# Replacing Corporate Income Tax with a Cash Flow Tax

Ross Garnaut, Craig Emerson, Reuben Finighan and Stephen Anthony*

## Abstract

*We design a parsimonious cash flow tax for Australia and estimate revenue effects. It allows immediate deduction of all capital expenditures, denies deductions of interest payments, and compensates negative cash flows at the same rate and time as it taxes positive cash flows. It allows taxpayer timing choice on implementation over 10 years. It has incentive effects comparable to lowering the corporate income tax rate to zero. It removes distortions that artificially favour debt over equity, short- over long-term investments, rents over competitive returns, large, established over small and new businesses, and conventional over innovative investments. It closes international tax evasion loopholes. Its spur to investment and timing of revenue impacts favours implementation in recession.*

* Garnaut: The University of Melbourne, Victoria 3010 Australia; Emerson: Victoria University, The Australian National University, Australian Capital Territory 2600 Australia and RMIT, Victoria 3000 Australia; Finighan: London School of Economics, London WC2A 2AE United Kingdom; Anthony: Industry Super Australia, Victoria 3000 Australia. Corresponding author: Garnaut, email <ross.garnaut@unimelb.edu.au>. The authors acknowledge helpful suggestions from colleagues at seminars at the Melbourne Economic Forum, the Committee for Economic Development of Australia and the Faculty of Business and Economics at the University of Melbourne, and from an anonymous referee.

## 1. Governments have been Cutting Corporate Income Tax Rates

This paper sets out an alternative approach to corporate income taxation that aims to reduce or remove the main weaknesses of the established approach. The authors see it as a change that would generate large benefits for long-term economic growth, and involves relatively small disruption to established administration of the corporate tax laws. It happens to be useful to the current macro-economic circumstances.

A corporate taxation model for the twenty-first century has to take account of a number of realities: greater mobility of capital, giving rise to an international 'race to the bottom' in taxation rates to attract and retain investment; increasing international payments for management and intellectual property fees in deductions from assessable income; increasing opportunities for tax avoidance and evasion through transactions across international borders; an expansion in the proportion of rent and decline of competitive returns on capital in corporate income; a decline in the competitive position of national against multinational corporations arising out of the former's more limited opportunities for tax avoidance and evasion; a declining national tax compliance culture; and growing resentment of 'globalisation' arising out of multinational enterprises' tax avoidance and evasion.

Public concerns about these matters have contributed to the reaction against 'globalisation' and to growing mistrust of market exchange.

Over the last decade or so governments have been cutting their rates of corporate income tax, ostensibly to attract foreign

investment to their jurisdictions or to hold onto foreign investment when competitor countries cut their tax rates. The economic justification given is that capital is mobile internationally and will gravitate to countries with low corporate income tax rates. In this competitive race to reduce corporate income tax *rates*, less emphasis is placed on the *base* of the corporate income tax, despite its capacity to exert at least as much influence on after-tax returns on competitive investment as the tax rate.

The empirical evidence on the effect of corporate income tax rates on investment decisions is not compelling. The case is often argued from a model that assumes unrealistically that there is perfect competition in all relevant markets. Even in competitive situations, other considerations are highly influential on investment decisions, including the tax base, sovereign risk, the independence and transparency of regulatory and legal systems, foreign exchange restrictions, workforce skills, and geographic location. Nevertheless, governments remain under pressure to reduce their corporate income tax rates. This is problematic for financial stability, for the continued supply of public goods that are essential for the efficient operation of the economy, and for equitable income distribution.

The rigorous application of economic principles has led us to search for systems of taxation that have low incidence on returns on capital operating in a competitive market, and high incidence on economic rent.

This paper suggests a major change in approach to taxing corporate income. It proposes changing the corporate tax base, from a conventional view of income to cash flow. This increases the incidence of the tax on economic rent, and reduces the incidence on competitive or 'normal' returns on investment. It improves the trade-off between the amount of revenue collected and the amount of welfare-enhancing investment.

Our proposed cash flow tax is relatively simple to administer, applying familiar and well-tested measurements of the taxation base. It has a strongly positive effect on incentives for investment of mobile capital compared to existing corporate income taxation schemes. When applied in a single country, its effect on investment incentives is comparable to that of a corporate income taxation rate of zero—so removing the international 'race to the bottom'. It removes an important distortion in traditional approaches to taxation: the artificial promotion of debt over equity, which has adverse consequences for financial efficiency and national economic stability. By abolishing the distinction between recurrent and capital expenditure, it removes a disincentive to long-lived and capital-intensive investment that is a feature of the current tax system. It removes and reverses a bias in the current taxation system that favours low-risk investment and does not support innovation. It removes major contemporary avenues for large-scale avoidance and evasion of corporate taxation. It avoids one important source of inequality in the distribution of income in developed countries. Introduced in a deep recession—as it would be in Australia in 2020–21—its revenue impact would be expansionary, with the reduction of revenue withdrawn automatically over time.

Like any change in taxation arrangements, moving to the proposed system would impose some deadweight costs. By allowing taxpayers a choice over a decade of the year of transition from the old to the new system, we would minimise disruption. Second, the proposed denial of deductions for royalties on foreign intellectual property—an important feature of our proposal that could be introduced into the conventional corporate tax regime as well—might be seen as reducing incentives for global innovation. We judge that this effect will be negligible and more than offset by increased incentives for innovation in Australia.

## 2. Rent Taxes and the Ideal of Neutrality in Taxation

If the objective is to maximise national income, taxes should not affect investment decisions; that is, taxation should be neutral.

There is a general exception to the neutrality principle where a tax corrects for negative spillovers from an investment decision—such as water pollution and carbon emissions. In the absence of defined spillovers, taxes that distort investment decisions result in deadweight losses to society.

It is in the nature of economic rent that its taxation does not reduce incentives for investment. The search for neutrality in taxation is in the first instance a search for economic rent as the tax base.

Investors make decisions based on the expected net present value (ENPV) of an investment proposal. The net present value (NPV) of an investment is the value of future positive cash flows minus future negative cash flows discounted to the present at an appropriate interest rate. The ENPV of a possible investment is the weighted average of possible NPVs, with the weights being determined by the probability of each possible outcome.

