

THE VIRTUE *of saving*

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This paper examines the determinants of real income per capita and the international effects of productivity growth and saving. The findings suggest that there are good reasons for Australia to adopt policies which increase the saving rate. First, it would allow more investment spending to be funded from domestic sources so that it makes a greater contribution to national wealth. Maintaining the level of investment will support the growth of productivity. Also, increased saving will tend to reduce the value of the Australian dollar which will stimulate the economy. An earlier version of this paper was presented to the 2014 Australian Centre for Financial Studies' Melbourne Money and Finance Conference.

The objective of this paper is to argue that Australia needs to improve its saving performance. This is not a popular view. Many commentators, including some professional economists, have raised doubts about the need for saving. They see no reason why governments should run budget surpluses or why saving through superannuation should be encouraged. One reason for this position is the naive Keynesian view that in so far as saving reduces aggregate demand, it reduces the rate of economic growth and increases the unemployment rate. This idea is often described as 'the paradox of thrift' — i.e. saving is personally desirable but counter-productive for the macro economy. Keynes actually incorporated this 'paradox' in his analysis, but recognised that earlier writers had cited it. It was popularised in a series of editions of Paul A. Samuelson's textbook *Economics*, first published by Harvard University Press in 1948.

The paradox of thrift is often explained in terms of a more general concept, the fallacy of composition. The latter argues that the desirable characteristics of an aggregate cannot be deduced from the desirable characteristics of its constituent parts. In this application, it is argued that what is good for an individual household (for example, saving) is not necessarily good for the whole economy. One interpretation of this argument is that it might be desirable for a government to run continuous deficits although an individual household cannot do this. It is sometimes argued that in a closed economy a budget deficit must be offset by private saving. This assumes that the budget deficit does not reduce business investment. More importantly, the current environment is one of open economies and this increases the similarity between an economy and the households which make it up. This is one of the important questions considered in this paper.

The first part of this paper will look at the factors which determine the rate of growth of average real income per capita. The most important component of the answer to this question is the growth of productivity. This section also considers the ageing of the population and the problem of ensuring that future retirees have an adequate retirement income. This obviously has budgetary implications because any shortfall will need to be covered by the aged pension.

The second section of the paper considers the implications of the floating of the Australian dollar in 1983. Around that time there was also an extensive deregulation of the Australian financial system which increased the integration of the Australian economy with the global economy — Australia became a small open economy. As a result of this, our saving performance has implications for the exchange rate and the current account deficit (CAD). In recent times these implications have been mainly expressed in public discussion in the form of concerns about increasing overseas ownership of Australian assets. This section will evaluate the validity of these concerns. It will also suggest appropriate policy responses to them.

The determinants of real income per capita

The influences on economic growth can best be discussed in terms of the 3Ps framework introduced by the Federal Treasury – productivity, labour force participation and population. First, we need to define each of the components of this relationship.

$$\text{Labour productivity (Prod)} = \frac{Y}{L}$$

where Y is real (inflation corrected) gross domestic product and L is the number of workers in the labour force. A more precise measure is obtained by using average hours worked instead of L , but we will adopt the simpler formulation.

Labour force participation (LFP) is defined as:

$$LFP = \frac{L}{Pop}$$

where Pop = population. Hence:

$$\begin{aligned} Y &= \frac{Y}{L} \times \frac{L}{Pop} \times Pop \\ &= Prod \times LFP \times Pop \end{aligned}$$

Therefore,

$$\begin{aligned} \% \text{ change in } Y &= \% \text{ change in } Prod \\ &\quad + \% \text{ change in } LFP \\ &\quad + \% \text{ change in } Pop \end{aligned}$$

$$\begin{aligned} \text{Then } \% \text{ change in } Y - \% \text{ change in } Pop & \\ &= \% \text{ change in } \textit{real income per capita} \\ &= \% \text{ change in } LFP + \% \text{ change in } Prod \end{aligned}$$

This relationship shows that changes in living standards in the future will depend on our ability to increase productivity and the labour force participation rate. The second component of this relationship presents an immediate problem. The Australian population is ageing and a rising proportion of it is moving into the traditional retirement age bracket. We must, therefore, rely on increases in productivity to increase our living standard. Moreover, the increase in productivity must at least equal the fall in the LFP to maintain our current level of growth in output per capita.

One solution that has been suggested to this problem is an increase in the retirement age or, more precisely, the minimum age at which one qualifies for a government pension. It has also been suggested that the pension age be indexed to life expectancy. This would give many people an incentive to stay in the workforce. The major argument offered in support of this approach is that life expectancy is increasing and there could be significant social advantages in allowing older people to remain productively employed. However, we must also recognise that there is likely to be an interaction between productivity growth and the average age of the *working* population. In many occupations, older workers find it difficult to maintain their level of productivity. Indeed, certain occupations may need to be exempted from the higher retirement age.

