



MELBOURNE ECONOMIC FORUM

Replacing Corporate Income Tax with a Cash Flow Tax

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1. Governments have been cutting corporate income tax rates

Business taxation is in a state of crisis. There is widespread recognition that the 20th century corporate tax models are deeply flawed in 21st century conditions, but there is no consensus on an ideal reform. This paper sets out an alternative approach to corporate income taxation that aims to reduce or remove the main weaknesses of the established approach.

A corporate taxation model for the 21st 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 rents and decline of competitive returns to 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; and a declining national tax compliance culture and growing resentment of “globalisation” arising out of multinational enterprises’ tax avoidance and evasion.

Declining contributions of corporate taxation to national revenue have exacerbated inequality in after-tax income at a time when there is large community unhappiness at growing inequality in pre-tax incomes. They have contributed to the reaction against “globalisation” and to growing distrust 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 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 as much influence on after-tax returns on competitive investment 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 (such as 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.

More generally, the theory supporting taxing internationally mobile factors of production lightly in a perfectly competitive economy, leads to proposals to rely for tax revenue more heavily on consumption and on immobile factors of production such as land and minerals. The theory is sound enough when its assumptions are matched by the empirical reality. The rigorous application of the theory has led us into the search for systems of taxation that have low incidence on returns to capital operating in a competitive market, and high incidence on economic rents.

This paper suggests a fundamentally different approach to taxing corporate income. It proposes changing the corporate tax base to cash flow, and therefore to economic rent, to improve the trade-off between the amount of revenue collected and discouragement 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 can be applied in a single country with a minimal negative effect on incentives for investment of mobile capital in that country—so removing the “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 possibly reverses) a bias in the current taxation system in favour of low-risk investment and against innovation. It removes the main contemporary avenues for large-scale avoidance and evasion of corporate taxation. It greatly reduces taxation on competitive investment earning a normal return on investment, while increasing the incidence of taxation on economic rent. It avoids one important source of inequality in the distribution of income in developed countries.

There are some disadvantages. Like any change in taxation arrangements, a change to the proposed system would have some deadweight costs. We have proposed an approach to transition that involves minimal disruption. The proposed arrangement does not allow for deductions for royalties on foreign intellectual property and so might be seen as reducing incentives for global innovation. We judge that this is 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. Questions of claiming an optimal share of economic value for national income arise alongside the ideal of neutrality.

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 to 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 sub-marginal any investments that are expected to achieve before tax no more than the normal return on investment obtainable in competitive markets. 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 taxes even 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 ENPV 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.

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 uncertainty. In the presence of risk or uncertainty, a risk averse investor values a more certain outcome from one investment more highly than a less certain outcome from another investment with the same ENPV. 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 the investment less risky. A two-sided cash flow tax may therefore affect investment decisions positively, by reducing risk and uncertainty. This particular source of non-neutrality of a two-sided cash flow tax has the potential to raise incentives to invest and GNI above levels in the absence of taxation.

So an appropriately designed cash flow tax is neutral because its tax base is the economic rent component of corporate income; or non-neutral in a way that increases incentives for economically valuable investment through its effect in reducing risk and uncertainty.

In some circumstances, rent taxation can reduce economic distortions. It reduces the returns to rent seeking behavior, such as lobbying governments to change laws and regulations in ways that reduce competition. This may raise economic output by reducing the amount of resources dissipated in economically unproductive rent-seeking (Tulloch 1974, Krueger, 1974), or reducing the negative impact of regulatory distortion to protect firms from competition.

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 rents tends to increase income and wealth inequality, owing to the narrow ownership of the scarce assets that attract rents. 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, rents are profits above those necessary to attract the economically optimal amount of investment into an activity—returns in excess of the supply price of competitive capital. Rents are returns in excess of “normal profits”.

Rents persist 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 profits that occur following changes in economic equilibria, which takes time for competition to erode—the phenomena that Marshall called quasi-rents (Marshall, 1890). These cannot be taxed away without risking underinvestment in future productive innovation. They are not accurately described as rent. Investment that generates quasi-rent is not discouraged by the two-sided cash flow tax proposed in this paper.

Economic rents arise whenever the presence of high profits in an economic activity fails to expand 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. 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 a highly capital-intensive economic activity. 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 rents 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 efficient rents. 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 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 five 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 which 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 rents 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 rents 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 economies of scale include some manufacturing activities. 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 the community welfare.