Tax neutrality is generally achieved when an investment offering a positive ENPV before tax maintains a positive ENPV after tax. Corporate income tax renders submarginal any investment that is expected to achieve before tax no more than the normal return on investment obtainable in competitive markets (and some investments with well above normal returns). It does this in two ways. First, it requires investors to deduct their capital expenditures not immediately but over time in accordance with legislated depreciation schedules, ensuring the NPV of those deductions is less than the NPV of the actual expenditures. Second, it allows only incomplete deductions for losses, which especially disadvantages small, innovative businesses.[1] Corporate income taxation is applied to the normal or competitive return to capital. As a result, an investment that yields a positive ENPV before tax at a discount rate reflecting a normal return may yield a negative ENPV net of the standard corporate income tax.

For an investment to qualify, the EPNV of an investment in a competitive part of the economy therefore must be expected to earn a before-tax return in excess of that which would support a positive investment decision in the absence of taxation. A higher rate of standard corporate income taxation would make it harder for investors to achieve their 'hurdle' rates of return. A country that applies a higher standard taxation rate will lose out in competition for investment in competitive sectors of the economy with another country applying a lower tax rate to investments that have exactly the same commercial parameters before taxation in the two countries.

In contrast, a two-sided cash flow tax (with negative and positive cash flows being augmented or taxed at the same rate) does not change the sign of the ENPV of an investment; if the proposed investment has a positive ENPV before tax it will maintain a positive ENPV after tax.

There is one significant exception to the rule that a two-sided cash flow tax will not affect decisions on whether to commit to an investment. Different investors have different attitudes to risk and losses. Investors are generally understood to be averse to risk and to loss (Tversky and Kahneman 1991; Hwang and Satchell 2010), and will value an investment with a lower spread in returns more than one with higher spread, even if they have the same ENPV. Investor risk-aversion has long been understood to have negative consequences for overall investment and the severity of downturns (Keynes 1936; Zeira 1990; Castro, Clementi and MacDonald 2004). The taxation of positive cash flows and compensation of negative cash flows at the same rate compresses the probability distribution of expected after-tax outcomes; that is, it makes investments less risky. A two-sided cash flow tax may therefore affect investment decisions positively, by reducing risk. This particular source of non-neutrality of a two-sided cash flow tax has the potential to raise incentives to invest and gross national income (GNI) above levels in the absence of taxation.

In some circumstances, rent taxation can reduce economic distortions. To the extent that not all expenditure or money or effort on lobbying for policy change is a deductible expense, it reduces the returns on rent-seeking behaviour. This may raise economic output by

reducing the amount of resources dissipated in economically unproductive rent seeking (Tullock 1980; Krueger 1974), or reduce the negative impact of regulatory distortion to protect firms from competition.

Hence an appropriately designed cash flow tax is nearly neutral and to the extent that it is not neutral, it is non-neutral in desirable ways. It is neutral with respect to whether investment ENVP is positive or negative, because its tax base is the economic rent component of corporate income. It is non-neutral in reducing investor risks associated with economically valuable investment, and reducing payoffs for economically unproductive rent-seeking.

Beyond its contribution to economic welfare through increased incentives to productive investment, rent taxation reduces the impact of a rapidly growing and economically unproductive contributor to rising inequality. A large and growing presence of rent tends to increase income and wealth inequality, owing to the narrow ownership of the scarce assets that attract rent. Unlike standard progressive taxation of personal income, rent taxation is progressive without adversely affecting incentives for participation in economically valuable activity.

## 3. Types of Rent

Economic rent is payment to a factor of production in excess of the minimum required to attract it to, and hold it in, the activity in which it is engaged. In the case of firms, rent is profit above that which is necessary to attract the economically optimal amount of investment into an activity—returns in excess of the supply price of competitive capital. Rent is the return in excess of 'normal profits'.

Rent persists because competition in the supply of a particular good or service is imperfect or, in some cases, non-existent.

One *apparent* source of economic rent is the temporary excess profit that occurs following changes in economic equilibria, which takes time for competition to erode—the phenomenon that Marshall called quasi-rent (Marshall 1890). This cannot be taxed away without risking under-investment in future productive innovation. It is not accurately described as rent. Investment that generates quasi-rent is not discouraged by the two-sided cash flow tax proposed in this paper. Investments to generate future income are reimbursed at the same rate at which revenues from the innovation are taxed.

Economic rent arises whenever the presence of high profits in an economic activity fails to induce expansion of supply to reduce prices and profits to normal or competitive levels. The restriction on entry may arise because production requires a specific resource, the supply of which cannot be augmented by investment. Examples include urban and agricultural land and mineral resources. Land and mines that can produce valuable product at lower costs than others, or which are favourably located, cannot be reproduced through investment. The restriction may arise because there are overwhelming economies of scale that make it impossible for a newcomer to compete—as in a network, or an economic activity where lowest cost scale of production is very large compared with the size of the market. They may arise because incumbents earn exceptionally high returns because they happen to have established an oligopolistic position in the market and are prepared to invest part of those returns in predatory behaviour to protect their market power. The restrictions may exist because government law or regulation blocks new entrants. Different sources of rent can interact with and reinforce each other.

Some but not all restrictions that allow rent to persist are economically inefficient. Inefficient rent may be the result of regulatory barriers to competition that serve no public interest. Others arise from privately created monopolies that are in a position to maintain and to exercise market power. It is in the public interest to eliminate these inefficient sources of rent by removing barriers to competitive entry, or by actively promoting competition.

There are several types of rent that emerge from restrictions that increase economic efficiency. One category results from exclusive ownership of a specific land or mineral resource.

There is a sense in which the absence of competitive access to the resource is the result of government action—through the defining and enforcement of private property rights. In the absence of this restriction on competition, private incentives would lead to overall investment in the use of the resource in excess of levels that maximise the value of output. For example, cost-minimising exploitation of an alluvial gold deposit may allow maximisation of economic value with 1,000 workers employed over 10 years, with half of the value of output accruing as mineral rent to the owner of the resource. A free-for-all in a gold rush may see the same or a lesser quantity of gold being mined and revenue achieved with 4,000 miners working for 5 years. The equivalent of 10,000 worker-years of labour would have been wasted. This is one example of the general phenomenon of 'the tragedy of the commons'.

Access to urban land is a special case. Planning regulations are necessary to restrict investment to levels that maximise economic value. In the absence of planning restrictions, there is likely to be over-development of favourable sites, to the point where total economic value is diminished. Here a judicious balance has to be struck between the public interest in full use of the resource, and the public interest in avoiding dissipation of value in overcrowding.

A second category of efficient rent results from government protecting private use of intellectual property resulting from scientific or technological or intellectual or artistic creation. The restriction increases incentives for economically productive investment in innovation, at the same time as it restricts the value generated from access to each creation. As with urban planning, a judicious balance between competing sources of value is necessary for economically optimal outcomes.

