KPMG

Debt and deficit

KPMG Research Report

July 2016

kpmg.com.au

Introduction

There is considerable debate amongst politicians, economists, and in the community as to what is the 'best' mechanism to use by the Federal Government in order to bring the Commonwealth budget back into surplus and reduce the debt position of the nation.

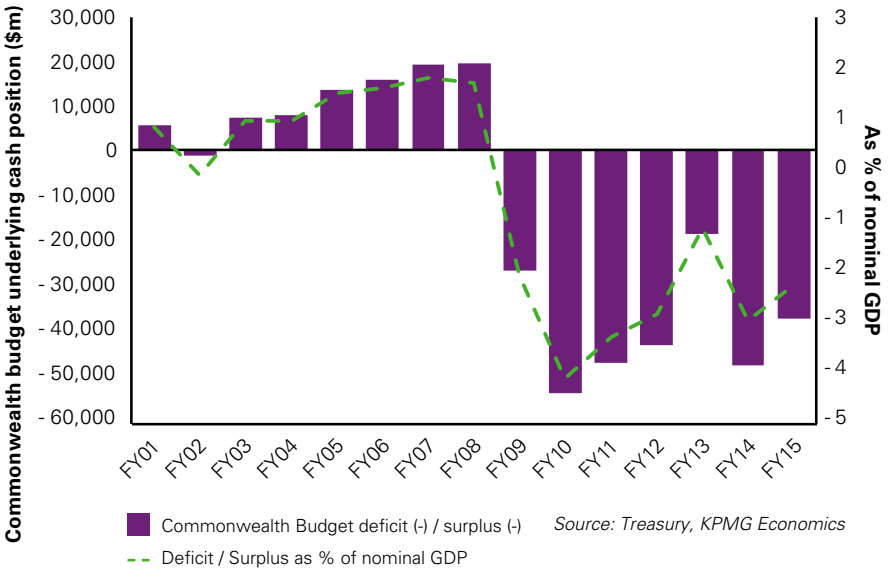
Some argue it should fall solely on a reduction to government spending, others suggest we are not taxing our personal and corporate citizenry enough and taxes should be lifted, while many believe that both spending cuts and tax increases should be jointly employed.

In this KPMG Research Report, we examine this issue and use our KPMG-MACRO model to simulate the impact on the Australian economy into the medium term of various policy options targeted at reducing the nation's debt-to-GDP ratio. This study is the second in our series of related Research Reports, and we recommend also reading KPMG's earlier study, *Solving the Structural Deficit*, released in April 2016.

Government debt

While Australia weathered the Global Financial Crisis (GFC) relatively well compared to most other nations, we have come out the other side of it with higher net national debt and budget deficits consistently running in the order of -2.0 percent to -4.0 percent of nominal GDP.

Commonwealth Budget Balance, FY01 – FY15



Source: Treasury, KPMG Economics

Politicians and economists often make reference to the fact that Australia has a relatively low level of debt compared to many other countries, with a frequently quoted statistic being net debt-to-GDP of 15 percent.[1]

However, this estimate of net debt only incorporates the relevant debt and investment position of the Federal Government, and excludes the corresponding values for governments at the State, Local and multi-jurisdictional level. Once these elements are included, the level of non-financial public sector debt for all levels of government in Australia increases to 23.6 percent, or about $380 billion.

Yet these estimates still do not present the total picture of the amount of debt owed by governments in Australia as it does not include the value of unfunded superannuation and pension liabilities of government workers. The IMF in its recent publication, *Public Sector Debt Statistics: Guides for Compliers and Users*, notes:

> **"Liabilities for non-autonomous unfunded employer pension schemes are liabilities and part of public sector debt when the employer is a public sector unit."**[2]

The value of unfunded superannuation liability and other employee entitlements amounts to nearly $470 billion[3] at the end of FY15, of which about 60 percent is owed by the Federal Government and 40 percent is owed by State governments. Since 1999 the rate of growth of unfunded superannuation liabilities has been running at about 8.5 percent per annum (compound). Once these liabilities are included in Australia's government debt position, our net debt-to-GDP ratio lifts again from 23.6 percent to 49.5 percent, or to the equivalent of about $33,500 per person.[4]

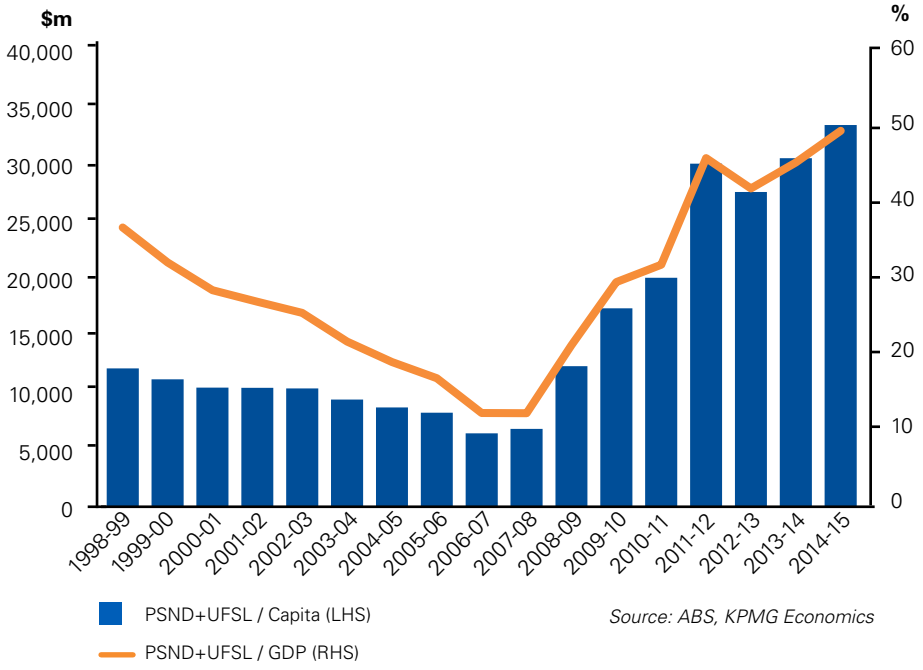
1 Based on Net debt of General Government Sector only. Net debt as a percentage of GDP = [(Currency on issue + Deposits held + Advances received + Borrowing) – (Cash on deposit + Advances paid + Investments, loans, and placements)] / Nominal GDP.

