Melbourne Institute Policy Briefs Series

Policy Brief No. 2/15

Budget Deficits and Fiscal Policies

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Abstract

We highlight the strong relationship of taxes and expenditures with the business cycle and draw attention to periods when changes in the budget deficit have been predominantly driven by discretionary and/or unexpected events. Although the task of turning a deficit into a surplus is challenging, we consider it short sighted to view the fiscal policy challenge as simply one of reducing the size of the deficit in the short term — decisions to cut particular types of expenditure or raise particular types of taxes have serious long-term social and economic implications.

1. Introduction

The Commonwealth budget deficit continues to be a subject of much concern, with calls to increase taxation and/or cut government expenditure in an attempt to reduce the deficit. This is puzzling as Australia's debt to gross domestic product (GDP) ratio (at around 30 per cent) is one of the lowest in the world and moreover it is generally understood that budget balances are strongly cyclical. Surpluses tend to occur during times of strong GDP growth when tax receipts are up and welfare spending is down, while deficits tend to occur and rise during times of economic slowdown, driven by a combination of declining tax revenues and rising welfare expenditure. Australia is experiencing a period of slow growth, so why then is the debate not solely about stimulating growth to improve the budget balance?
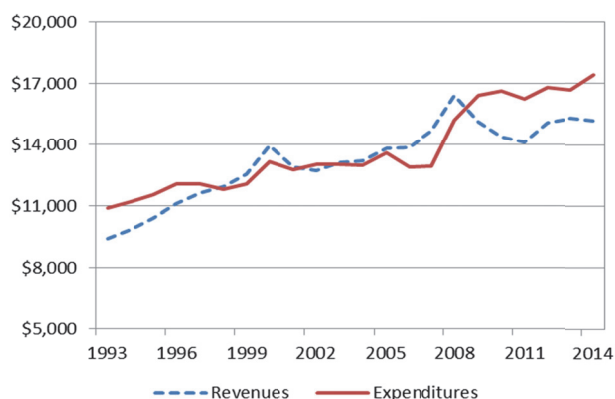
One reason could be that the prospect of growth is considered to be unachievable. Another reason could be that it is prudent to limit the size of the debt to GDP ratio as high indebtedness is often perceived to be indicative of high default risk (which can be a problem since fiscal sustainability requires a willingness by the market to hold the debt). A third reason is that the deficit problem is perceived to be structural, not cyclical, and hence improving growth will not automatically improve the deficit.

Understanding whether the fiscal balance is driven by cyclical or structural factors is important for informed policy discussion. If the fiscal imbalances reflect normal changes in the business cycle, then policy is better directed at smoothing deficits and surpluses. In contrast, if the fiscal imbalances reflect fundamental changes in the economy, then policy should be directed at altering the receipts and payments (i.e. changing taxes and expenditures).

Figures 1 and 2 show government receipts and payments expressed, respectively, on a real per capita basis and as a percentage of nominal GDP. The interesting point to note is that, after the global financial crisis (GFC), expenditure per capita continues to be higher than revenue per capita. The same point can also be made when receipts and payments are expressed as a per cent of GDP: total revenue fell during the GFC and is currently languishing at 23 per cent while expenditure rose during the GFC and is still at a high of 26 per cent. It would appear that, prima facie, there is a case for considering a restructuring of the budget deficit.

This Policy Brief is organised as follows. The next two sections discuss the components of revenue and expenditure and their likely drivers. We then present a simple decomposition of the deficit to isolate the changes that can be associated with business cycles and discuss the sense in which the deficit is sustainable. Our period of analysis is post-1993, when Australia adopted inflation targeting.