A third category of efficient rent is 'natural monopoly', associated with ownership of a network, or a physical asset with overwhelming economies of scale, or the two together. Examples of network monopolies are provided by the main information technology and social media platforms. Examples of overwhelmingly large economies of scale include some manufacturing activities (e.g., Diewert and Fox 2008; Angeriz, McCombie and Roberts 2008; Romero and McCombie 2016). Examples of the two together include electricity transmission, gas pipeline and telecommunications hardware systems. Duplication of investments in a natural monopoly may waste resources—while the absence of competition allows the owner of the established assets to maintain high prices and profits at the expense of community welfare.

Some activities generating efficient rent can be subject to regulation of activity or price to increase total economic value. Whatever the source of rent, and however rent may be constrained by regulation, rent can be subject to taxation without sacrifice of economic value.

## 4. The Prevalence of Rent

The share of rent in GDP has varied widely in the course of modern economic development.

The rent of agricultural land was at the heart of classical economics (Ricardo 1817) and the economic and political systems from which it grew, with agricultural land comprising around half the wealth in Western Europe in the early nineteenth century (Piketty 2013). The rent of private ownership of slaves contributed a large proportion of US income at that time, and the capital value of slaves constituted about half of all wealth in the southern states by the mid-nineteenth century (Piketty 2013). Mineral rent has been the main source of income in some resource-rich countries since the beginnings of the modern economy, and was important globally in the immediate aftermath of the oil price leaps in the 1970s. Rent from the concentration of private ownership of business assets was at the centre of the great fortunes of late nineteenth and early twentieth century America, and its reduction the policy focus of President Theodore Roosevelt (Morris 2001).

In the decades from the late twentieth to the early twenty-first century, rent has expanded its share of total income. Rent on urban land has grown in parallel with the populations and economic predominance of large cities.

Its importance in many countries now rivals that of agricultural land in early nineteenth century capitalism. The United States, and increasingly China, have seen growth in rent from monopoly control of new intellectual property and from the natural monopolies of information technology networks. Vast new fortunes in the developing world have come disproportionately from private control of natural monopoly utilities and natural resources. In Australia, a high and, over recent decades, an increased proportion of incomes has emanated from rent-heavy sectors, notably mining, urban real estate, information technology, financial services and large-scale retailing.

In the United States, where the macro and micro evidence base is developing most rapidly, a range of recent economic analyses has identified an increasing proportion of rent in income from the early 1980s. From 1980 to 2016, returns in excess of normal profits as a share of GDP have grown between four and five fold (De Loecker and Eeckhout 2017, 2018; De Loecker, Eeckhout and Unger 2020). See similar findings in Kurz (2017), Dixon and Lim (2017), Barkai (2016) and Díez et al. (2018). This was the central focus of Olivier Blanchard's Presidential Address to the American Economics Association in 2019 (Blanchard 2019).The rise in rent accompanies increases in market concentration, especially in banking, healthcare and ICT (US Council of Economic Advisors 2016; Autor et al. 2017). The US economy has bifurcated into an abundance of firms with low returns and a narrow band of firms with super-profits: returns for firms that were in the top 10 per cent by profitability rose from 20 per cent per annum in the mid-1980s to around 100 per cent per annum in recent years. Rent has become more persistent: the odds of a super-profitable firm still being super-profitable 10 years later have doubled since the 1990s to 85 per cent (Furman and Orszag 2015).

The pattern of growing rent is present in many countries. De Loecker and Eeckhout (2018) find that global average mark-ups have increased by 52 percentage points since 1980. The increase in G7 countries ranges from around 30 to almost 150 percentage points.

Ingles and Stewart (2018, p. 20) refer to various Australian and US estimates suggesting the normal return on investment represents between 30 and 60 per cent of the corporate return, with various rents constituting the remainder. Murphy (2018, Table 2, p. 6) estimates that 41 per cent of Australian corporate income tax revenue is from rent.

## 5. Cash Flow Taxes as Rent Taxes

An early version of a cash flow tax was proposed by E Cary Brown (Brown 1948). The Brown Tax compensates investors for negative cash flows at the tax rate and taxes positive net cash flows at the same rate. The two-sided Brown Tax cannot change the sign of the ENPV of a potential investment from positive to negative.

In a Brown Tax, financing costs are not deductible expenses. Consequently, the Brown Tax cannot distort financing choices between debt and equity, whereas corporate income tax, which allows for interest deductions, favours debt over equity. The Brown Tax is based on annual cash flows. It allows the immediate deduction of capital expenditures, whereas corporate income tax allows for capital expenditures to be written off over time in accordance with legislated depreciation schedules.

In years when cash outflows exceed cash inflows, producing negative cash flows, the government pays to the investing company an amount equal to the negative net cash flow multiplied by the rate of Brown Tax. This feature makes the Brown Tax a two-sided tax.

While the Brown Tax is efficient in its neutrality and elegant in its simplicity, the obligation of the government of the day to make cash payments to companies may not be politically acceptable in some circumstances.

An alternative cash flow tax is the Resource Rent Tax (RRT) proposed by Garnaut and Clunies Ross (1975) and further developed by Emerson and Garnaut (1984) and Garnaut and Clunies Ross (1983). Rather than the government making cash contributions to negative net

cash flows as they occur, the RRT provides for them to be carried forward at a risk-adjusted interest rate to be offset against future positive net cash flows. This accumulation rate is the risk-free long-term government bond rate plus a risk premium designed to raise the accumulation rate to the investor's hurdle rate—or supply price of investment. In taxing jurisdictions where sovereign risk is high, and if the particular investment is considered highly risky, the supply price of investment will be high. The accumulation rate will need to be correspondingly high if the discouragement of investments that would be attractive in the absence of tax is to be avoided.

The RRT is, therefore, a one-sided tax; it shares in positive NPVs but not in negative ones. It can change the sign of the ENPV of an investment from positive to negative and therefore is not strictly neutral. However, it is more nearly neutral than corporate income tax and most other taxes in practical application around the world (see Garnaut and Clunies Ross 1983 for comprehensive comparisons).

An operating example of the RRT is the Petroleum Resource Rent Tax (PRRT) introduced by the Australian Government in 1987 for application to offshore petroleum developments. The initially legislated accumulation rates for the PRRT were, for exploration expenditure, the long-term bond rate plus 15 percentage points, and for other expenditure the long-term bond rate plus 5 percentage points. These and other features of the PRRT were reviewed in 2017 and the accumulation rate for exploration was reduced to the long-term bond rate plus 5 percentage points. The rate of the PRRT is 40 per cent. The data required for assessment of PRRT is essentially the same as that required for application of the corporate income tax. It can therefore rely on established tax law and practice—now augmented by two decades of application of the PRRT itself.