This consideration raises the question: should the age at which superannuation can be accessed also be raised? It is also relevant to immigration policy: what skill and age characteristics should be emphasised in the program?

This discussion also draws attention to one reason why it is important to increase the Australian saving rate. It is necessary to prevent a large shortfall in the number of retirees who are able to fund their own retirement. This would reduce the amount needed to meet pension entitlements and reduce the pressures on taxpayers. Burnett et al. (2013) used the HILDA survey to evaluate the adequacy of retirement provisions in Australia. They conclude: 'Even when we take into account the Age Pension, mandatory and voluntary superannuation and other private savings and investments, we expect 95.8 per cent of singles and 88.1 per cent of couples to receive the Age Pension either partly or fully at some stage during retirement, and the Age Pension to contribute 66.7 per cent and 34.9 per cent of the target consumption level during retirement for singles and couples, respectively.'

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Valentine (1996) argues that modern economies are governed by an 'entitlement consensus' which asserts that all members of society have a right to a range of entitlements including free education, free medical treatment, increasing wages, protection of employment, social services and a pension on retirement. There is little to constrain politicians from offering additions to entitlements, particularly if they will not be utilised during their term of office. Thus, there is no mechanism to ensure that entitlements are not created in excess of the resources necessary to provide them. This situation would seriously disrupt the economy.

Shefrin (2007, Chapter 11) discusses the factors which lead to the failure of workers to accumulate adequate savings for their retirement. He identifies:

- > *Myopia and low risk tolerance* (including loss aversion). Investors tend not to buy the assets (shares and property) which give the highest average returns over the long time horizons appropriate for retirement saving.
- > *Investors focus on the performance of individual investments rather than overall portfolio outcomes*. This is a serious problem if investors suffer from loss aversion.
- > *Overconfidence* about their ability to fund a comfortable retirement.
- > *A lack of self control*. The desirability of immediate expenditure outweighs long-term considerations.

Fund managers are often criticised for their 'short termism', i.e. their focus on very recent returns. Our discussion raises the possibility that this behaviour is actually a necessary response to the irrationality of their customers. These characteristics constitute imperfections in the economy and this leads to a consideration of whether government action could correct this imperfection.

The second component of the equation for real income per capita is also a problem. Australia's recent productivity performance has not been good. See Parham (2012) and Productivity Commission (2013). A number of reasons have been suggested for this poor performance including:

- > As income per capita increases, expenditure tends to shift to services and it is difficult to increase productivity in the services industry.
- > High commodity prices and the success of mining have led to more marginal mines being exploited which reduces apparent productivity growth.
- > High investment in mining and utilities has not yet produced substantial increases in output.

Productivity growth also determines the rate of inflation which can be sustained without an erosion of real wages. This point can be illustrated by assuming a simple mark-up model of price setting. Assume that:

$$P = \alpha ULC$$

where P is the price level, ULC is unit labour cost and α is the mark-up constant. ULC is given by:

$$ULC = \frac{W}{Y} = \frac{wL}{Y} = \frac{w}{Prod}$$

where W is total wages and w is the average wage rate.

Therefore,

The percentage change in P (the rate of inflation) = the percentage change in w – the percentage change in $Prod$.

This shows that if wages increase faster than productivity, workers get no additional increase in real wages. The rate of productivity growth is a constraint on our ability to increase living standards by simply increasing wages.

How do we increase labour productivity? One answer is provided by the following simple model. Assume that output is determined by a Cobb-Douglas production function:

$$Y = A \cdot L^\alpha K^{1-\alpha} \text{ where } K \text{ is the capital stock}$$

$$\text{Then } \text{Prod} = \frac{Y}{L} = AL^{\alpha-1} K^{1-\alpha}$$

$$\log \text{Prod} = \log A + (\alpha - 1) \log L + (1 - \alpha) \log K$$

$$\frac{1}{\text{Prod}} \frac{d\text{Prod}}{dt} = \frac{(\alpha - 1)}{L} \frac{dL}{dt} + \frac{(1 - \alpha)}{K} \frac{dK}{dt}$$

The percentage growth rate of L can be divided into population and labour force participation rates as above. However, the equation suggests that the rate of growth of the capital stock is a factor increasing the rate of growth of productivity.

Additional light can be thrown on the relationship by introducing the concept of Multi Factor Productivity (MFP) which is the growth in output not explained by increased inputs. In simple terms:

$$MFP = \frac{Y}{L + K}$$

where L = the share of labour in the value of inputs
 K = the share of capital in the value of inputs

Approximately,

$$MFP = \frac{Y}{L} \left[1 - \frac{K}{L} \right] = \text{Prod} (1 - k) \text{ where } k = \frac{K}{L}$$

Therefore,

$$\text{Prod} = \frac{MFP}{1 - k}$$

Labour productivity increases as MFP and the capital/labour ratio increase. The latter means that workers are working with more capital. Parham (2012) shows that the recent falls in MFP have been an important element in Australia's recent poor productivity performance.