Figure 1: Total government revenues and expenditures (real per capita)

Figure 2: Total government revenues and expenditures (% nominal GDP)

Sources: ABS, Australian Government, Reserve Bank of Australia.
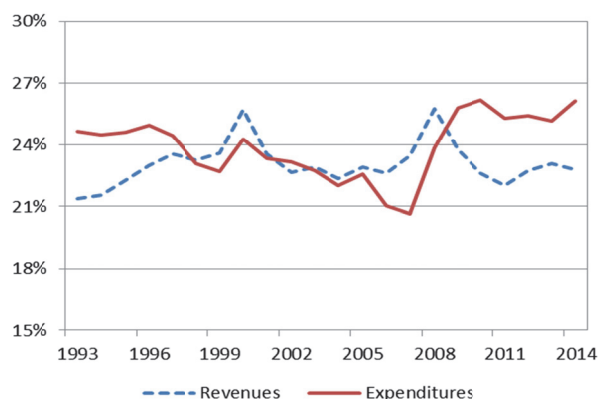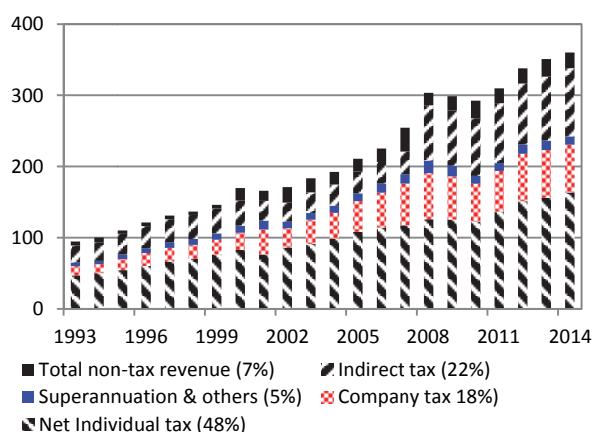
Sources: ABS, Australian Government, Reserve Bank of Australia.

2. Components of Revenue: trends and cycles

Composition: Australian government revenues come from two sources: taxation and non-taxation. Taxation revenues account for the majority of the government's total revenues (roughly 93 per cent on average since 1993) with the remainder coming from non-taxation revenues such as the government's sales of goods and services, interest and dividends received. Taxation revenue itself consists of two components: income tax revenue (around 71 per cent of total revenue) and indirect tax revenue (around 22 per cent of total revenue). Among the income tax items, individual income tax contributes around 48 per cent to total revenue, followed by company income tax (around 18 per cent). Income taxes on superannuation funds and other revenues account for only 5 per cent of total revenue (see Figure 3).

Per capita: Figure 4 shows how revenue in real per-capita terms has been shared between the principle sources of government revenue: individual income, company income and other income. Figure 4 shows that total per-capita revenue has increased by 60 per cent between 1992/93 and 2013/14. While taxes from all sources have grown over the years 1993 to 2014, the rate of change for income sourced from company tax is more than double that for income sourced from individual tax. Specifically, between 1992/93 and 2013/14, real individual income tax revenue per capita grew by 46.2 per cent as compared to real company income tax revenue per capita which grew by 117.6 per cent. Over this period, the ratio of individual to company income tax revenue declined from 3.6 in 1993 to 2.4 in 2014.

Figure 3: Components of government revenues ($billion)*

- Total non-tax revenue (7%)
- Superannuation & others (5%)
- Net Individual tax (48%)
- Indirect tax (22%)
- Company tax 18%)

Sources: ABS, Australian Government, Reserve Bank of Australia

Figure 4: Major components of government revenues (real per capita $)

Sources: ABS, Australian Government, Reserve Bank of Australia

*Revenues: Net individual tax is Gross PAYG withholding and Gross other less Refunds. Indirect tax revenues cover income from all other taxes such as the goods and services tax (GST), fuel excises, customs duties, carbon pricing, agricultural levies, fees and fines. Total non-tax revenue includes the government's sales of goods and services, interest and dividends.
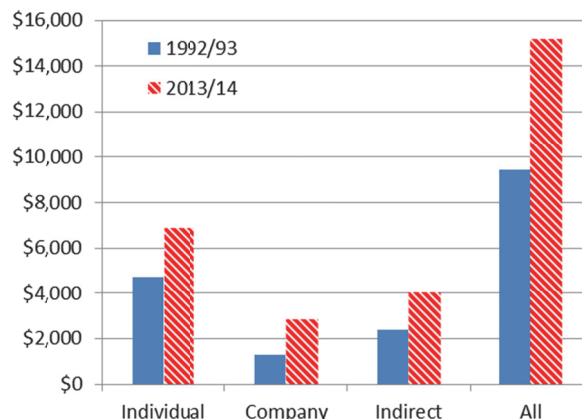
Percentage of nominal GDP: Australian government revenue as a percentage of nominal GDP has fluctuated at around 23 per cent and is highly correlated with the business cycle. Total revenue as a percentage of GDP rose above 23 per cent in the run-up to the dotcom bubble burst in the early 2000s and in the run-up to the GFC. It dipped below 23 per cent during the early 1990s recession and in the aftermath of the GFC.

