

Repaying the fiscal stimulus

Phil Hagan and Nicholas Gruen

18th August 2010

If you hadn't spent the money, there would have been waste. . . . You would have had high unemployment, you would have had capital assets not fully utilised - that's waste. So your choice was one form of waste versus another form of waste. And so it's a judgment of what is the way to minimise the waste. No perfection here. And what your government did was exactly right. So, Australia had the shortest and shallowest of the downturns of the advanced industrial countries. And your recovery actually preceded . . . China. . . . Your preventive action, you might say pre-emptive action, prevented the downturn while things got turned around in Asia, and they still have not gotten turned around in Europe and America.

Joseph Stiglitz, 2001 Nobel Laureate in economics, 2010



I. Some simple figuring

One of the advantages Australia has had in current times is the fiscal prudence of past Federal Governments of both political persuasions. In many ways it is healthy that the Australian political debate is focussed on returning the budget to surplus. Several decades of bi-partisan support for fiscal prudence put Australia in a very strong position to fight the global downturn driven by the global financial crisis. But the politics of populist fiscal rectitude is not all upside.

First, it has prevented governments, particularly state governments, borrowing to invest in productivity and nation building infrastructure. Second it has dogged the current Federal Government as it followed the economic advice it was receiving from officials to fight the downturn with a fiscal stimulus. Although many economists such as Joseph Stiglitz quoted above regard the fiscal stimulus as possibly the best designed and most economically successful in the developed world, the stimulus has been successfully attacked as wasteful and unnecessary.

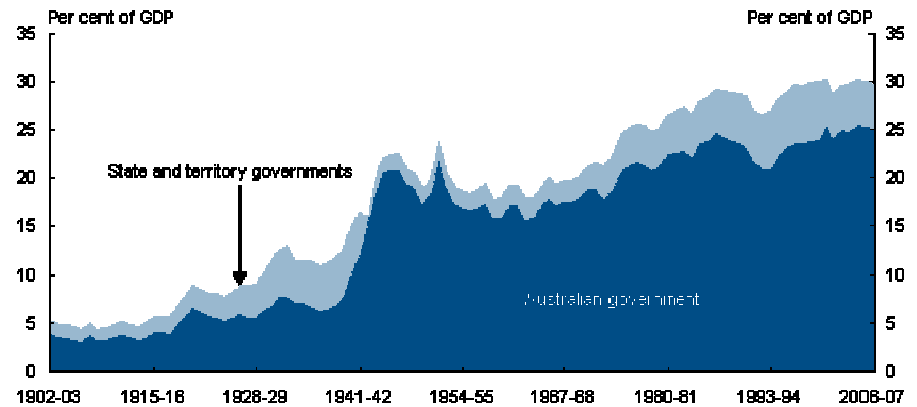
Many Australians wonder whether the stimulus was ever worthwhile and are concerned about paying off the debt which has arisen in funding recent budget deficits. Those deficits were driven in the most part by the economic downturn but also in substantial part by the Government's discretionary stimulus.

Yet if the stimulus has succeeded in protecting Australians from unemployment, a substantial portion of its cost can be met from the taxes paid by those whose labour or whose capital might have otherwise lain idle. This paper offers some calculations which allow us to quantify these effects in an indicative way.

As illustrated in Chart 1, Australia's tax to gross domestic product (GDP) ratio has trended up over time such that, currently, the Australian Government captures around 25 cents in each dollar's worth of production, while State and territory governments secure another 5 cents.



Chart 1: Australian government and state taxation (1902-03 to 2006-07)



Source: Australian Treasury

This has important implications for the ultimate cost of economic stimulus. Put simply, for each additional dollar of economic production or GDP generated by an economic stimulus, the additional tax from the additional activity would pay back around 25 cents of that amount to repay the federal debt. And it would add five cents to state government coffers.

In what follows we offer some simple calculations firstly of the extent to which the economic stimulus increased economic activity and secondly of the extent to which this contributed to additional taxation revenue. Considering these two factors together enables us to estimate the extent to which the stimulus was self funding, or, put another way, the number of cents Australian taxpayers must repay for each dollar spent or foregone arising from the economic stimulus. Because there are qualitative differences between the way their economic effects worked their way through our economy, we consider the economic effect of the cash payments made to Australians predominantly in 2008-9 separately from the investment spending which followed those payments the bulk of which was expended in 2009-10 (See Table 1).



Table 1: Composition of the fiscal stimulus (\$ billion)

<i>Item</i>	<i>2008-09</i>	<i>2009-10</i>	<i>2010-11</i>	<i>2011-12</i>
Transfers	20.43	4.23	1.78	1.59
Major fiscal stimulus packages				
ESS package (consumption)	9.55	0.65	0.07	0.00
Nation Building and Jobs Plan (consumption)	10.49	1.72	0.00	0.00
2009-10 Budget Measures				
2009-10 Budget net pension spend	0.39	1.86	1.71	1.59
Investment	4.52	21.93	17.27	4.91
Major fiscal stimulus packages				
ESS package (investment)	0.12	0.07	0.00	0.00
Dec Nation Building package (all investment)	0.88	1.95	0.39	-0.19
Nation Building and Jobs Plan (investment)	2.04	16.19	10.03	1.67
2009-10 Budget Measures				
2009-10 Budget infrastructure (investment)	1.48	3.72	6.85	3.43
COAG reforms	1.48	3.72	6.85	3.43
COAG funding package (transfers)	3.50	1.78	2.23	3.57
Total transfers	23.93	6.01	4.01	5.16
Total investment	4.52	21.93	17.27	4.91

Source: Treasury Briefing Paper for the Senate Inquiry into the Economic Stimulus Package.