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

4. The prevalence of rents

The share of rents 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 19th century (Piketty, 2013). The rents of private ownership of slaves contributed a large proportion of United States’ income at that time, and the capital value of slaves constituted about half of all wealth in the southern states by the mid-19th 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.

Rents from the concentration of private ownership of business assets were at the centre of the great fortunes of late 19th and early 20th century America, and their reduction the policy focus of President Theodore Roosevelt (Morris 2002).

In the decades, from the late 20th to the early 21st centuries, rents have expanded their share of total income. Rents on urban land have grown in parallel with the populations and economic predominance of large cities. Their importance in many countries now rivals that of agricultural land in early 19th century capitalism. The US, and increasingly China, have seen growth in rents 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 increased proportion of incomes have emanated from rent-heavy sectors, notably mining, urban real estate, information technology, financial services, large-scale retailing and a uniquely concentrated private media.

In the US, where the macro and micro evidence base is developing most rapidly, a range of recent economic analyses have 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 & Eeckhout, 2017, 2018). See similar findings in Kurz (2017), Dixon & Lim (2017), Barkai (2017) and Diez et al. (2018). The rise in rent accompanies increases in market concentration, especially in banking, healthcare, and ICT (US Council of Economic Advisors, 2016 and 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 just in the top 10 per cent by profitability rose from 20 per cent per annum in the mid-1980s to around 100 per cent in recent years (Furman, 2016). Rents have 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 & Orszag, 2016).

The pattern of growing rents is present in many countries. De Loecker & 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 incident on rents.

5. Cash flow taxes as rent axes

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: it is neutral.

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.

For 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 elegant in its neutrality and 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 Garnaut and Emerson (1983) 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. The RRT therefore 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.

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. One of its many criticisms of the RSPT had validity. 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 sovereign 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. Indeed, the circumstances under which such refunds were likely to be payable in large amounts would include those of a global economic crash, with low mineral prices. In navigating a recession, the government of the day may question the priority of writing out big cheques to large mining companies.

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 rents. 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 has the disadvantage that assessment involves application of concepts and collection of data that depart from those required for the corporate income tax.

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.

The ACC and ACE and variants of them have not been tried over a sustained period in any taxing jurisdictions.

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 to an efflorescence of suggestions for alternative approaches to taxing rents in recent times. 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 rents. We see larger gains and smaller losses in seeking an increase in the incidence of taxation on economic rents through an appropriately designed cash flow tax.

6. Previous modelling of rent taxes

Various efforts have been made to model the fiscal and macroeconomic 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. Most prominent among these are the computable general equilibrium (CGE) modelling exercises of Murphy (2018) and Dixon and Nassios (2018). 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.

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 percent, 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. 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.¹

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 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

¹ Murphy (2018), p. 32.

tax at a lower rate with a tax that denies interest deductibility and ultimately replacing the corporate income tax with a rent tax.

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, with a flavour of the PRRT. The cash flow tax would have as its base net cash flows, being taxable revenues (excluding 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.

No deduction would be allowed for imported services, unless the transaction is at arm's length and relates to current costs of goods and services directly applied to producing the service for which a deduction is claimed by an Australian taxpayer. This would deny a deduction for payments for imported intellectual property except to the extent that the service purchased by the Australian taxpayer has itself required direct expenditure on goods and services.

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. Foreign owners of intellectual property can earn rent through Australian sales, but payments for it are not deductible against Australian cash flows. This is unlikely to cause any reduction in global research and development. For Australian investment in research and development, the tax treatment is highly encouraging: immediate deduction of all expenditures, with provision for compensation of negative cash flows at the tax rate.

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 project when large capital expenditure is required for refurbishments 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 made available for offset against any cash flow tax payable by any entity. Alternatively, at the election of the taxpayer, the certified amount could be carried forward at the 10-year government bond rate to be offset against its own future positive net cash flows.

If the taxpayer claims the offset in the year it is certified, rather than carrying it forward, the company 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 Committee (1978) on UK tax reform, which has since become convention. 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:
 $(R + F) - (\bar{R} + \bar{F})$

Table 1 Components of R , \bar{R} , F and \bar{F} in R and R+F-base taxation

INFLOWS	OUTFLOWS
<i>Real items</i>	

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}
<i>Financial items</i>	
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 case
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}

Source: Auerbach et al. (2017).

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 rents of financial institutions, but imposes prohibitively complex tax accounting requirements on businesses and may encourage perverse profit deferral (Auerbach et al., 2017). The R-base, on the other hand, may substantially simplify tax calculations compared to the existing corporate income tax, but excludes financial flows from its coverage.