Figure 5 plots individual and company income tax revenues as percentages of nominal GDP. Although both sources of revenue display strong cyclical features, company income tax revenue seems to be more sensitive to changes in the business cycle. In particular, the impacts of the early 1990s recession, the Asian financial crisis and the GFC appear to be more pronounced and longer lasting for company income tax revenue. After the early 1990s recession, individual income tax revenue recovered relatively quickly and was not affected by the Asian financial crisis. In contrast, company income tax revenue dipped further in

1994 and flattened during the Asian crisis. Though both were adversely affected during the GFC, company income tax revenue was rising before the GFC, in contrast to the decline in individual income tax revenue. Specifically, between 2000/01 and 2007/08 company tax revenues as a share of GDP increased on average by 0.23 percentage points per annum while individual tax revenues, expressed as a share of GDP, declined on average by 0.23 percentage points per annum. While both individual and company income taxes have recovered slightly following the GFC, taxes derived from individual incomes are stagnating whereas taxes from company incomes are declining (individual income tax revenue, as a share of GDP, has declined by just 0.37 percentage points between 2008 and 2014, compared to a fall of 1.25 percentage points in company income tax revenue as a percentage of GDP).

The changes in income tax revenue are highly correlated with changes in the factor shares of national income. In particular, individual income tax revenue as a percentage of GDP is highly correlated with the wage share (correlation coefficient of 73 per cent), while company income tax revenue is correlated with the profit share (correlation coefficient of 63 per cent). Figure 6 shows that the wage share has been declining steadily while the profit share has been rising steadily from 24.6 per cent in 1992/93 to a peak of 29.2 per cent in 2008/09 (corresponding to an average annual increase of 0.27 percentage points). Both the profit and wage shares declined during the GFC, with the former falling to a low of 26.2 per cent in 2012/13 before recovering slightly to 27.3 per cent in 2013/14. The drivers of these trends include the boom generated by improvements in the terms of trade and the growth in gross mixed income, to name just two.

There are a couple of other important changes in the labour markets which may also explain the decline in wage share. First, part-time employment has grown at a faster rate than full-time employment. Between 2001 and 2008, part-time employment grew at an average annual rate of 3.6 per cent, compared to an average annual growth rate of just 2.0 per cent in full-time employment. This has resulted in a decline in the full-time to part-time ratio, particularly for male employment (from 8.8 in 1993 to 4.9 in 2014). Second, while the female participation rate has risen substantially (from 51.8 per cent in 1993 to 58.6 per cent in 2014), more than half of the jobs that have been created have been part-time.

These two changes have translated into a rise in employment accompanied by a decline in the number of hours worked per employee, especially since 2001. The strong wage growth in the mining sector during the commodities boom was insufficient to raise overall wage growth in the economy, with the mining industry constituting only a small proportion (around 2 per cent) of aggregate employment. Overall, stable wage growth (at around 3.5 per cent per annum) together with a decline in hours worked per employee appears to have contributed to the decline in the wage share (and thus to aggregate individual incomes from which individual income taxes are obtained).