A 2010 review of Australia's tax system chaired by then Treasury Secretary Ken Henry (Australian Treasury 2010) recommended a hybrid of the Brown Tax and the Resource Rent Tax for application to mining income. Its Resource Super Profits Tax (RSPT) was to apply to all Australian mining income. The RSPT would allow negative net cash flows to be carried forward at the Commonwealth bond rate for offsetting against future positive net cash flows. If the investment was abandoned at some time in the future when accumulated cash flows were negative, the government would make a payment to the investor equal to the negative accumulated value multiplied by the tax rate. This payment made the RSPT to some extent two-sided—to the extent that the government's commitment to make the future payment was credible, and that the Commonwealth bond rate corresponded to the opportunity cost of capital during the period in which the negative cash flows were being carried forward.

Following the Australian Government's announcement of the RSPT in the 2010 Budget, the Minerals Council of Australia (MCA) invested heavily in an advertising campaign aimed at defeating the tax. Many of its criticisms did not have an analytic basis. One did. Businesses were being expected to rely on government-legislated assurances that negative net cash flows carried forward would be the subject of a cash refund from a future government. Since this accumulation process could be conducted over decades, rational investors would take account of the risk of these deductions being disallowed through amending legislation. It is reasonable to doubt whether a future government would be certain to honour a distantly preceding government's commitment to provide large cash refunds on unsuccessful investments.

Following the 2010 election, the Australian Government abandoned the RSPT, introducing in its place in 2012 the Minerals Resource Rent Tax (MRRT) at the rate of 22.5 per cent. This took the form of the PRRT, with special arrangements for historical deductions. The coverage of the MRRT was limited to iron ore, coal and natural gas. An historical cost base for existing projects was negotiated with the mining industry, with the effect of wiping out expected liability for MRRT for a number of years ahead. As deductions from the cost base began to approach exhaustion for some companies, the incoming Australian

Government following a 2013 election scrapped the MRRT.

Another approach to rent taxation is the allowance for corporate equity (ACE). It adjusts the normal corporate income tax base by deducting an allowance calculated as a normal, competitive rate of return multiplied by the equity value of the company. In this way, the ACE seeks to exempt from tax the normal, competitive returns on investment, taxing only economic rent. The ACE tax rate would need to be high in order to collect the same amount of revenue as the existing corporate income tax that it would replace.

The ACE is a variant of a general rent tax proposed by Boadway and Bruce (1984), which has become known as the allowance for corporate capital (ACC). Instead of allowing a deduction for a return on equity, as with the ACE, the ACC allows a deduction for a return on debt and equity combined, but interest payments are not deductible.

Recognition of the increasing role of economic rent in corporate income and its perverse effect on economic efficiency and equity in income distribution has led in recent times to the proliferation of suggestions for alternative approaches to taxing rent. For example, Collier (2018) has argued for higher taxation on incomes of large enterprises and of residents in large cities as a way of concentrating taxation more heavily on rent. We see larger gains and smaller losses in seeking an increase in the incidence of taxation on economic rent through an appropriately designed cash flow tax.

Discussion of and experience with alternatives leads us to favour the efficient and elegant two-sided Brown Tax.

## 6. Previous Modelling of Rent Taxes

Various efforts have been made to model the fiscal and macro-economic effects of substituting rent taxes for corporate income tax, or of reducing the corporate income tax rate while introducing a rent tax at a low rate. Prominent among these are the computable general equilibrium (CGE) modelling exercises of Murphy (2018) and Dixon and Nassios (2018) in Australia, and Altig et al. (2001) in the United States.

One of Murphy's modelling runs replaces the corporate income tax with the ACC while retaining full dividend imputation. He obtains a gain to consumer welfare of $18 billion but at a cost to revenue of $26 billion. A more modest proposal involves reducing the corporate income tax rate from 30 per cent to 25 per cent and introducing a rent tax at the rate of 8 per cent on the financial sector only. Murphy estimates that, when the effects of the change have fully flowed through the economy, this proposal would collect the same amount of revenue as the established corporate income tax at a rate of 30 per cent, with a welfare gain of $5.4 billion. Murphy's estimates of the gains rely on an assumption that there would be substantially less tax avoidance by multinational corporations at lower rates of corporate income tax. There is no empirical or analytic support for this assumption. More generally, Murphy advocates a corporate income tax rate of 20 per cent, a financial services rent tax and major changes to the dividend imputation system.[2]

While Murphy estimates the impacts at a point in time after economic adjustment to the new regime, Dixon and Nassios track the path of the adjustment over time. Dixon and Nassios track the effects of reducing the corporate income tax rate to 25 per cent. They take into account the welfare losses to Australian nationals from giving foreign investors a windfall gain on their pre-existing Australian investments made in the full expectation of a 30 per cent corporate income tax rate. Dixon and Nassios conclude that the reduction of the tax rate would lead to a fall in national income.

Based on their own tax design analysis and Murphy's modelling, Ingles and Stewart (2018) suggest various options, including combining corporate income tax at a lower rate with a tax that denies interest deductibility and ultimately replacing the corporate income tax with a rent tax.

Altig et al. (2001) simulate five possible cash flow tax reforms in the United States. Some of these variants have properties that are

improbable in the Australian and indeed the US context, such as the removal of progressive taxation or the application of the tax to housing wealth. Each of the five cash flow taxes is expected to raise investment and national income. The variants closest to our model provide the highest national income and wage gains, of three to six percentage points over 13 years, with gains continuing to grow into the future. By broadening the tax base, they also allow for the lowest capital income taxation rates. The models lack details appropriate to the contemporary Australian context, including the treatment of intellectual property and services, mechanisms of investment expensing, and international tax arbitrage, and are, of course, modelled using US economic data.

## 7. Replacing Corporate Income Tax with a Cash Flow Tax

We propose replacing the corporate income tax with a form of cash flow tax that has the two-sided character of the Brown Tax. The cash flow tax would have as its base net cash flows, being taxable revenues (excluding any interest income) less non-financing cash outlays (operating costs plus capital expenditure, but with no allowance for interest or other financing costs). The accounting data for revenues and expenditures would be exactly the same as for corporate income tax and the PRRT, so that established case law would apply. No distinction is drawn between capital and recurrent expenditure.

