, a superior measure of macroeconomic welfare is real GDP per capita which was negative for three successive quarters. See Fig. 11 which compares standard GDP and GDP per head measures for Australia since the turn of the century.

In short, an array of macroeconomic indicators suggested there was a recession, albeit one that was relatively mild by the standards of past recessions. See Makin (2010) for further discussion.

#### 6. The Australian macroeconomic policy response

To prevent a predicted recession, monetary policy and fiscal policy were deployed, with the Reserve Bank cutting the official interest rate soon after the crisis erupted by three per cent. Meanwhile, as occurred with the 1997–98 Asian crisis,



www.rba.gov.au.

the exchange rate fell sharply, by around a third against the US dollar, leading to a significant turnaround in the economy's international competitiveness.

The federal government unveiled one of the world's largest fiscal responses in 2008–09, even though Australia's banking and finance sector remained strong compared to those in the stricken North Atlantic economies where systemic banking problems lay at the heart of the crisis. Intended to stimulate aggregate demand through increased consumption and investment expenditure, a series of extra government spending measures were implemented that involved a mix of income transfers to select groups, as well as new expenditure on infrastructure, including school halls, public housing, home insulation and limited tax breaks for business.

Directed at the non-tradable sector of the economy, the direct cost to the federal budget of discretionary fiscal stimulus was \$77 billion which Treasury claims saved 200,000 jobs based on Treasury modelling of the long run empirical relationship between GDP and employment. Yet, Australian workers had more specialised skills than ever, so jobs fiscal stimulus measures created were unlikely to match those lost. A much-neglected factor that prevented unemployment exceeding 6 per cent, in contrast to unemployment peaking at over 10 per cent in the early 1990s recession, was the highly flexible labour market in place at the time.

Australia's national accounts showed that it was not federal fiscal stimulus that was primarily responsible for countering the GFC-induced economic slowdown over the December 2008 and March 2009 quarters. Instead, the national accounts record that a severe downturn was avoided in 2008–09 because net exports rose following a major loosening of monetary policy, capital outflow and a 30% exchange rate depreciation. China's increased demand for coal and iron ore was also critical to the rise in exports. See Day (2011).

In reality, the federal government's direct influence on domestic consumption and investment expenditure was minimal at the critical time, arriving several quarters after it was considered essential (the December 2008 and March 2009 quarters), consistent with the classic criticism of fiscal activism that it usually impacts with a lag.

#### 6.1. The worsening of competitiveness

Given Australia's status as a small open economy, any evaluation of the impact of a global financial shock has to consider the transmission of that shock, and the domestic macroeconomic policy response to it, with reference to international macroeconomic variables. When the GFC hit, asset and commodity prices tumbled, international capital exited, and the Australian dollar initially collapsed, as occurred during the Asian crisis of 1997–98. This insulated the economy and boosted competitiveness at the critical time. As shown in Fig. 12, the real exchange rate depreciated sufficiently to ensure this measure of Australia's competitiveness was above its long run average.

The mining sector had been experiencing an unprecedented boom driven by strong demand from Australia's Asian trading partners, especially China. This greatly boosted mining investment and employment, mineral exports, national income, and state and federal government revenues. This factor along with substantially improved competitiveness caused a turnaround in Australia's trade balance from deficit to surplus. Hence, as Fig. 12 shows, it was net exports that was responsible for Australia "avoiding recession" according to the expenditure measure of GDP, not government spending as such, which arrived with a lag some quarters later. (See Fig. 13.)

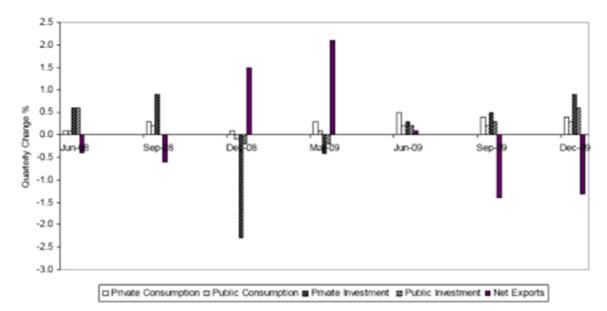


Fig. 13. Contributions to change in GDP (expenditure measure). Source: Australian Bureau of Statistics, National Accounts; data available at https://www.abs.gov.au.