II. Cash payments

According to the Australian Treasury, the (immediate) flow-through to spending from transfer payments is around 70 per cent. While this figure came under heavy questioning at the time of the stimulus, subsequent research has broadly supported the Treasury view. Further, of the 70 cents that was spent from each dollar paid to those in the community, around 15 per cent of that expenditure would have purchased imports, which would not have added to Australian demand or production.

Taking these two 'leakages' into account suggests that for each dollar distributed in cash payments, GDP was stimulated by around $1 \times 0.7 \times 0.85 = 59.5$ cents. This is the first round effect. If we were at full employment the additional demand created by the stimulus would simply feed into inflation (or be choked off by the Reserve Bank with higher interest rates).

With other demand turning down however, the additional consumer demand for goods and services helps pay employers' bills and recirculates in the economy – as payments are made to labour that would otherwise be unemployed and capital that would otherwise be less well utilised. Those workers and investors have more money which



they spend and so on. This is the multiplier working its way through the system to expand production closer to its full employment level.

Economists differ on what multipliers to apply, but applying the multipliers from the OECD Treasury cites in its own work, raises our estimate of the first round effect above – of 59.5 cents of GDP expansion for every \$1 paid in cash transfers – to somewhere between 70 and 80 cents in the dollar. We consider these numbers conservative and have taken the average of them. Thus we assume that every dollar spent on cash handouts generates 75 cents in additional GDP. And this additional 75 cents of activity generates $75 \times 25\% = 18.75$ cents of additional federal tax revenue and 3.73 cents of state tax revenue or 22.5 cents total government revenue.

Thus for each dollar Australians received from the cash payments of late 2008 and early 2009, they only increased the Australian governments' debt that must ultimately be serviced and/or paid back by around 77.5 cents with the other 22.5 cents being the tax windfall from additional employment. Australians received nearly \$30 billion in one off transfers but will need to service and/or only around \$23.2 billion in state and federal taxes (See Table 2).

	Cash Transfers
Nominal amount of stimulus - immediate budget cost	\$1.00
Propensity to be spent	0.7
Flow through to spending (domestic prodn + imports)	\$0.70
Propensity to import	0.15
<u>Flow through to domestic spending (ie GDP)</u>	<u>\$0.595</u>
<u>Direct (first round) stimulus to GDP</u>	<u>\$0.595</u>
0.25 times Flow through to GDP (Cth tax take)	\$0.1488
0.05 times Flow through to GDP (States, Territory tax take)	\$0.0298
Total tax take from first-round stimulus to GDP	\$0.1785
Outstanding debt from first round stimulus	\$0.8215
OECD multipliers	0.75
0.25 times Flow through to GDP (Cth tax take)	\$0.1875
0.05 times Flow through to GDP (States, Territory tax take)	\$0.0375
Total tax take from full effects of stimulus	\$0.2250
Outstanding debt from full effects of stimulus	\$0.7750
2008-9 Transfers (Billion)	\$23.93
2009-10 Transfers (Billion)	\$6.01
Total 2008-9 - 2009-10 Transfers (Billion)	\$29.94
Additional tax collected from Cash Stimulus (Billion)	\$6.74
Remaining cost of Stimulus (Billion)	\$23.20



Box 1 Input-Output Tables and Analysis

Input-output tables — such as those published regularly by the ABS — are at the core of our understanding of the production side of an advanced economy like Australia's works. The two-way input-output accounting framework which underlies such tables enables changes in one sector of the economy to be traced through the economic system to show how they affect markets for products, labour and capital.

The input-output model relates industry outputs to final demand through input requirements coefficients. Multipliers are a summary way of expressing all the responses (both direct and indirect) to some economic change. Multipliers can take a number of forms.

Output multipliers relate changes in industry outputs to changes in final demands. More specifically, they measure the sum of direct and indirect requirements from all sectors needed to deliver an additional unit of output of a particular industry to satisfy final demand (often expressed as the total value of production that is necessary to satisfy a one dollar change in final demand for the output of a particular industry).

Employment multipliers measure the employment response to an increase in final demand, both directly in the industry concerned and indirectly in supplying industries.

Income multipliers measure the amount of income that is generated by a change in final demand. Income normally refers to payments to primary factors (value added); that is wages to labour and (gross) returns to capital. Thus, an increase in the demand for and output of a particular industry will not only result in income generated directly in that industry, but also in income being generated in other industries to service the additional inputs required by the first industry.