For typical capital-intensive projects, net cash flows in the early years will be negative. Negative cash flows could also arise late in the life of a project when large capital expenditure is required for refurbishments or dismantlement of ageing assets such as oil and gas platforms or, possibly, in years of low prices and sales revenue. In years when negative net cash flows are recorded, we propose that an amount equal to the negative net cash flow multiplied by the tax rate be certified by the Australian Taxation Office (ATO) and rebated to the taxpayer. If political judgements weighed against a straightforward rebate, the

certified cash loss could be made available for offset against any cash flow tax payable by any entity. The taxpayer would be permitted to sell the certified amount to another company for offset against its own current cash flow tax liabilities. The private sector, the Australian Securities Exchange (ASX) or the ATO could create a market for such offsets, which would trade at face value minus transaction costs.

## 8. Specific Design Issues

### 8.1 Treatment of the Financial Sector

Our analysis of the treatment of financial flows under a cash flow tax follows the structure laid out by the Meade (1978) Committee on UK tax reform, which has since become conventional. The Committee drew a distinction between flows resulting from real transactions and those from purely financial transactions. Following Meade Committee notation, take $R$ as real inflows and $\bar{R}$ as real outflows, and $F$ as financial inflows and $\bar{F}$ as financial outflows (see Table 1, from Auerbach et al. 2017). The two standard options for structuring the tax base are:

- An R-base, taxing real inflows net of real outflows only: $R - \bar{R}$

- An R + F-base, adding financial inflows and deducting financial outflows: $(R + F) - (\bar{R} + \bar{F})$

Choosing between these options has proven challenging for past specifications of a cash flow tax. The R+F-base has the advantage of taxing the rent of financial institutions, but imposes prohibitively complex tax accounting requirements on businesses and may encourage perverse profit deferral (Auerbach et al. 2017; see Poddar and English 1997; Zee 2005 for some untested approaches to simplification). The R-base, on the other hand, may substantially simplify tax calculations compared to the existing corporate income tax and may even be automated for many smaller businesses

**Table 1 Components of $R$, $\bar{R}$, $F$ and $\bar{F}$ in R and R+F-Base Taxation**

| Inflows | Outflows |
|---|---|
| *Real items* | |
| $R1$ Sales of goods | $\bar{R}1$ Purchase of materials |
| $R2$ Sales of services | $\bar{R}2$ Wages and salaries |
| $R3$ Sales of assets | $\bar{R}3$ Purchase of fixed assets |
| $R$ | $\bar{R}$ |
| *Financial items* | |
| $F1$ Increase in any forms of borrowing | $\bar{F}1$ Decrease in any forms of borrowing |
| $F2$ Decrease in any forms of lending | $\bar{F}2$ Increase in any forms of lending |
| $F3$ Decrease in cash | $\bar{F}3$ Increase in cash |
| $F4$ Interest received | $\bar{F}4$ Interest paid |
| $F5$ Decrease in holding of foreign shares | $\bar{F}5$ Increase in holding of foreign shares |
| $F$ | $\bar{F}$ |

(US President's Tax Reform Panel, 2005), but excludes financial flows from its coverage.

We propose avoiding these problems by combining an R-base cash flow tax for all except financial firms, with separate provisions for the taxation of financial firms. For simplicity, we propose taxing financial firms under the existing corporate income tax regime, but with the immediate expensing of investment. Taxable income for financial firms would be interest received minus interest paid, plus fees, minus current costs and capital expenditure. This modified corporate income tax—the Financial Sector Income Tax (FSIT)—is similar to the Financial Activities Tax, or FAT, proposed by IMF staff (Claessens, Keen and Pazarbasioglu 2010; Keen, Krelove and Norregaard 2016), and the Financial Services Tax proposed by Henry's Future Tax System Review (2010). Our proposal would require no changes in data collection compared to the existing corporate income tax so it can be readily implemented.

The FSIT would be applied at the same rate as the cash flow tax. A single rate across all activities removes one potential incentive to disguise financial flows as real flows, and vice versa, hence reducing the burden of enforcing the border between real and financial flows for financial firms.

Non-financial firms will face incentives to disguise some real flows as financial flows. As suggested in Auerbach et al. (2017), quasi-financial transactions, such as delayed payment schemes, would be treated as real flows. Non-financial firms engaged in limited but substantial financial activities over a specified threshold may be obliged to submit tax returns for the cash flow tax and FSIT.

### 8.2 Countering Base Erosion and Profit Shifting

Multinational corporations shift profits to tax havens or to lower-tax jurisdictions through inflated related-party interest payments (from artificially high gearing or artificially high interest rates, or both); transfer pricing between related parties for sales (including through dedicated marketing hubs in low-tax jurisdictions); and inflation of technology and management fees to affiliates. Global digital corporations are famously adept at using technology and management fees to shift profits to low-tax or zero-tax jurisdictions.

A cash flow tax removes tax avoidance problems arising from artificially high gearing and high interest rates for loans from related parties by excluding financial transactions from its base.

We propose removing problems from technology and management fees paid to foreign affiliates by allowing no deduction for imported services, unless the taxpayer demonstrates that they relate to current expenditure on goods and services directly required for the sale to the Australian taxpayer. For foreign investment in research and development, the presumption is that earnings from sales to Australia are an economic rent—except to the extent that they require specific expenditure on adaptation to Australian conditions. This is unlikely to cause any reduction in global research and development, given the small proportion of expected early sales to Australia in the technology firms' plans for investment.

Payments for Australian technology and other services would be deductible as in the current corporate income tax, but with immediate expensing of all expenditure on research and development. Immediate expensing with provision for compensation of negative cash flows at the tax rate would be highly encouraging of Australian investment in research and development. Existing incentives for Australian research and development have their justification in externalities and should not be affected by the changes in taxation.

An anonymous referee has commented that the proposal for denying deductions for imported services that are not directly related to sales to Australia could be introduced into the existing corporate tax system, independently of the shift to the cash flow tax. That would cause the existing corporate tax to raise more revenue than it does now. While that is true, the treatment that we propose for imported services sits more comfortably within the logic of a rent tax than a standard corporate income tax. However, we have no objection to a reader choosing to see our proposed reform as a package of two reforms: the shift to a cash flow case for corporate taxation; and the proposed treatment of deductions for imported services. The revenue effects of the proposed reforms are then the revenue effects of the package. Within this package, the denial of the deductions for imported services unless there is a direct link to provision of the services in Australia would account for about $12 billion of the $162 billion contributed by the Cash Flow Tax in 2029–30. The denial of the deductions for imported services would account for about $73 billion of the $1,180b contributed over the decade 2020–21 to 2029–30.