Figure 5: Individual and company income tax (% of nominal GDP)

Figure 6: Wage and profit share

Sources: ABS, Australian Government, Reserve Bank of Australia.
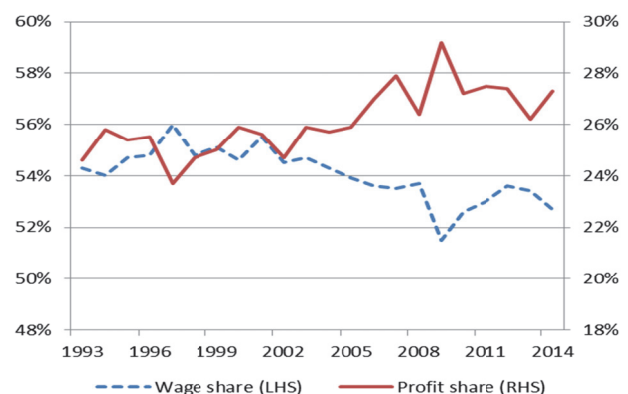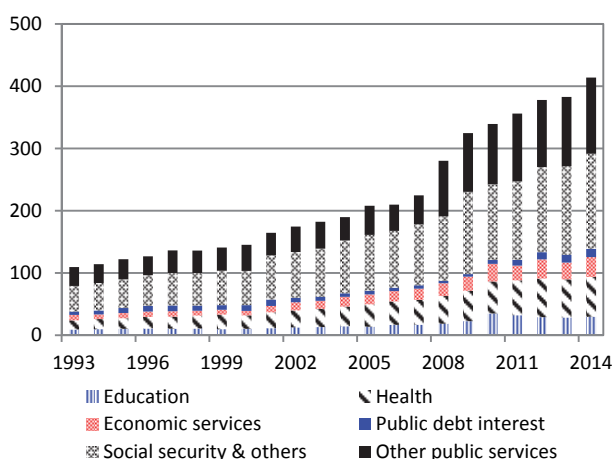
Sources: ABS, Australian Government, Reserve Bank of Australia.

3. Components of Expenditure: trends and cycles

Composition: Total Commonwealth government expenditure rose by 8.1 per cent in the 2013/14 fiscal year to just under $414 billion, being the largest nominal increase since 2008/09. About 37 per cent of the Commonwealth budget, or $153 billion, was spent on social security, housing and recreation, with 15.5 per cent going towards health, 7.7 per cent to economic services and 7.2 per cent to education (Figure 7). Just under 30 per cent of Commonwealth spending went to other public services (comprising general public spending, defence, public debt interest and general purpose inter-government transactions) with the remainder being used to pay interest on public debt.

Per capita: Figure 8 shows the expenditure components in real per-capita terms (i.e. spending levels after accounting for population growth and inflation). Per-capita spending has increased by approximately 2.2 per cent per annum in real terms since 1992/93, clearly exceeding the 1.35 per cent per annum increase in the estimated resident population. Real per-capita spending for social security and welfare purposes has increased by about 2 per cent per annum from $3,990 per person in 1993 to just over $6,000 per person in 2014. Health costs are also substantial, amounting to about $2,700 per person in 2013/14 after having risen by about 2.7 per cent per annum since 1993.
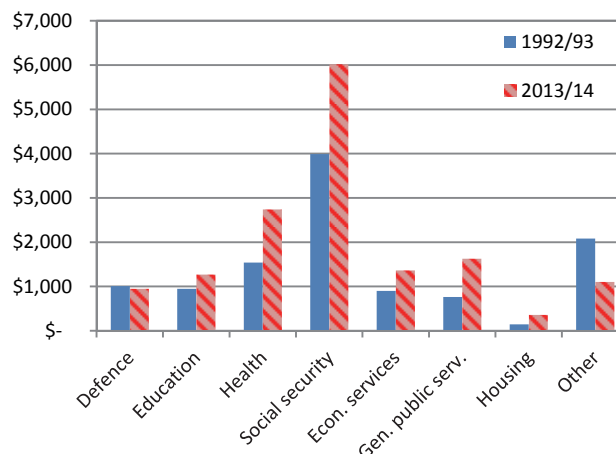

Figure 7: Components of expenditure ($billion)*

Figure 8: Real per-capita expenditure

Sources: ABS, Australian Government, Reserve Bank of Australia

Sources: ABS, Australian Government, Reserve Bank of Australia

*Expenses: Social security & others includes: Social security and welfare, Housing and community, Recreation and culture. Other public services includes: General public services, General purpose inter-government transactions, Defence and Other. Economic services is predominantly made up of Fuel and energy, Agriculture, forestry and fishing, Transport and communication and Other economic affairs.