International effects of productivity growth and saving

Australia is an open economy and a useful tool for examining its place in the global economic system is the twin deficits relationship which is:

$$CAD = (I - S) + Df$$

where CAD = the current account deficit

= $M - X$ where M = imports and X = exports

I = investment expenditure

S = private saving which includes both saving by households and saving by businesses

Df = is the government sector's dissaving. It contributes to domestic saving if it runs a surplus

The relationship is an identity which arises from the national accounting identities. However, when the components are intended expenditures, it is an equilibrium condition. In the official statistics, any unintended inventory investment is included in I which maintains the identity.

CAD is the amount of funding obtained from overseas. The deficit must be covered each year by selling foreigners some Australian assets. The need to do this is determined by the shortfall between funds demanded in Australia and those supplied. The demand comes from the need for business to fund investment and any government deficit. The supply comes from private saving and any government surplus. A government deficit reduces the amount of saving available.

TABLE 1: Australian twin deficits: 1973–74 to 2011–12 (\$m)

	CAD	I-S	GB
1973–74	623	-22	645
1974–75	870	-1981	2851
1975–76	1049	-2046	3095
1976–77	1984	-1385	3369
1977–78	2523	-1819	4342
1978–79	3138	-3137	6275
1979–80	1547	-2684	4231
1980–81	5206	1446	3760
1981–82	8448	2882	5566
1982–83	6079	-3127	9206
1983–84	7200	-5756	12956
1984–85	10430	-325	10755
1985–86	14507	3265	11242
1986–87	11446	2623	8823
1987–88	10430	9817	613
1988–89	18526	23665	-5139
1989–90	23254	7396	15858
1990–91	16670	-110	16780
1991–92	12871	-10741	23612
1992–93	14205	-11620	25825
1993–94	15331	-1211	16542
1994–95	26504	8246	18258
1995–96	20588	2716	17872
1996–97	16324	8758	7566
1997–98	22778	24569	-1791
1998–99	32821	32616	205
1999–00	31994	43892	-11898
2000–01	18013	10487	7526
2001–02	19641	14314	5327
2002–03	38786	41220	-2434
2003–04	47603	52057	-4454
2004–05	59594	63986	-4392
2005–06	57698	64543	-6845
2006–07	66619	73198	-6579
2007–08	78588	72165	6423
2008–09	42474	-26344	68818
2009–10	64470	-28410	92880
2010–11	42146	-42736	84882
2011–12	47813	-29321	77134

Table 1 shows the twin deficits since 1973–74. *GB* is government borrowing which is the government sector budget deficit. Some comments can be made on the sub-periods covered by it. First, in the early nineties private saving tended to reduce the CAD. This was probably due to the recession at that time. The major influence on the CAD at the time was government borrowing.

Second, in the first eight years of the present century private saving declined sharply. This was somewhat offset by the move into surplus by the government sector. This situation was reversed with the onset of the global financial crisis. The government ran into large deficits, but the private sector (both household and business) began contributing large savings to the system.

The need to finance the CAD has led to significant foreign ownership of Australian assets. Black and Kirkwood (2010) report that foreign investors hold about half (in value terms) of Australian equities and bonds. The Australian Office of Financial Management reports that 67.5 per cent of CGS were bought by non-resident entities in December 2013. Banks raise a large part of their funding from the global market (mainly the global interbank market). See Stewart et al. (2013). This is not surprising. The government and banks, with high credit ratings, are the obvious entities to raise the funds overseas.

The growth in foreign ownership has raised concerns which might cause us to consider three possible policy responses:

- > prevent foreigners from buying Australian assets (or, at least, some critically important ones)
- > continue with the current 'hands-off' policy
- > try to increase domestic saving to reduce Australia's reliance on foreign funding.

In the remainder of the paper, it will be argued that this list is arranged in increasing order of desirability.

Above it was argued that the growth in productivity increases with the increase in the capital stock (K). Now,

$$I = \frac{dK}{dt}$$

From the twin deficits relationship:

$$\begin{aligned} I &= CAD + S - Df \\ &= CAD + DS \quad \text{where } DS = \text{domestic saving} \end{aligned}$$

Therefore,

$$\frac{1}{K} \frac{dK}{dt} = \frac{DS + CAD}{K}$$

This tells us that the CAD (funds obtained from overseas) is used to fund capital formation which increases productivity in Australia. Prohibiting foreign acquisition of local assets will lead to lower investment and productivity growth. Australia gets similar advantages from leverage as those obtained by a business. Note that if we were able to force $CAD = 0$, S would have to increase to fill the gap or otherwise I would contract. Hence the current policy provides a preferred outcome to that produced by a prohibition of foreign ownership.