2 IMF (2015), Public Sector Debt Statistics: A Guide for Compliers and Users, p51.

3 This represents a gross position and does not specifically take into account assets held in Public Financial Corporations for paying superannuation liabilities. However, based on advice from the Australian Bureau of Statistics, KPMG understand these assets should be accounted for in the total Public Sector Balance Sheet under the asset category of 'Investments, loans and placements.' See ABS Cat.No. 5512.0, Table 999 Total Public Sector - Australia – All levels of government (Table 3 Total Public Sector Balance Sheet), 2014-15 edition.

4 This is based on data Total Public Sector - Australia - All levels of government.

Total Public Sector Net Debt + Unfunded Superannuation Liabilities, Australia



Source: ABS, KPMG Economics

In as much as the total debt is important, what is probably more important is understanding the composition of the incremental spending that is causing a country's debt to increase. In simple terms, there may be 'good' or 'bad' debt. Debt funding that is being applied to create assets that enhance the economic and social infrastructure of a country could be considered as 'good' debt; whereas debt funding that is being applied to recurrent or one-off expenditure that doesn't create a permanent benefit over and above this cost could be considered as 'bad' debt.

Where this becomes an even more problematic issue is where a country historically uses its capacity to source funding on 'bad' debt opportunities, thereby limiting its ability to obtain well-priced borrowings for 'good' debt opportunities.

The impact of government debt on sovereign credit rating

The level of indebtedness of a country's government sector does have the capacity to influence the wellbeing of the population of that country.

At its most simple level, the higher the country's government debt, the greater will be the associated interest payments on that debt. For every dollar of interest paid on that debt is a dollar that cannot be utilised on services provided by the government to the general population, including healthcare, public transport, education, etc. Therefore, it is important that government debt is accrued on economic enhancing expenditure, such as intergenerational infrastructure, responding to crises using fiscal stimulus packages, etc.

The value of the interest payments made by government is therefore a function of both the amount of debt and the rate of interest being applied to that debt. And, it is important to recognise there is an explicit linkage between the amount of debt and the interest rate being charged.

Countries' credit worthiness are rated by private sector agencies, with the three main rating agencies being Moody's, Standard and Poor's and Fitch Ratings, and scaled using a ratings notation from high risk (C) to low risk (Aaa/AAA). Essentially, a rating notation is an assessment of the issuer's default risk, being their ability to pay back both capital and interest on time.

Table 1: Credit Quality Ratings and what they mean[5]

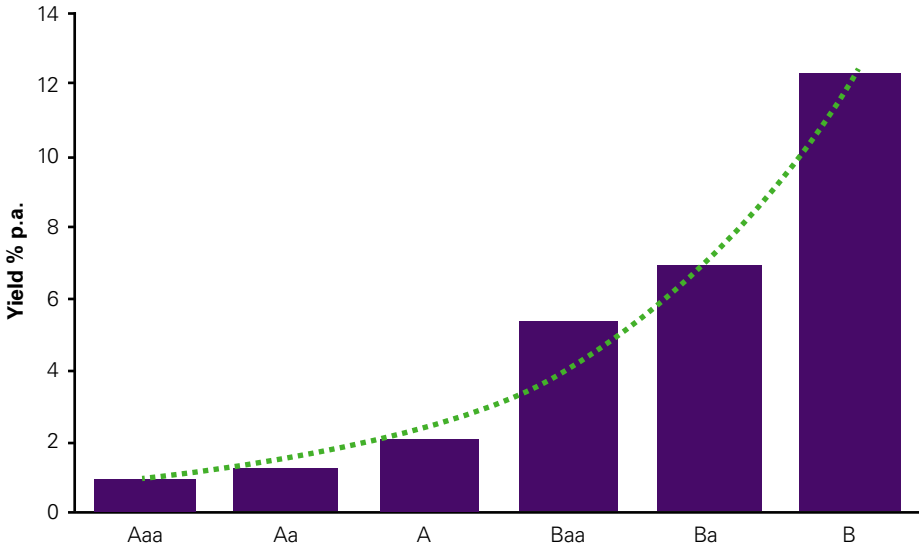
Moody's	Standard & Poor's	Fitch IBCA	
Aaa	AAA	AAA	Gilt edged. If everything that can go wrong does go wrong, they can still service debt.
Aa	AA	AA	Very high quality by all standards.
A	A	A	Investment grade; good quality.
Baa	BBB	BBB	Lowest investment-grade rating; satisfactory, but needs to be monitored.
Ba	BB	BB	Somewhat speculative; low grade.
B	B	B	Very speculative.
Caa	CCC	CCC	Even more speculative. Substantial risk.
Ca	CC	CC	Wildly speculative. May be in default.
C	C	C	In default. Junk.