In growth terms, real per-capita expenditure has increased by about 3.6 per cent per annum for general public services and by 4.3 per cent per annum for housing (and community) expenditure exceeding the growth observed for either social security (and welfare) or health. In general, real per-capita expenditure has increased across all categories, with the exception of defence spending which has declined by an average of 0.3 per cent per annum since 1992/93. The increase in the general public services category was particularly significant in 2013/14, with real per-capita spending for the category rising by 23 per cent from the previous fiscal year, largely as the result of a major increase in expenditure relating to financial and fiscal affairs. The annual percentage increase in expenditure for general public services in 2013/14 was the largest observed in all categories and was followed by a 20 per cent increase in real per capita housing and community expenditure.

Percentage of nominal GDP: Total expenditure has hovered at around 24 per cent of GDP since 1993. In the 2006/07 fiscal year, expenditure as a proportion of GDP fell to its lowest level in the last two decades (20.7 per cent), but has since risen to 26.1 per cent in the 2013/14 fiscal year. Commonwealth expenditure, relative to the size of the economy, has remained fairly steady across the expenditure classes, with social security and welfare payments dominating the expenditure spectrum. An amount close to 9 per cent of GDP is spent annually for social security and welfare purposes (Figure 9). Health expenditure is the second largest expenditure class, and has exceeded 4 per cent of GDP since 2011/12. Expenditure on education has fallen in recent years, from about 2.7 per cent of GDP in 2009/10 to 1.9 per cent of GDP in 2013/14. Similarly, defence spending has exhibited a negative decline since 1993, falling from about 2.2 per cent of GDP in 1993 to 1.4 per cent in the most recent fiscal year. In contrast, Commonwealth public sector expenditure has risen to 2.4 per cent of GDP in 2013/14, from 1.8 per cent of GDP in 2009/10.

More than half of the expenditure attributed to social security and welfare is allocated to aged persons or people with disabilities; assistance to the aged alone constituted about 3.5 per cent of GDP in 2013/14, having consistently risen over the last few years. In turn, health has exhibited a steady positive trend in its budget allocation, rising from about 3.3 per cent of GDP in 1992/93 to just over 4 per cent in the most recent fiscal year. Figure 9 shows the relative magnitude of social security (and housing) expenditure and the strong positive trend in heath expenditure, and contrasts these with the remaining Commonwealth government expenditure. The rise in expenditure for health is largely a reflection of the ageing nature of the Australian population. The proportion of persons aged 65+ in Australia has been increasing since the 1970s, and is now about 14 per cent of the population (compared to 11.5 per cent of the population 20 years ago). This is expected to rise to about 20 per cent by 2040 (Figure 10).

In particular, the number of persons aged 65+ has been rising by an average of 2.3 per cent per annum over the last 20 years (clearly exceeding the 1.2 per cent per annum growth observed for persons aged below 65). The increase is most notable for persons belonging to the 80–84 and 85 and over age brackets, which have been rising faster than any other age bracket (3.2 per cent and 4.7 per cent per annum respectively). These statistics underlie the significant structural increase in Commonwealth expenditure relating to social security and health (which has risen by an average of 2.2 per cent per annum in real per-capita terms since 1993), with increasingly greater numbers of people relying on old age pensions, medical and hospital services, and the supply of pharmaceuticals under the Pharmaceuticals Benefit Scheme.