An anonymous referee has commented that our paper is directed to corporate income alone, and not to business income, and suggested that we should spell out how other business income would be treated. There would be additional efficiency gains in extending the proposal to all business income. That is an appropriate focus of future effort by a government committed to changing the standard corporate income tax to a cash flow tax. We have not included this extension of the proposal in our revenue estimates.

## 9. Arrangements for Transition and Effects on Revenue

We propose phasing in a cash flow tax while simultaneously phasing out the existing corporate income tax under an 'irrevocable switch' scheme.

An irrevocable switch scheme enables any taxpayer to elect in any year in the first 10 years of the new tax system to immediately and fully switch from corporate income tax to cash flow tax. If there has been no prior election, the switch would occur after the 10th year.

We envisage the FSIT applying to financial institutions from the beginning of the transition. The FSIT is more favourable to banks than the established corporate income tax.

For this scenario we model the revenue impact of the reform with a 30 per cent tax rate. We take as the 10-year transition period 2020–21 to 2029–30.

Summary outcomes under each option for the final year of the transition period are presented in Table 2. The results relate to Australian companies with aggregated annual turnover above $25 million. The methodology underpinning the calculations is provided in the Appendix.

By moving to a cash flow base, taxable income is increased by $128.2 billion in 2029–30. If the cash flow tax rate were maintained at 30 per cent, the increase in tax collection above the existing corporate income tax is an estimated $37.5 billion.

The transition path of the estimated tax payable under the irrevocable switch scheme over the period 2020–2021 to 2029–30 is presented in Figure 1. By the year 2029–30 the revenue for the cash flow tax is estimated to be $179.1 billion and the revenue from corporate tax $141.6 billion. Our modelling assumes 50 per cent of companies switch in the first year while the rest switch in the 10th year. This assumption is based on likely corporate responses to the opportunity to

**Table 2  Estimated Taxable Income and Tax Revenues in 2029–30**

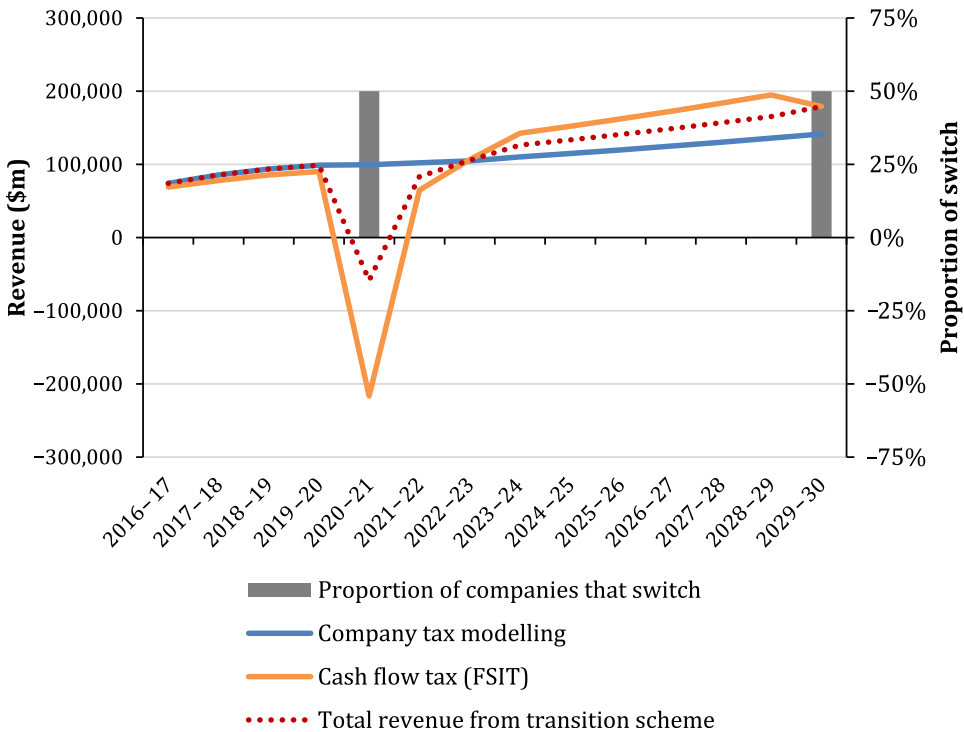| | | | | 30% Tax rate | |
|---|---|---|---|---|---|
| *Tax scheme* | *Transition scheme* | *Taxable income (2029–30) $ million* | *Diff. to company tax $ million* | *Tax payable (2029–30) $ million* | *Diff. to company tax $ million* |
| **Existing company tax** | | **546,324** | | **141,645** | |
| **New cash flow tax with FSIT** | **Irrevocable switch, immediate CAPEX deduction** | **674,561** | 128,237 | **179,095** | 37,450 |

*Source:* ISA Analysis with data from ATO, ABS, S&P Capital IQ and Ruthven Institute.

increase the present value of deductions by taking them earlier. We expect that business investment would be much larger under the cash flow tax, but we have modelled future revenues on the basis that there is no change in levels of investment. Higher investment would reduce taxation revenues early in the period, and increase them later by larger amounts.

Under the irrevocable switch scheme, higher levels of capital expenditure are assumed in the first 2 years of the transition period, resulting in negative revenue outcomes before recovering and overtaking

**Figure 1  Irrevocable Switch and Corporate Income Tax, Revenues by 2029–30 (30 per cent tax rate for cash flow tax)**



*Source:* ISA modelling with data from ATO, ABS, S&P Capital IQ and Ruthven Institute.

projected revenues from the company tax in the third year. The pattern of capital investment under the scheme is depicted in Figure 2. The spending profile shows significant front-loading in the early years as companies take advantage of immediate deductions of their investment expenditure.