III. Investment spending

This section sets out the economic logic of the fiscal stimulus as it applies to infrastructure spending such as the spending on school buildings. Each dollar spent on infrastructure goes directly into the economy – none of it is saved. However of that one dollar around 15 cents is spent on imports. This is the aggregate import intensity of GDP and in our opinion is probably conservative. It is hard to believe that a full 15 percent of the cost of a school hall would be the cost of imported materials. Nevertheless, as Treasury did, we use this number to give us a first round stimulus effect of infrastructure spending during an economic downturn as follows. One dollar of expenditure on infrastructure produces $1 \times 0.85 = 85$ cents impact on GDP.



The demand for goods and services generated by the infrastructure spending recirculates in the economy. The OECD has estimated the multiplier applying to Australian government expenditure on infrastructure at between 1.1 and 1.3. We have taken the average of these two numbers and applied a multiplier of 1.2. This raises our estimate of the first round effect above – of 85 cents of GDP expansion for every \$1 paid in cash transfers – to \$1.20 GDP expansion for every one dollar spent on infrastructure when the full multiplier effects are taken into account. And this additional \$1.20 of activity generates $120 \times 25\% = 30$ cents of additional federal tax revenue and six cents of state tax revenue or 36 cents of total government revenue.

The conclusion is that for each dollar Australian governments spent on infrastructure as part of the stimulus package, the debt incurred was much less than that – of the order of 64 cents with the remaining 36 cents representing additional tax revenue from labour and capital resources that would otherwise be lying idle. Thus of the \$26.5 billion dollars of infrastructure budgeted to be funded in the years 2008-9 and 2009-10 Australian taxpayers will need to service and/or repay only around \$16.9 billion of debt via state and federal taxes.

The implementation of some of the infrastructure was wasteful. Some amount of that waste was a logical product of the speed with which the project was rolled out. It was necessary for the projects to be rolled out rapidly to deliver on the macroeconomic intent of the policy – which was to stimulate the economy to minimise the downturn in employment in response to the financial crisis. There was thus a trade-off between speed and quality. Erring on the side of the former minimised the macroeconomic waste of unemployment at the cost of the micro-economic waste of additional costs for individual projects. There is also evidence of this tradeoff between different kinds of waste when one observes that the process employed for school infrastructure spending in NSW generated a disproportionate number of complaints about bad design and poor value for money, but also far fewer delays than the spending in other states.

The recent interim report of the BER Implementation Taskforce enables us to come to some broad conclusions about overall level of micro-economic inefficiency involved in the stimulus spending on schools.

The Taskforce does not have sufficient pre-BER cost data at this interim stage to conclude, but from what limited data and insights we do have, we think the overall BER versus pre-BER cost differential, for each education authority [a reasonable proxy for the micro-economic inefficiency of the program], is in the range from 0% to plus 12%. The higher costs have resulted from the scale, time and complexity of the undertaking. Overall, delivering



BER P21 within the short timeframe to achieve the economic stimulus objectives may have added a premium to pre-BER business as usual costs of between 5-6%.¹

If this is representative of the additional costs of projects arising from the speed of their implementation, we come to the following conclusion. Between financial year 2008-9 and 2009-10 spending of \$26.5 billion on infrastructure was budgeted to be spent. Because of the speed with which it was built each dollar spent on infrastructure produced infrastructure worth around 94-95 cents. The addition to Australia's capital stock from the 26.5 billion spend was therefore of the order of \$25 billion.

Thus the net value of the additional expenditure of \$26.5 billion on infrastructure in the years 2008-9 and 2009-10 – the increase in Australia's capital stock less the resulting debt was around \$8 billion dollars. These benefits are in addition to any social and health benefits to Australian society from lower unemployment. See Table 3.

¹ Building the Education Revolution Implementation Taskforce, 2010, Interim Report, accessed on 15th August 2010 at <http://www.bertaskforce.gov.au/pages/publications.aspx>.



Table 3: How infrastructure investments effect the budget

	Investment (infrastructure)
Nominal amount of stimulus - immediate budget cost	\$1.00
Propensity to be spent	1.0
Flow through to spending (domestic prodn + imports)	\$1.00
Propensity to import	0.15
Flow through to domestic spending (ie GDP)	\$0.85
Direct (first round) stimulus to GDP	\$0.85
0.25 times Flow through to GDP (Cth tax take)	\$0.2125
0.05 times Flow through to GDP (States, Territory tax take)	\$0.0425
Total tax take from first-round stimulus to GDP	\$0.2550
Outstanding debt from first round stimulus	\$0.7450
OECD multipliers	1.20
0.25 times Flow through to GDP (Cth tax take)	\$0.3000
0.05 times Flow through to GDP (States, Territory tax take)	\$0.0600
Total tax take from full effects of stimulus	\$0.3600
Outstanding debt from full effects of stimulus	\$0.64
2008-9 Transfers (Billion)	\$4.52
2009-10 Transfers (Billion)	\$21.93
Total 2008-9 - 2009-10 Transfers (Billion)	\$26.45
Additional tax collected from Stimulus (Billion)	\$9.52
Remaining cost of Stimulus (Billion)	\$16.93
Total value of Infrastructure per dollar invested	94%
Total value of Infrastructure built	\$24.86
Net benefit from infrastructure spending	\$7.94