Generally, bonds with the highest quality credit ratings always carry the lowest yields (interest cost), while bonds with lower credit ratings carry higher yields. Broadly, the yield on a government bond reveals a scale of credit worthiness; the higher the yield, the higher the risk.[6]

5 American Association of Individual Investors, '*How credit agencies affect bond valuations*', November 2001.

6 Ibid.

Average 10-year bond yields by Sovereign Credit Rating, 9 June 2016



Source: Trading Economics, Moody's, KPMG Economics

Research by the European Central Bank indicates the sovereign debt rating ascribed to a country is mainly explained by the level of GDP per capita, real GDP growth, external debt, the public debt level and the government budget balance.[7]

So, the level of government debt impacts a nation's population two-fold:

- The higher the debt, the more money is directly required to be allocated in the annual government budget towards interest payments (and eventually debt repayment), which therefore cannot be spent on other goods and services provided by public sector.
- The higher the debt, the lower the credit rating will be for that country. The lower the credit rating, the higher the bond yield will need to be to attract investors for the expected default risk. The higher the bond yield, the higher the interest payments, which again means less can be spent on other service provision by the Government.

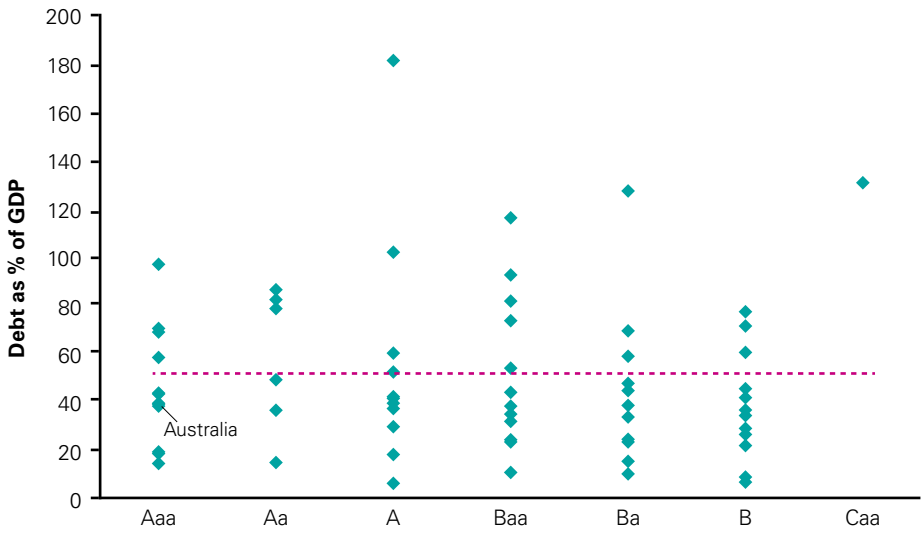
Based on market data for 9 June 2016, as shown in the yield curve in the above chart, the difference in average bond yields between credit ratings accelerates as the risk rating increases. That is, the bond yield differential between Aaa/AAA and Aa/AA is only about 0.28 percent, while this differential increases to 0.81 percent between Aa/AA and A rated sovereign debt. While this does not appear a significant difference, in the case of Australia, if our bond yields increased by 0.28 percent on our current national debt, the incremental interest payments would be about $1.06 billion per annum. This is about equivalent to what it cost to build the recently opened Comprehensive Cancer Centre in Melbourne.

Given the nature of ratings methodologies, it does not appear that once specific debt-to-GDP level have been reached there is an automatic downgrading of the sovereign risk rating countries receive. KPMG Economics has analysed country debt data from the World Bank and sovereign credit risk ratings from the three major agencies, and based on this analysis:

- there is a significant spread of debt-to-GDP debt levels within credit rating bands, and
- there is no apparent maximum debt-to-GDP threshold for specific credit rating bands, as if this were the case, the graph would show 'step-changes' between each credit rating band.

7 https://www.ecb.europa.eu/pub/pdf/scpwps/ecbwp711.pdf

Central Government Debt as a % of GDP (2014)



Source: WorldBank, Moody's, KPMG Economics

From Australia's perspective, the continuation of budget deficits, and the adding of this financial shortfall to our national debt levels, is likely add to pressure on the continuation of our Aaa/AAA credit rating, although as noted above, sovereign debt is just one factor agencies consider when setting the default credit rating.

The consequence of dropping from an Aaa/AAA to Aa/AA credit rating primarily relates to investor confidence, and at the margin, a higher cost of capital to finance debt, both for the government and the private sector, which reduces allocative efficiency, creating an additional deadweight loss to society.

Government debt and economic growth

Herndon, Ash and Pollen (2013) found that in 20 advanced economies in the post-World War II period, those economies with debt-to-GDP ratios:

- below 30 percent grew at an annual rate of 4.2 percent
- between 30 and 60 percent grew at an annual rate of 3.1 percent
- between 60 and 90 percent grew at an average annual rate of 3.2 percent, and
- of 90 percent or more grew at 2.2 percent per annum.