Figure 9: Expenditure as a proportion of GDP
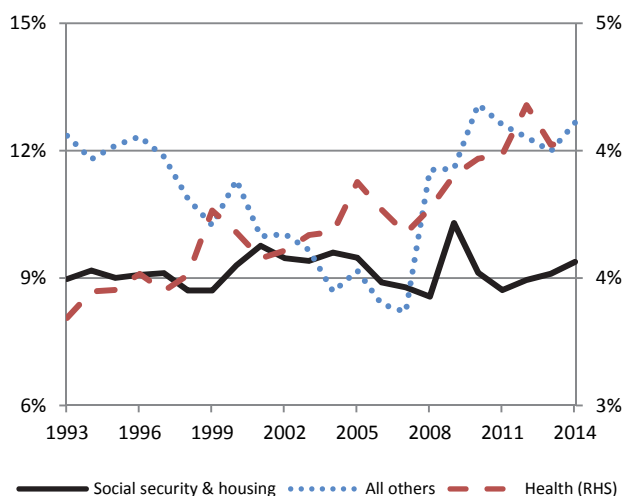
Sources: Reserve Bank of Australia, Commonwealth Budget Statements

Figure 10: Proportion of persons aged 65+
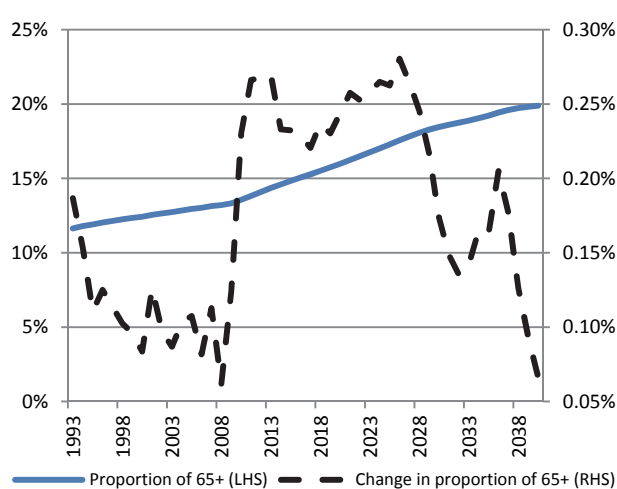
*Sources*: Reserve Bank of Australia, Commonwealth Budget Statements

4. Debt, Budget Deficits and Interest Payments

Budget deficits are the differences between revenues and expenditures and they vary with the business cycle and with changes in fiscal policies. They also reflect the outcomes of actions by governments to unexpected events like natural disasters. Since deficits have to be covered by government borrowings (usually through the issue of new government securities), discussions about budget deficits usually also include discussions about the size of the interest payments.

We shall first discuss the budget deficit with reference to the business cycle. Since the growth in nominal GDP takes into account the boom effects of improvements in the terms of trade, and the recessions associated with the 2000s and the GFC, we shall estimate how much of the growth in total revenues and total expenditures can be explained by changes in the growth of nominal GDP; by construction, the residual will be due to other factors such as discretionary policies and/or unexplained events. For convenience of exposition, we have termed the part which co-moves with nominal GDP as the 'business cycle' component and the remainder as the 'other' component.[1] Figures 11 and 12 provide estimates of the decomposition of the growth in total revenues and total expenditures (excluding interest payments on debt) attributed to the change in nominal GDP and to other factors.

The relationship between total revenue and nominal GDP is positive reflecting the stylised fact that changes in income tax revenue (the largest revenue source) co-move with changes in national income (Figure 11). The contributions of the 'other' component reflect mainly timing issues and changes to tax rates. For example, the consecutive cuts to company income tax (from 36 to 34 per cent in 2001 and then to 30 per cent in 2002) following the New Business Tax System Act in 1999 likely explain the negative contributions of the 'other' component in 2001 and 2002. Similarly, substantial tax refunds are likely to be behind the negative contribution of the 'other' component in 2009. In contrast, the large positive contribution of the 'other' component in 2008 appears to be associated with the introduction of the superannuation concessional cap which resulted in higher revenue from taxes on superannuation.