In our estimates of additional tax revenue under the cash flow tax, we have endeavoured to use the best available public data. We have sought to overcome the apparent behavioural bias in publicly available data sources collated by the ATO embedded in the ATO's International Dealings Schedule, which experts have told us may tend to understate taxable income reported in Australia.[3] Our approach has also been sense-tested by professionals with deep experience in international dealings. We believe our projections are conservative, since they do not account for second-round efficiency gains that are likely to increase productive investment and other economic activity and hence contribute to larger revenues (as identified in Altig et al. 2001).
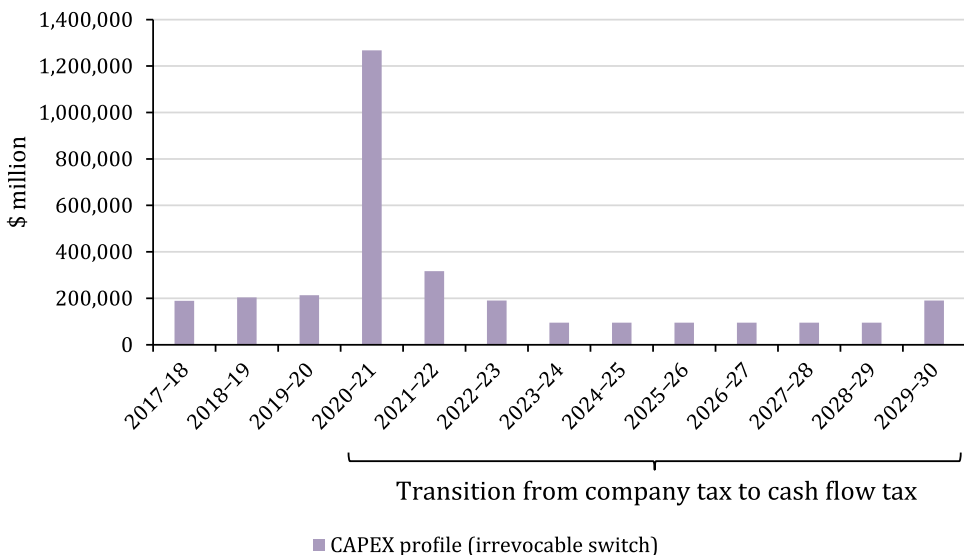
Why are the estimated revenues from taxing rent via the cash flow tax larger than from the standard corporate income tax?

Cross-checking of our estimates reveals that most of the estimated revenue gain is attributable to taxable entities with international dealings. These estimated revenue gains come from privately held companies —international branches of foreign-owned and Australian-owned enterprises. The proposed approach reduces revenue leakage associated with transfer pricing surrounding global supply of capital, intellectual property and conventional physical supply chains.

Material problems that arise around transfer pricing by consolidated operations include:

(i)   contract production of factory-less goods (for example, Apple does not produce iPhones in Australia but charges the branch office for the intellectual property);

(ii)  the creation of special-purpose entities where intellectual property is parked by foreign affiliates (for example, Ireland, a tax shelter, saw GDP jump by 26 per cent in 2015[4] because of a one-off sale of a special purpose entity); and

**Figure 2  Assumed Profile of Capital Expenditure under the Irrevocable Switch Scheme**



*Source:* Derived from ABS Cat.5206.0.

(iii) use of debt by large capital importers to reduce Australian income.[5]

## 10. Preferred Transition Approach

Companies that had incurred large amounts of debt in the period prior to the introduction of the cash flow tax, and have low expectations of capital expenditure in future, are likely to opt to remain in the corporate income tax system for as long as possible, enabling them to claim deductions for interest paid. Companies with big investment plans during the early years of the transition will have an incentive to switch to the cash flow tax, enabling them to immediately expense all eligible capital investment. Still other companies might opt into the cash flow tax during the middle of the transition, having claimed interest deductions on prior investments for corporate income tax purposes and looking forward to obtaining the benefits of immediate expensing of new capital expenditures under the cash flow tax. Firms incurring or expecting to incur negative cash flows as a result of recession are likely to opt for immediate transfer to the cash flow tax.

Financial companies would be subject to a FSIT from the beginning. This is the existing corporate income tax regime, but with immediate expensing of investment.

## 11. Conclusions

We have formed and tested the view that replacing the corporate income tax with a cash flow tax with the design set out in this paper would contribute substantially to efficiency and economic growth, and to a more equitable distribution of the tax burden. It would protect the Australian fiscal system from the contemporary 'race to the bottom' in international rates of taxation of corporate income, and it would remove a number of distortions inherent in the current system of corporate income taxation.

The cash flow tax would substantially improve the trade-off between the amount of tax collected and incentives to invest in activities that would raise Australian output and incomes. It would remove taxation on normal profits—the expected income of firms operating in a competitive environment. This would include most small and medium-sized businesses.

The cash flow tax would substantially increase incentives for investment—or rather, remove powerful disincentives inherent in the standard corporate income tax for investment in capital-intensive, long-lived and more risky investments.

The cash flow tax would encourage investment in innovation, including, but not only, through research and development. It would do this by compressing the probability distribution of expected outcomes of investments—unsuccessful investments would be compensated at the cash flow tax rate. The recoupment of 'tax losses' at the tax rate from early years of negative cash flows would also support the financing of innovative investments, including those requiring research and development.

The cash flow tax would systematically favour small businesses in comparison with their treatment under the standard corporate income tax. They are much more likely to attract tax losses because of the competitive environment in which they operate and the greater likelihood that their losses will never be recouped under established arrangements.

The cash flow tax would remove incentives to distort financing structures to avoid tax, by artificially inflating reliance on debt. This is likely to contribute positively to efficiency. The removal of artificial encouragement to debt financing would make the economy less vulnerable to financial crises.

The cash flow tax would remove or greatly reduce the main opportunities currently used for avoiding and evading Australian corporate income taxation—artificially high interest payments and foreign technology and management fees.

It would also remove a large, systematic bias in favour of foreign and larger enterprises against Australian-owned and smaller enterprises in the current corporate tax system,

through removing opportunities for avoidance and evasion that are generally more readily available to foreign and larger enterprises.

The cash flow tax would be more equitable, because its incidence would be larger on high incomes, as a result of the concentration of ownership of corporations earning large amounts of economic rent.

The cash flow tax would reduce incentives for rent-seeking pressures on government to introduce laws and regulations that reduce competition. It may therefore contribute to economic efficiency, output and incomes in two ways: by reducing the waste of resources in rent-seeking behaviour; and by reducing deadweight losses from regulatory distortions as a result of rent-seeking pressure on government.

Finally, the introduction of the cash flow tax now would be highly expansionary, at the time when the economy needs stimulus of demand. With taxpayers free to choose when they move to the new tax, those with large investment plans would shift to the new regime and be more likely to make larger and earlier investments. Companies, especially small businesses, incurring losses now in the pandemic recession would receive partial reimbursement for those losses. These sources of loss to the revenue are advantageous now on macro-economic policy grounds. The macro-economic stimulus would be automatically withdrawn as operatingosses fall as the economy moves out of recession and early recipients of tax offsets for early investments qualify for smaller deductions in later years than they would have done.