Herdon, Ash and Pollen also identified the impact of public debt on real economic growth over different time periods (see Table 1), with the broad conclusion being the greater the level of public debt in relation to GDP, the lower the real economic growth that was achieved.

Table 1: Real GDP growth (%) by Public Debt / GDP category

Period	< 30%	30% < 60%	60% < 90%	90%+
1946-2009	4.2	3.1	3.2	2.2
1950-2009	4.1	3.0	3.1	2.1
1960-2009	3.9	2.9	2.8	2.1
1970-2009	3.1	2.7	2.6	2.0
1980-2009	2.5	2.5	2.4	2.0
1990-2009	2.7	2.4	2.5	1.8
2000-2009	2.7	1.9	1.8	1.7

Source: Herdon, Ash & Pollen (2013)

This research confirms the intuitive perspective postulated earlier, that for every dollar spent on interest repayments is a dollar that cannot be spent on economic enhancing activities, and the size of a country's debt does matter; it essentially acts as 'handbrake' on economic growth. Based on the Herndon et al findings, simple compounding shows that an economy that can keep its debt-to-GDP levels between the 30 percent and 60 percent band will be nearly 22 percent larger after 20 years than if the economy ballooned its debt position out to be 90 percent or more of GDP and did nothing to rein it in.

Fiscal consolidation to reduce government debt

Fiscal consolidation is a policy aimed at reducing government deficits and debt accumulation, and its objective can be achieved through either reducing government spending or increasing government receipts, such as through tax increases, higher user fees and/or asset sales.

The theory

The theory of 'Ricardian equivalence' asserts funding government spending through means of a deficit (or increased debt) is not likely to stimulate the economy as households recognise that they are only going to be required to pay this additional spending back at a time in the future. This results in those non-credit constrained households increasing their savings by an amount equivalent to the additional government spending, resulting in no net increase in demand in the economy (and vice versa). That is, under normal conditions the management of a country's budget into a deficit will not stimulate economic growth, and conversely, the implementation of a policy of fiscal consolidation will not trigger an economic slowdown.

Keynes suggested that 'Ricardian equivalence' does not hold universally, especially in those periods where households are concerned about their future prosperity and when credit is limited. That is, government spending cuts – through reductions in transfer payments, decreased investment expenditure, and/or lower public sector labour costs – can directly influence the level of consumption and investment activity occurring within the economy. Further, an increase in taxes results in a lowering of consumers' after-tax wage, and thus causes households to spend less, reducing demand as a consequence. Simply, in recessionary situations, increasing government spending such that a deficit occurs does result in stimulating demand in the economy, while cutting government spending in those situations will exacerbate the problem.

Another exception to 'Ricardian equivalence' occurs where public debt is so high that it attracts a significant premium for default risk or inflation. A credible government policy of fiscal consolidation targeting a country's debt and deficit position could be viewed positively by capital markets, resulting in a reduction in the interest rate premium and a consequent stimulation of business investment. That is, when a country accumulates too much debt, or is operating with an unsustainably high budget deficit, then economic growth is retarded. By implementing fiscal consolidation, a country's debt and deficit position becomes more controllable, interest costs become lower, and growth accelerates.

Essentially household consumption and/or business investment are the transmission mechanisms through which a policy of fiscal consolidation flows through an economy. For households, fiscal consolidation programs that cut government spending reduce consumer uncertainty about taxes, both in the short and longer term. This creates expectations for higher disposable income, generating a positive wealth effect, resulting in increased demand for durable and non-durable goods. For fiscal consolidation programs that result in increased taxes, households not only spend less on consumption goods and services (as the post-tax wage has fallen), but they also spend less on durable goods as their future income expectations are scaled back.

Similar to households, businesses also form expectations about future tax payments based on the spending patterns of government. Simply put, higher government spending, higher taxes now and later; lower government spending, lower taxes now and later. But, a fiscal consolidation program that reduces the number and compensation of public sector employees also has the effect of impacting the private sector through increasing the supply, and reducing the cost, of skilled labour. Therefore, the post-tax return on new business investment is anticipated to increase through both lower taxes and lower labour costs, which creates the incentive for business to increase investment in buildings, plant and equipment. Conversely, a fiscal consolidation program that focuses on tax increases rather than government spending cuts does not impact the labour market in the same way (i.e. it does not cause the price of labour to fall), and it reduces the propensity of businesses to invest in that jurisdiction as the post-tax return on investment falls relative to its historical position, and most likely, competitive position. These effects mean business investment decline under fiscal consolidation programs involving tax increases.