Figure 11: Growth in total revenue associated with the growth in nominal GDP (business cycle) and with other factors (other)
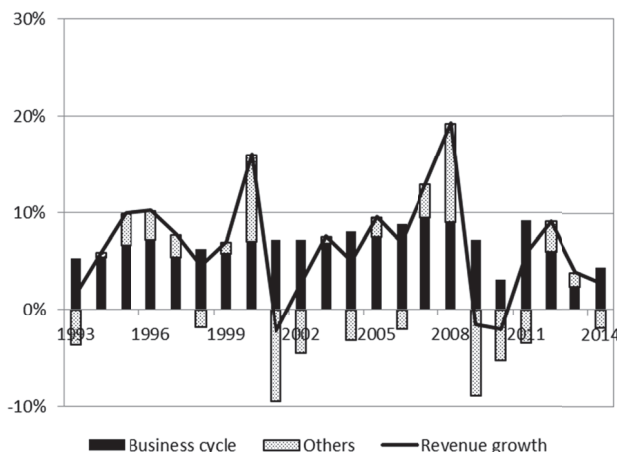
Source: Melbourne Institute estimates.

Figure 12: Growth in total expenditure associated with the growth in nominal GDP (business cycle) and with other factors (other)
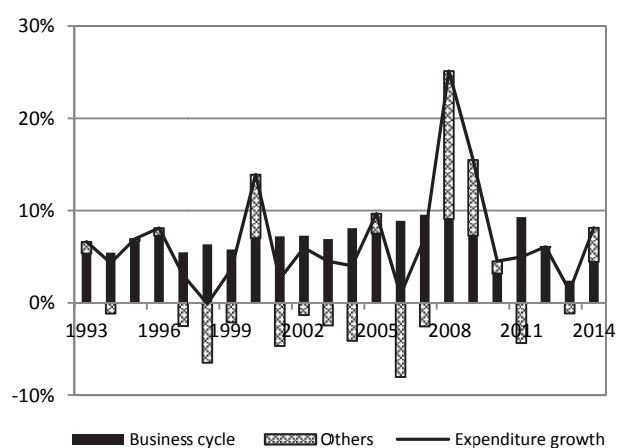
Source: Melbourne Institute estimates.

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[1] Decomposing the budget deficit into its structural and cyclical components is not straightforward and depends on a host of assumptions. See the discussion by the Australian Treasury as to why their estimates differ from those proposed by the International Monetary Fund and the Organisation for Economic Co-operation and Development: <http://archive.treasury.gov.au/documents/1881/HTML/docshell.asp?URL=04_Structural_Budget_Balance.htm>.

The relationship between expenditure growth and nominal GDP growth is also positive. Although the relationship between social and welfare payments and economic growth is typically negative (with payments rising during periods of low growth), the overall positive relationship between *aggregate* expenditure and economic growth suggests that expenditure is reduced in other areas during periods of low growth. The importance of factors other than GDP appears to have increased over time, and was especially large in 2008 and 2009; the economic ramifications of the GFC led to large temporary hikes in expenditure during 2008 and 2009. These hikes were associated with additional social security payments stemming from rising unemployment and the adoption of stimulus packages. These packages involved substantial infrastructure investment (particularly for schools), in addition to cash bonuses to seniors, carers and families.

Figure 13 presents the breakdown of the budget deficit (defined as revenues less expenditures) into its 'business cycle' and 'other' components based on the decompositions of revenues and expenditures discussed in earlier sections. It shows the prominent role played by the stimulus packages during the GFC. The aftermath of those decisions on debt levels lingers on, both in the form of interest payments on government debt and as net spending over and above what is commensurate with the growth in the economy (see especially the 'other' components in 2010 and 2014).

Budget deficits aggravate the debt problem because they require the issue of new government securities which adds to interest payments. This can lead to an escalation of the debt service problem unless growth in nominal GDP is sufficient to yield a budget surplus (ceteris paribus) large enough to offset the payment of interest on the debt. This idea is expressed more formally as a law of motion for the debt to GDP ratio.[2] In general, if the cost of debt is less (more) than the growth in nominal GDP, the debt to GDP ratio will decrease (increase) over time. Figure 14 shows the implied (average) cost of debt service (computed as the percentage of interest payments to total debt) along with the growth in nominal GDP. The figure shows that, in contrast to the 1990s, the 2000s was a period when the probability of a budget blow-out due to debt service was low.[3] This is clearly associated with the declining yields on both short-term and long-term Commonwealth government bonds observed in recent years.