We have designed the proposed cash flow tax to be relatively easy to implement, drawing mainly from concepts and data that are required in assessment of the current corporate income tax and Petroleum Resource Rent Tax. We have introduced transitional arrangements that would avoid sudden and large changes that detract substantially from the expectations of established businesses.

The best publicly available data has shortcomings, and we look forward to our estimates being improved by bodies like the Australian Treasury with the assistance of the ATO, which has access to more up-to-date data and a better understanding of the impact of recent international tax compliance initiatives.

We are confident that the various benefits to economic efficiency and economic growth outlined above would lead to a substantial increase in investment, productivity and incomes. There would be a decisive shift in the tax burden toward enterprises generating income from rent with little new investment, and away from businesses prepared to make large commitments to new investments. The increased incentives for investment would be especially strong in the competitive parts of the economy, where small and medium-sized businesses are dominant.

## Endnotes

1. Presently, businesses making losses can carry them forward for seven years at zero interest only. With deductions less than the NPV of expenditures, this is a disincentive for investment. More significantly, small businesses are less likely to survive long enough to benefit from loss deductibility. This inefficiently discourages small business from pursuing positive-ENPV innovations.

2. Murphy (2018), p. 32.

3. The aggregate company tax data presented by the ATO in its Australian Taxation Statistics publication and associated detailed table presents the most detailed, line-by-line, breakdown of the contributions of various revenue and expenditure items to reported company tax payable. However, for international dealings, the summary table which aggregates all information presents only a partial summary of the entirety of all transactions engaged in by entities. This gives taxpayers an opportunity to filter what they report and scope to understate their tax payable from overseas transactions. Also, there is no arithmetic check-sum for the incomplete set of international dealings that are reported by an entity back to the company tax return. Therefore, we believe the international summary reported by the ATO will tend to systematically understate the tax payable by entities. Evidence for this is the fact that collectively, international corporations have constantly run multi-billion dollar losses year after year. Our projections incorporate an adjustment factor to reflect the recent enhanced enforcement activities by the ATO in international dealings.

4. OECD 2016, *Irish GDP up by 26.3% in 2015?* viewed 13 November 2018 <http://www.oecd.org/sdd/na/Irish-GDP-up-in-2015-OECD.pdf>.

5. While the ATO uses thin capitalisation rules to limit these impacts, the regulations are still quite malleable.

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## Appendix: Methodology of Tax Modelling

Our tax modelling is based on publicly available data sources including the ATO's Tax Statistics, S&P's Capital IQ database of Australian listed company data, ABS CAPEX data and Ruthven Institute company data.

The bulk of the modelling was benchmarked on the latest ATO Tax Statistics for the income tax year 2016–17 using Detailed Tables 1a, 6a and 8.

1. We categorised all companies into 3 distinct groups:

   a. *Resident tax status Australian owned;*
   b. *Resident tax status foreign owned; and*
   c. *Non-resident tax status foreign owned.*

2. For the cash flow tax scheme, for companies other than banks, we exclude the following revenue/expense items in

Table 1a—Companies: Selected items, for income year 2016–17:

– **Revenue:** Gross interest and Unrealised gains on revaluation of assets to fair value.

– **Expenditure:** Interest expenses within Australia, Interest expense overseas, Royalty expenses overseas, Depreciation expenses and Unrealised losses on revaluation of assets to fair value. All companies are entitled to the immediate expensing of CAPEX.

3. For the cash flow tax scheme, we did not adjust Australian listed banks* for either:

– *Gross interest receipts; or*
– *Interest expenses within Australia.*

*Australian listed banks include: ANZ, CBA, NAB, WBC, BOQ, BEN, MQG and ABA. The interest items were obtained from S&P Capital IQ and aggregated. Banks are still entitled to the immediate expensing of CAPEX.*

4. To obtain sales revenue and cost of goods sold for foreign companies with resident tax status, we obtained the 5-year average (from 2012–13 to 2016–17) of each revenue and expense items from Table 8—International Dealings before we aggregate them. Under cash flow tax scheme, we exclude the following revenue/expenses items:

– *Revenue: Dealings with international related parties; Treasury related services; Management and administration services; Insurance; Reinsurance; Sales and marketing services; Software and information technology services; Technical services; Asset management; Other services; Derivatives; Guarantees; Other financial dealings; and Other revenues.*

– *Expenditure: Dealings with international related parties; Treasury related services; Management and administration services; Insurance; Reinsurance; Sales and marketing services; Software and information technology services; Technical services; Asset management; Other services; Derivatives; Guarantees; Other financial dealings; and Other revenues.*

5. We then adjusted both revenue and expenditure items from international dealings (excluding those items listed above) to account for the enhanced enforcement effects from measures taken by the ATO such as the Diverted Profits Tax (DPT) to ensure significant global entities pay tax given their significant economic activity in Australia. We implement this by adjusting the 5-year average International Dealings Schedule (IDS) net losses by 20 per cent.

6. Certain items in the Reconciliation to tax payable are excluded based on our reading of Tables 1a and 8, and consistent with structure of the tax reforms proposals outlined previously and our subjective line-items assessment of each item contained in the sheets.

7. We select 2020–21 to be the starting year for the cash flow tax transition for the ten-year period to 2029–30. We then match the Treasurer's estimates of the Commonwealth's company tax revenues by line item from 2016–17 over the outlook to 2022–23). For subsequent years we project tax revenue forward to 2029–30 by assuming a nominal annual growth rate of revenue and expenditure items of 4.50 per cent on average.

8. For convenience we use tax payable as the measure of tax revenue, not net tax.

9. We sourced our initial CAPEX value for 2016–17 from ABS 5206.0 National Accounts. The value ($167.9b) includes total non-dwelling construction (excluding net purchases of second-hand assets) and total machinery and equipment. This figure does not include the acquisition of intellectual property products. We've also verified with the ABS that this amount does not include the purchase of land.

10. As mentioned previously, CAPEX is fully deductible under all cash flow tax options. Under the irrevocable transition scheme, 50 per cent of companies are assumed to switch immediately to the cash flow tax while the remainder switch in 2029–30 (refer to Figure 1). For companies that elect to switch, their CAPEX is modified so that in aggregate, a significant portion of CAPEX will take place in the first two years of the transition period. However, the total CAPEX amount from 2020–21 to 2029–30 will be unchanged.

11. We have sought to confirm our primary analysis by comparison with listed company data published by S&P and via consultations with the Australian Taxation Office.