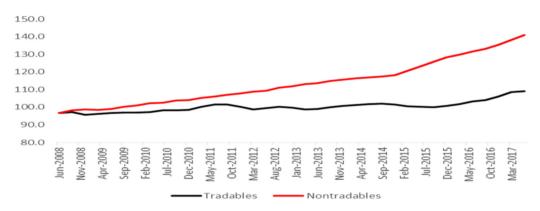
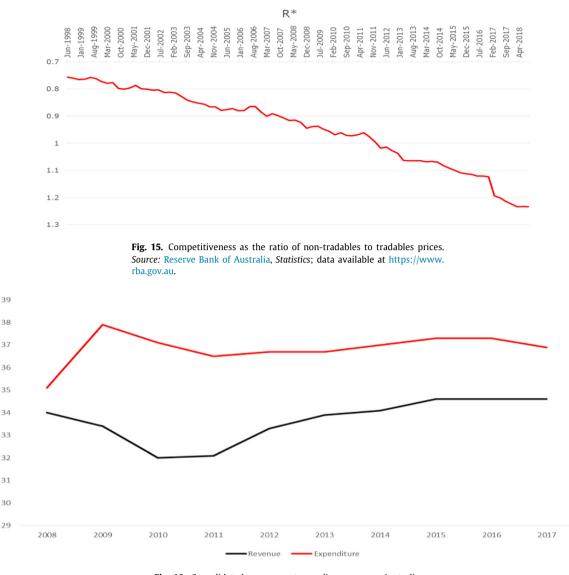


Fig. 14. Tradables vs non-tradables prices post GFC. Source: Reserve Bank of Australia, Statistics; data available at https://www.rba.gov.au.

Meanwhile, as government spending increased via federal and state government fiscal stimulus measures, the Australian dollar began to appreciate strongly, making competitiveness worse than at any other time during the floating exchange rate era from 1983. This loss of competitiveness and deterioration in the trade account was consistent with the classic prediction of the Mundell (1963) Fleming (1962) open economy model that fiscal stimulus is ineffective under a floating exchange rate. Relatedly, Makin and Narayan (2013) provides econometric evidence that Australia's consolidated budget imbalance and foreign borrowing have been approximately twinned based on historical quarterly data.

Commodity prices rose quickly again post GFC until the end of 2011. This also put further upward pressure on the exchange rate worsening Australia's competitiveness, as did quantitative easing by major central banks, notably at that time by the United States Federal Reserve and the Bank of England, whose economies had distressed banking systems.

In addition, competitiveness gauged by the ratio of non-tradables prices to tradables prices, as originally suggested by Salter (1959) and Swan (1960), also deteriorated. See Figs. 14 and 15. Deterioration in competitiveness by this measure implies that productive resources were shifted from industries that had been internationally competitive to industries that are shielded from international competition. Econometric evidence suggests increased government expenditure on non-tradables has been the main cause of Australia's lost competitiveness by this measure over a lengthy period (see Makin and Ratnasiri, 2015).



**Fig. 16.** Consolidated government spending, revenue, Australia. *Source:* IMF *Fiscal Monitor*; data available at https://www.imf. org.

#### 6.2. Australia's public debt

As argued in Makin and Humphries (2014) and Makin (2016), the nature of Australia's fiscal stimulus was misconceived because it focused on income transfers to select groups, unproductive current and capital expenditure, such as pink batts and school halls, instead of greater tax relief and/or supply side reform. In contrast, the New Zealand government flattened marginal tax rates, bolstered productive infrastructure and wound back business regulation. The size of Australia's public spending boost was excessive and counterproductive as it prevented interest rates and exchange rates from staying lower for longer, contrary to the 1997–98 Asian Crisis experience.