The empirical evidence

There is a general consensus as to the structure of the fiscal consolidation that is necessary for the maximum likelihood of a lasting debt reduction. That is, fiscal consolidations based upon expenditure cuts have tended to be more effective than tax-based consolidations. Numerous empirical studies confirm this:

- Broadbent and Daly (2010) conclude in a review of every major fiscal correction in the OECD since 1975, decisive budgetary adjustments that have focused on reducing government expenditure have (i) been successful in correcting fiscal imbalances; (ii) typically boosted growth; and (iii) resulted in significant bond and equity market outperformance. Tax-driven fiscal adjustments, by contrast, typically fail to correct fiscal imbalances and are damaging for growth.
- Lilico, Holes and Sameen (2009) found that successful fiscal consolidation programs were comprised of at least 80 percent government spending reductions, and no more than 20 percent tax increases. They also noted that provided spending cuts dominate over tax rises, tightening appears to be more likely to promote recovery than impede it – particularly so when fiscal tightening supports a lower interest rate than would otherwise have been the case; and particularly when deficits are large and spending is high.
- Biggs, Hassett and Jensen (2010), which found successful fiscal consolidation programs averaged 85 percent spending cuts and 15 percent revenue increases, while unsuccessful ones averaged 47 percent spending cuts and 53 percent revenue increases.
- Alesina and Ardagna (2009) went as far as to conclude that successful consolidations were based predominately, or entirely, on government spending reductions.

In addition to identifying the optimal fiscal consolidation arrangements, the literature also points to which elements of these arrangements are more important. For example, Alesina and Perotti (1995) find that cuts in transfer programs and government wage expenditures are more effective than other expenditure cuts. More recent empirical analysis by Broadbent and Daly (2010) supports the IMF (1999)[8] and the OECD (2007)[9] finding that governments tend to be more successful when they cut politically difficult areas such as social transfers, while reductions in government non-wage expenditures and government investments contribute relatively little to the probability of a successful fiscal consolidation.

8 "…fiscal adjustments which rely primarily on spending cuts on transfers and the government wage bill have a better chance of being successful and are expansionary. On the contrary fiscal adjustments which rely primarily on tax increases and cuts in public investment tend not to last and are contractionary." http://www.nber.org/papers/w5730

9 A greater weight on cuts in social spending tended to increase the chances of success. A reason for this could be that governments more committed to achieving fiscal sustainability may also be more likely to reform politically sensitive areas. As a by-product of doing so, they may at the same time bolster the credibility of the consolidation strategy, thereby improving its chances of success. OECD, *IV. Fiscal Consolidation: Lessons from Past Experience.* http://www.oecd.org/economy/outlook/38628499.pdf

What does this mean for Australia?

Our analysis to date suggests that Australia's debt position has been steadily rising since the GFC, and based on current policy settings, our medium term estimates of the structural position of the Commonwealth budget suggest we will continue to run deficits as a nation for the foreseeable future. Further, while at the moment Australia enjoys a below average debt-to-GDP ratio relative to other Aaa/AAA credit rated countries, given our forward estimates of the Budget deficit, this is anticipated to move to an above average level by the end of FY18.

While this outcome is not dire, the bells are ringing.

A narrow program of fiscal consolidation could be employed by the Federal Government to implemented so as to help arrest the deficit position, and create 'headroom' in the nation's balance sheet for future investment.

Consistent with the empirical studies noted above, KPMG Economics have run five simulations where Australia's debt-to-GDP ratio was targeted to achieve a reduction of 5 percent over the Base Case between calendar years 2016 and 2020. The five scenarios were:

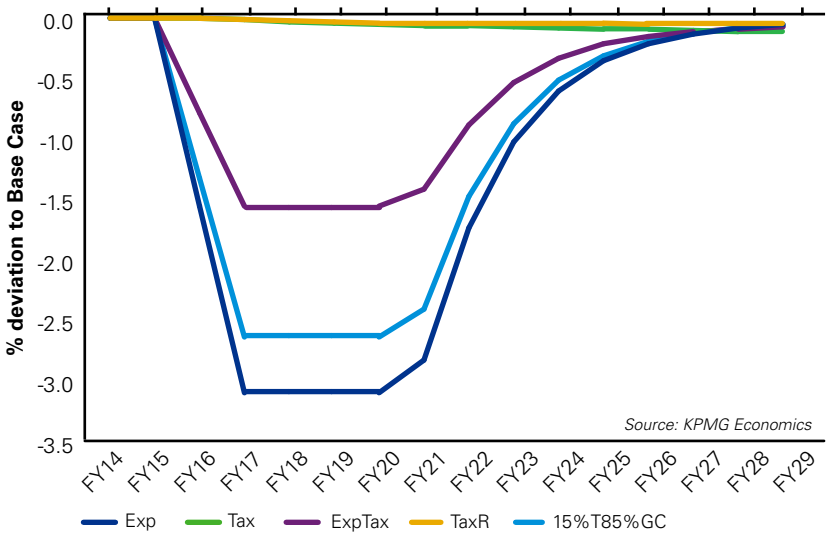
- Reduce government consumption only (**Exp**).
- Increase both Corporate Tax and Household Tax rates consistent with their relative contribution to the current tax receipts; being 33 percent and 67 percent respectively (**Tax**).
- Increase Household Tax rates only (**TaxR**).
- Reduce government consumption and increase Corporate and Household Tax rates so that expenditure measures and tax measures contribute 50/50 to the debt reduction (**ExpTax**).
- Reduce government consumption and increase Corporate and Household Tax rates so that expenditure measures and tax measures contribute 85/15 to the debt reduction – consistent with the empirical findings of Biggs et al (**15%Tax85%GC**).

Our findings

The simulations indicate that negative impacts on the Australia economy over the medium term of a fiscal consolidation policy aimed at reducing our debt-to-GDP ratio by 5 percent over 5 years are minimised when government expenditure reductions are the sole mechanism utilised. In fact, the Australian economy becomes better off after 12 years through the adoption of this policy, with GDP 0.033 percent higher by the end of FY29.