Given that we will need some overseas funding in the foreseeable future, an important policy question is what terms and rules should be imposed on incoming funds and asset purchases. However, funding investment from the CAD has the downside that it means that a high proportion of the assets created is owned by foreigners. Returns must be paid on these assets and this outflow of funds will contribute to the CAD in future years. The change in Australian wealth is domestic saving (DS). From the above $DS = I - CAD$.

Therefore, the most desirable option among the three mentioned earlier is the third – increasing domestic saving so that a greater proportion of investment is funded domestically. One positive aspect of such a policy is that it would allow the banks to increase the percentage of their funding base which is obtained from within Australia. The problem here is that the Reserve Bank of Australia has no control over overseas interest rates which tend to be very sensitive to the state of the global financial system. That is, the dependence of banks on global financial markets undermines the impact of monetary policy.

Policies to increase saving could take a number of forms. For example:

- > governments could strive to bring their budgets into surplus by reducing expenditure
- > the superannuation guarantee charge (SGC) could be increased.

Shefrin (2007, p. 142) notes that a regimented regime of saving will produce better results than relying on discretion. He suggests that money 'taken off the top' (such as the SGC in Australia) does not compete directly with current needs. However, it should be noted that Connolly and Kohler (2004) argue that for every dollar contributed to compulsory superannuation, saving outside the funds had been reduced by around 50¢. Apparently, many households believe that the amount being put away is enough for retirement, and increase their expenditure accordingly. Valentine and Scott (2012, p. 30) show that this assumption is not correct. Two responses would be useful:

- > increase the rate of the SGC
- > educate the public on the realities of retirement.

An objection raised against an increase in the SGC rate is that the tax advantages given to superannuation are a tax expenditure which increases the budget deficit. Against this, it should be noted that the government collects taxes on the income earned by superannuation funds. Also, taxpayers will respond to a removal of the tax advantages of superannuation by adopting other means of reducing their taxation burden. For example, they could engage in more negative gearing of property investments. Also, higher retirement incomes are not the only benefit of saving. As argued above, it also increases productivity growth.

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Hewson and Nguyen (2014) point out that low income earners actually lose from superannuation tax rules because they have a tax rate of 0 per cent on income, but pay 15 per cent on super contributions and earnings. Clearly, this anomaly should be addressed. However, people in such a position are unlikely to be able to accumulate an adequate retirement fund so it may be best to exempt them from the requirements. The incentives to contribute to super should be targeted towards those who could possibly provide for their own retirement. Hewson and Nguyen (2014) also say 'we don't believe that the top 1 per cent require that much incentive to adequately save for their retirement'. In part, this arises from the progressive taxation system and there may be an argument for limiting the benefit received by high income earners. In any case, there is a limit on the size of contributions.

In addition, the most tax advantaged form of personal investment in Australia is home ownership. These concessions reduce the allocational efficiency of Australian financial markets because funds are not directed into the most productive investments. Also, the exemption of owner-occupied houses from the pension assets tax, increases the pension tax burden. Removal of this exemption could be combined with allowing contributors to use superannuation funds to buy a house.

It could also be claimed that increasing saving will reduce economic activity in the country. However, this argument does not appear to have much weight. First, increased saving would lead to a depreciation of the Australian dollar which would stimulate the economy. See Garrow and Valentine (2012). Second, other reforms could stimulate the economy. For example, reforms which improve productivity and labour force participation will keep the economy moving. In terms of the policies for increasing saving suggested above:

- > governments should seek surpluses by expenditure reductions, not tax increases
- > increases in the Superannuation Guarantee Charge (SGC) should be offset by lower wage increases otherwise they could lead to higher unemployment.

The final point suggests that policies to increase saving must include a deregulation of the labour market so that increases in the unemployment rate lead to lower wage increases. Also, steps should be taken to design the labour market so that it fosters productivity growth.

MFP can be increased by policies which introduce new technologies, improve health, skills and education or introduce more efficient management processes. The latter would include a reduction in bureaucratic red tape. Also, in this context, Australia's continuing fall in international educational rankings must be of concern.

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Conclusion

The major conclusion to be drawn from this discussion is that there are good reasons for Australia to adopt policies which increase the saving rate. First, it would allow more investment spending to be funded from domestic sources so that it makes a greater contribution to national wealth. Maintaining the level of investment will support the growth of productivity. Also, increased saving will tend to reduce the value of the Australian dollar which will stimulate the economy. In particular, it will support those industries which suffer from a high value of the dollar, i.e. the low-speed part of the two-speed economy.

Also, increased saving will make it easier to respond to the future pressures on the retirement income system arising from the ageing of the population. If this is not done, there will be substantial pressure on the pension system.

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