Higher government spending at federal and state government level, also left a legacy of large budget deficits and higher public debt. Government spending at a consolidated level increased sharply in response to the crisis and remains above its pre-crisis level as a proportion of GDP at around 37 per cent. See Fig. 16. New post GFC spending programmes unrelated to fiscal stimulus, such as the National Disability Insurance Scheme, have also contributed to this rise.

Meanwhile, consolidated revenue fell following the GFC as economic activity slumped, but has since recovered to reach a level just above the pre-crisis share of national income. Hence, post GFC the spending side of the national budget was primarily responsible for widening Australia's fiscal deficits. Australia's federal public debt to GDP ratio at close to 30 per cent is not high by OECD standards, but post GFC was one of the fastest growing in the world and was unmatched by a corresponding rise in public assets. Contrary to other AEs, Australia's public debt is predominantly owed to foreign entities and has become a significant part of Australia's total foreign debt. Interest payments on federal public debt have grown to surpass budget outlays on major government programmes, including unemployment benefits, higher education and foreign aid.

As suggested in Makin and Pearce (2016), these interest payments on public debt owed to foreigners directly reduces national income to the same extent and could lead to a vicious cycle of deficits and debt calling for emergency fiscal action should rising world interest rates combine with an interest risk premium due to a credit rating downgrade.

Meanwhile, consistent with the marked slowdown in other AEs, the Australian economy post-GFC has grown at near half pace on a GDP per capita basis compared to the pre-GFC years. As Fig. 11 shows, per capita GDP grew at an average of close to 1 per cent between 2011 and 2018 whereas it averaged over 2 per cent in the five-year period preceding the crisis.

#### 7. Lessons for Australian macroeconomic policy

Critical questions arose for Australia's macroeconomic policy during the GFC and the actions taken by the authorities at the time remain controversial, especially in relation to fiscal policy. Monetary policy was appropriately relaxed at the time of the crisis, with the official cash rate lowered by three per cent. This facilitated the sharp fall in the exchange rate that also reflected a large drop in commodity prices and capital outflow unrelated to international interest rate differentials. Meanwhile, the government provided necessary guarantees to the banks that ensured domestic and international flows of funds were not unduly disrupted.

How fiscal policy was deployed proved far more contentious. For instance, it was routinely asserted that the economy escaped recession because of the fiscal stimulus provided by the federal and state governments at the time. However, this popular macroeconomic narrative is refutable on theoretical grounds and untrue empirically. National accounts data suggests that Australia did not really escape recession, and furthermore that fiscal stimulus was not responsible for the economy's post-crisis rebound. Instead, it helped drive up the exchange rate to post-float highs, worsening competitiveness, thereby harming manufacturing, tourism and other industries in the tradables sector which offset jobs created via the stimulus measures.

While there is evidence that business tax relief in particular during the GFC assisted investment (Rodgers and Hambur, 2018), the series of post GFC budget deficits and the associated sharp rise in public debt have acted to constrain further income and company tax relief. Post-crisis fiscal deficits and debt have, in themselves, thereby created policy uncertainty and deterred private investment which has contributed to sub-optimal economic growth and slow real wage gains.

Reducing public debt minimises the risk that, as global interest rates rise, public debt interest outlays will feed through to higher budgetary outlays creating a vicious deficit and debt cycle. To lower Australia's public debt to pre-crisis level, persistent primary budget surpluses are needed, achievable by lower spending, higher revenue, or a combination. Of these options, lower spending is optimal as higher taxes act to deter work effort, saving and investment. Obvious candidates for public expenditure reduction are industry assistance and the federal-state spending overlap, particularly in health and education.

In sum, a key lesson for Australian fiscal policy has been that increased government spending did not foster higher private investment, a key driver of growth, productivity and higher real wages. Theory and evidence implies Australia will not improve its competitiveness without greater fiscal consolidation, combined with structural reform. Yet federal governments post GFC have ignored the role fiscal repair, particularly through cuts to unproductive spending such as industry assistance and overlap in federal-State programmes, can play in boosting Australia's competitiveness and future economic growth.

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