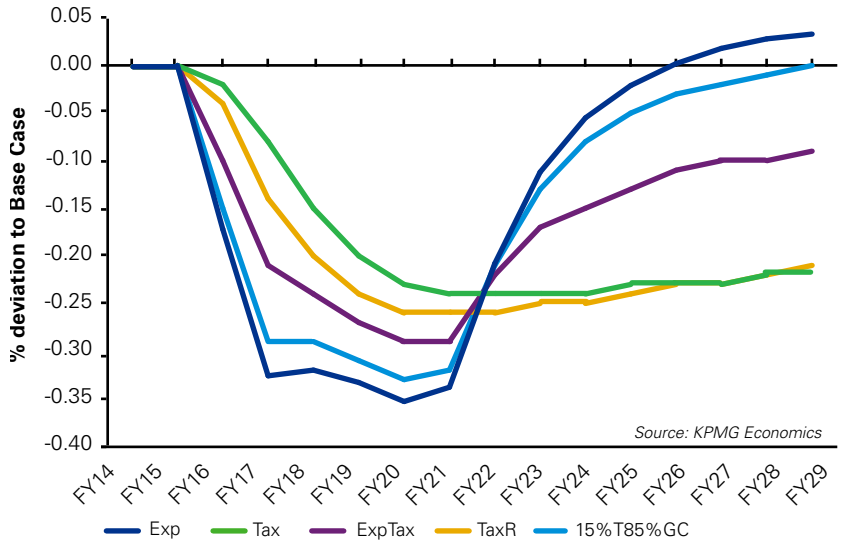
Scenario Chart 1: Government consumption

Deviation in annual government consumption to Base Case



Scenario Chart 2: Real GDP

Deviation in annual real GDP to Base Case



The next least distorting policy option is one where 85 percent of the fiscal consolidation occurs through government expenditure cuts, with only 15 percent sourced through increased taxation receipts. By the end of FY29, the Australian economy is back at the same GDP levels as the Base Case. Interestingly, this result also mirrors the findings of the Biggs et al (2010) study.

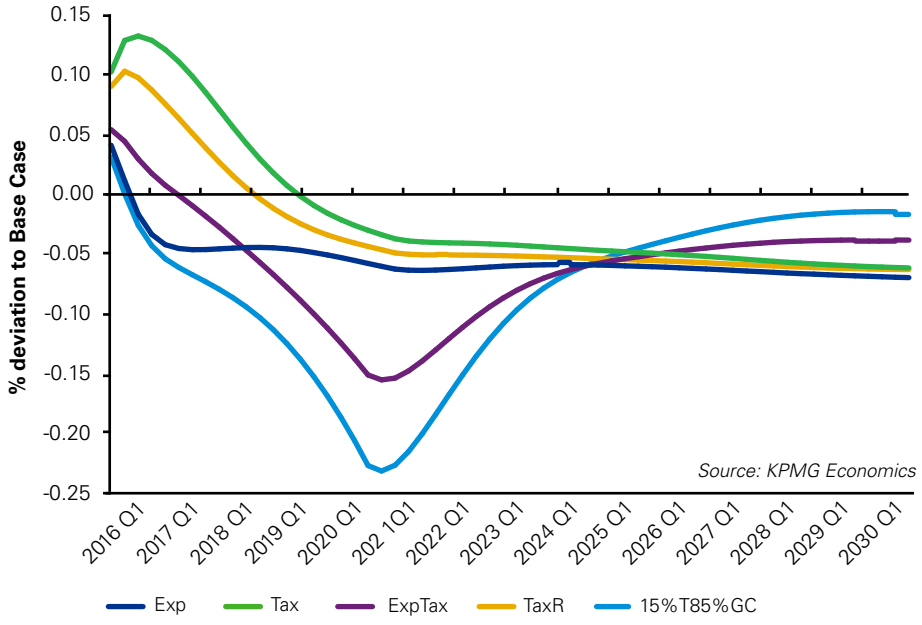
The results also confirm that the greater the reliance on increased tax receipts to achieve fiscal consolidation rather than a reduction in government expenditure, the worse off the outcome is to the national economy. As shown in Scenario Chart 2, where either increased household tax receipts or a combination of increased company and household tax receipts, is the only mechanism employed by government to achieve fiscal consolidation, then the economy remains about 0.25 percent below the Base Case out into the medium term.

Other key findings of our analysis includes:

- short term interest rates initially fall greatest under a combination of expenditure cuts and tax increases relative to either full expenditure cuts or full tax increases, but then recover about 10 years after the policy intervention;