Figure 13: Budget deficit (revenue less expenditure) associated with the growth in nominal GDP and other factors plus the debt service ($billion)
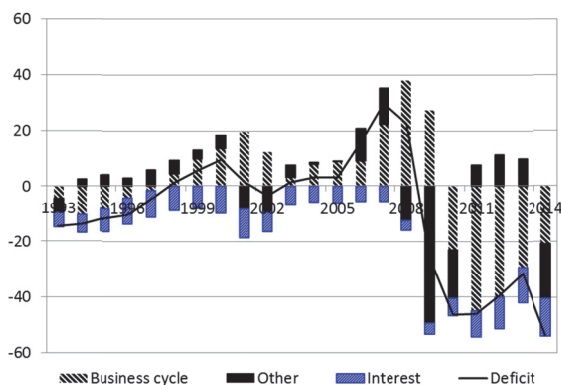
Figure 14: Implied cost of debt and growth in nominal GDP

Source: Melbourne Institute estimates.
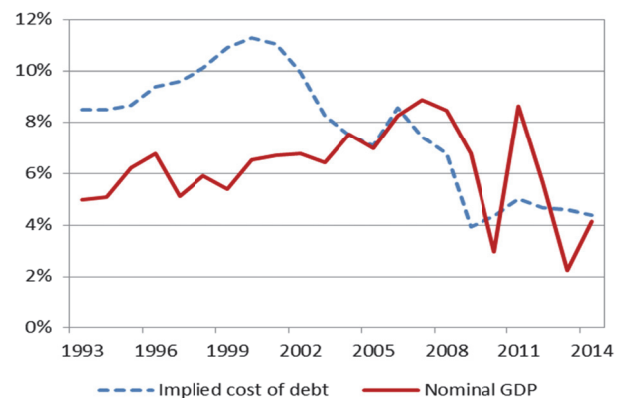
Source: Melbourne Institute estimates.

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[2] The law of motion for government debt is $\Delta B_t = r_t^* B_{t-1} + (G_t - T_t)$ where B is government debt; r^* is the average rate of interest on debt and $\Delta B_t = B_t - B_{t-1}$; G is government expenditure; T is tax revenue; and $(G–T)$ is the fiscal balance with $(G>T)$.

[3] The relationship between the ratios is $b_t = ((1+r_t^*)/(1+g_t))b_{t-1} + d_t$ where $b_t = (B_t/Y_t)$; $(1+g_t) = (Y_t/Y_{t-1})$; $d_t = ((G-T)/Y_t)$; Y_t is nominal GDP.

5. Concluding Remarks

In this Policy Brief we have highlighted the strong relationship between taxes and expenditures and the business cycle, in addition to drawing attention to periods when changes in the budget deficit have been predominantly driven by discretionary policies and/or unexpected events. The service of Australian government debt does not appear to be an immediate issue, but the likely decline of the wage tax base and the ageing of the Australian population have serious consequences for the budget deficit. Under this scenario, revenues will continue to fall while expenditures rise, making the task of turning the budget deficit into a surplus extremely difficult without severe policy reforms. Simple accounting (under stable economic conditions) indicates that implementing a five-year plan to turn a $50 billion (approximately) deficit into a surplus implies reducing the underlying cash deficit by about $10 billion per annum.

The turnaround would require a combination of revenue-raising and expenditure-reducing policy decisions, although the evaluation of budgetary options is by no means straightforward. Analysing the economic sustainability of the budget requires forecasting the trajectory of key economic factors such as the path of international developments, as well as projecting the effects of policy changes on long-term growth, employment and income inequality. Changes to tax rates, for example, affect the incentive to work, while cuts to public expenditure on education influence productivity. Finally, changes to welfare and health go to the heart of issues such as access and equity.

Budget deficits are the financial manifestations of fiscal policies. Although the task of turning a deficit into a surplus is challenging, we consider it short sighted to view the fiscal policy challenge as simply one of reducing the size of the deficit in the short term — decisions to cut particular types of expenditure or raise particular types of taxes have serious long-term social and economic implications.