Scenario Chart 3: Short term interest rates

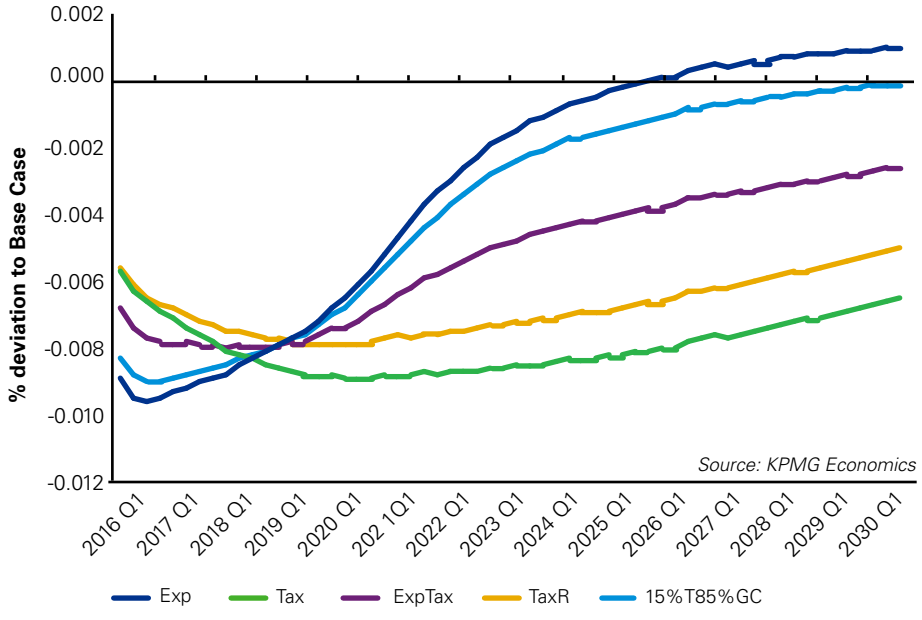
Deviation in 3-month interest rates to Base Case



- the exchange rate is lower in the short term under a fiscal consolidation policy targeted at reducing government expenditure, but it recovers relative quickly back to baseline levels;

Scenario Chart 4: Exchange rates

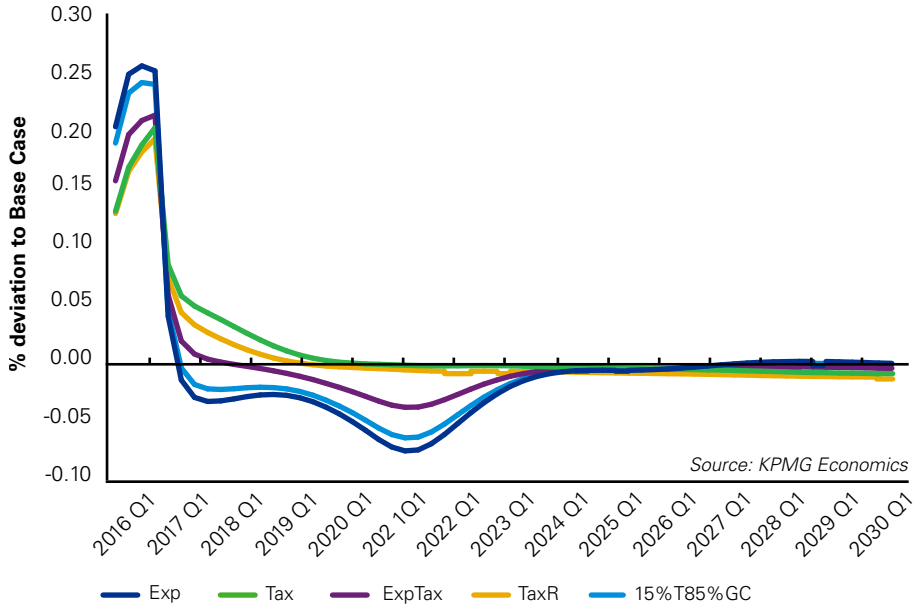
Deviation in USD/AUD to Base Case



- in all cases inflation spikes up in the near term, but then falls as the domestic currency price for imports falls, and

Scenario Chart 5: Inflation rates

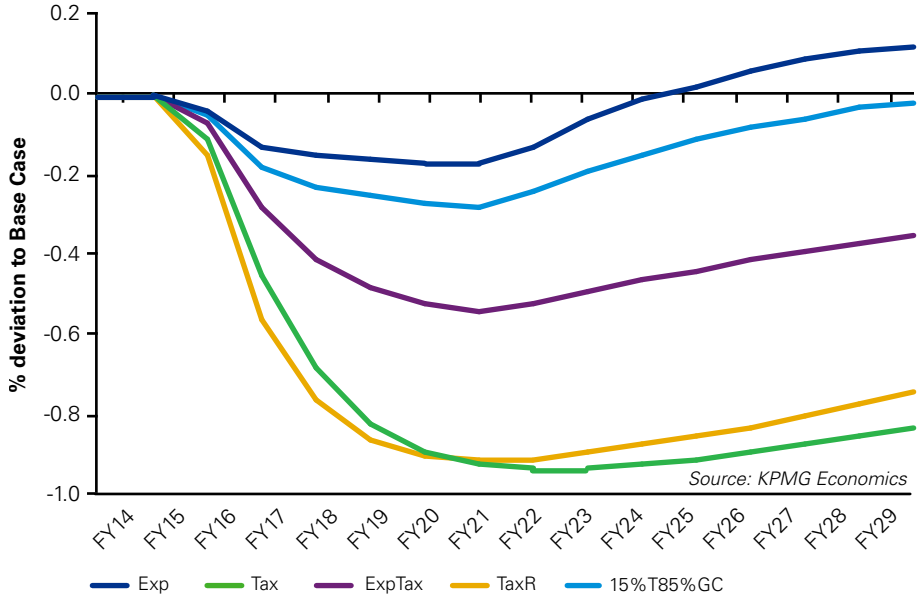
Deviation in quarterly inflation rates to Base Case



- household consumption is negatively impacted most and for longer in those scenarios involving increasing taxes to achieve fiscal consolidation.

Scenario Chart 6: Household consumption

Deviation in annual household consumption to Base Case



Conclusion

Australia is in an enviable position compared to many other countries around the world. Our economy has grown strongly for more than two decades; we weathered the GFC better than nearly every other nation; and there continue to be many opportunities for our citizens to live well and prosper.

A central element of this economic prosperity has been the successful management of our national balance sheet. We have achieved budget surpluses in times of prosperity that have enabled the repayment of debt; and we have run budget deficits in times of economic hardship in order to stimulate demand and provide a safety net to those who become unemployed.

However, it seems we are on the cusp of falling into the pack of economic also-rans. Our budget has been running a deficit in the order of -2 percent to -4 percent for 7 years now; our national indebtedness is now about $33,500 per citizen; and it may only be a few years before Australia dips below the 'average' for Aaa/AAA credit rated countries. Again, while this outcome is not dire, the bells are ringing.

To improve this situation the Government will need to implement a program of fiscal consolidation. It can do this by either cutting spending, increasing taxes or both.

KPMG Economics has found that empirical studies have shown that fiscal consolidation programs that rely entirely, or even mostly, on reductions to government expenditure are more likely to meet their objective of reducing budget deficits and government debt, compared to programs that rely primarily on tax increases.

To look at this in the real world we completed a series of forward looking simulations to ascertain, given our current economic situation, what modest fiscal consolidation policy setting Australia could adopt if we were seeking to reduce our debt-to-GDP ratio by 5 percent by the end of calendar year 2020.

On the basis of achieving the objective of creating the least cost to the household sector, the first-best solution is to sufficiently reduce government expenditure so the debt-to-GDP target is achieved. The second-best solution, consistent with the findings of Biggs et al, is to structure the policy arrangement so that 85 percent of the fiscal consolidation is achieved through cuts to government expenditure, while the remaining 15 percent is achieved through increases in tax receipts (one-third from companies and two-thirds from households). While the worst solution is one where additional taxes are levied on companies and households, and there are no corresponding cuts to government expenditure.

In our earlier report, *Solving the Structural Deficit*, we acknowledge that achieving a solution to the debt and deficit challenge facing Australia is hard. Very hard. However, through that earlier analysis we were able to identify a range of measures aimed at reducing net government expenditure in four key areas of health and aged care, welfare, superannuation and aged pension, and education. These potential reform measures – which also included an explicit recognition that the base rate for Newstart increase from $250 to $300 per week – generated around $12.0 billion in savings.

The analysis contained in this report shows the least distortionary impact to Australia's economy of achieving a 5 percent net debt reduction by 2020 is to reduce Government expenditure by between 2.5 percent and 3.0 percent per annum, or between $10.8 billion and $13.0 billion for FY17. As KPMG has previously shown, clearly such a quantum reduction is achievable even without putting at risk the social safety net we want our community to continue to be covered by.

References

Alesina, Alberto, and Roberto Perotti. *Reducing Budget Deficits*. 1994-95 Discussion Paper Series No. 759. Stockholm, 1995.

Alesina, A. and Ardagna, S., *Large changes in Fiscal Policy: Taxes verses Spending*, National Bureau of Economic Research, Working Paper No.15438, Oct. 2009.

American Association of Individual Investors, *How credit agencies affect bond valuations*, November 2001.

Australian Bureau of Statistics, Cat. No 5512.0, Government Finance Statistics, Australia, Edns.

Biggs, A, Hassett, K. and Jensen, M., *A Guide for Deficit Reduction in the United States based on historical consolidations that worked*, American Enterprise Institute, Economic Policy Working Paper No.2010-04, December 27 2010.

Giavazzi F. and Pagano M, *Can Severe Fiscal Constractions be Expansionary? Tales of Two Small European Countries*, National Beureau of Economic Research, Macroeconomics Annual, 1990.

Giavazzi, F., Jappelli, T., and Pagano, M., *Searching for Non-Linear Effects of Fiscal Policy: Evidence from Industrial and Developing Countries*, European Economic Review, V. 44(7), 2000, 1259–89.

Herndon, T., Ash, M. and Pollin, R., *Does high public debt consistently stifle economic growth: A critique of Reinhart and Rogoff*, Political Economy Research Institute, University of Massachusetts Amherst, Working Paper Series, Number 322, April 2013.

IMF, *Fiscal Adjustments in OECD Countries*, 1997.

Lilico, A., Holmes, E. and Sameen, H., *Controlling Spending and Government Deficits: Lessons from History and International Experience*, Policy Exchange, No. 2009.

OECD. *IV. Fiscal consolidation: Lessons From Past Experience*. In OECD Economic Outlook. 2007.

Perotti, R., *Fiscal Policy in Goods Times and Bad*, Quarterly Journal of Economics, V. 114(4), Nov. 1999, 1399–1436.

Reinhart, C. and Rogoff, K., *Growth in a Time of Debt*, American Economic Review, V. 100[2], p.577, May 2010.

United States Joint Economic Committee, *Spend Less, Owe Less, Grow the Economy*, Republican Staff Commentary, 15 March 2011.

Contact

Brendan Rynne
Partner, Chief Economist
+61 3 9288 5870
bjrynne@kpmg.com.au

kpmg.com.au

Download on the App Store

July 2016. NSW N14186ADV