We propose avoiding these problems by combining an R-base cash flow tax for all firms with separate provisions for the taxation of 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, and 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 the IMF (2017), and the Financial Services Tax proposed by the Australian Treasury’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, or 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 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 CFT and FSIT.

8.2 Countering base erosion and profit shifting

Multinational corporations shift profits to tax havens or lower tax jurisdictions through inflated related party interest payments (either 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 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.

Payments for Australian technology and other services would be deductible as in the current corporate income tax, with immediate expensing of all expenditure on research and development, as with all capital expenditure. There is no tax avoidance issue here, as artificial inflation of payments would lead to increased tax liability for the seller of the intellectual property.

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. We have considered two transition options:

Option A: A 10-year, 3-percentage point annual linear reduction in the corporate income tax rate to zero, accompanied by a 3-percentage point per annum phase-in of the cash flow tax rate.

Option B: Enabling any taxpayer to elect in any year in the first ten years of the new taxation system to immediately and fully switch from corporate income tax to cash flow tax. The switch would occur after the 10th year if there had been no prior election.

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

For each of these two scenarios we model the revenue impact of the reform with a 30 per cent and a 25 per cent tax rate. We take as the 10-year transition period 2019-20 to 2028-29.

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

Table 2: Estimated taxable income and tax revenues in 2028-29

Tax scheme	Transition scheme	30% Tax rate				25% Tax rate	
		Taxable income (2028-29)	Diff. to company tax	Tax payable (2028-29)	Diff. to company tax	Tax payable (2028-29)	Diff. to company tax
		\$ million	\$ million	\$ million	\$ million	\$ million	\$ million
Existing company tax		596,008		154,002			
New cash flow tax with FSIT	A. Gradual phase in/phase out at 3%	679,223	83,215	178,357	24,355	149,367	-4,634

New cash flow tax with FSIT	B. Irrevocable switch, immediate CAPEX deduction	729,851	133,843	193,175	39,173	162,025	8,023
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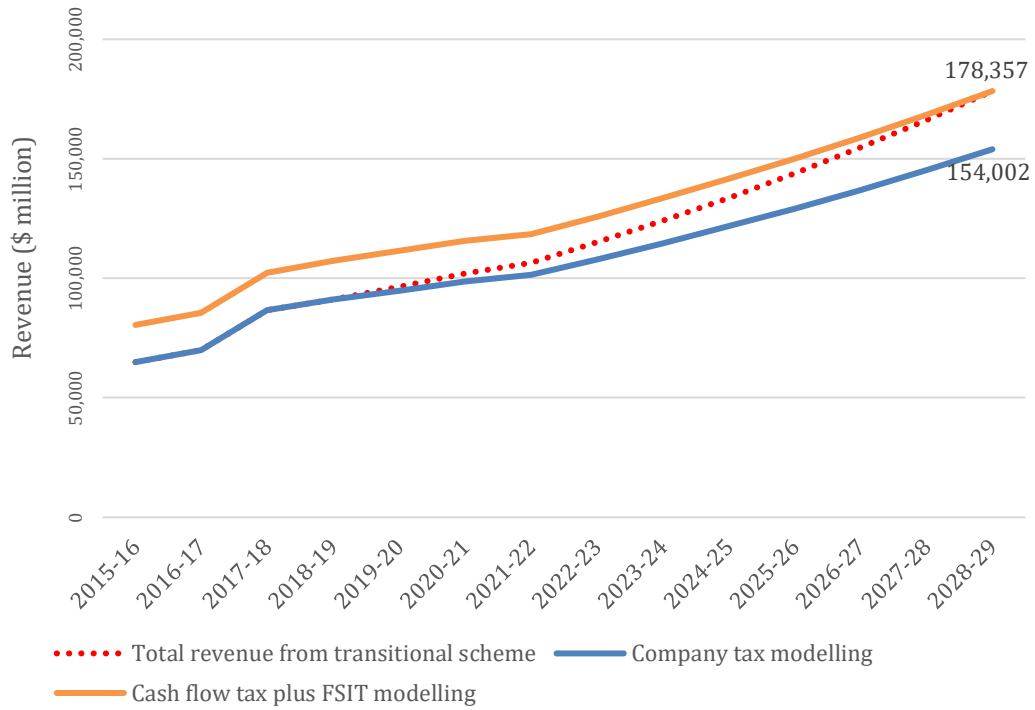
Source: ISA Analysis with data from ATO, ABS, S&P Capital IQ and Ruthven Institute

By moving to a cash flow base, taxable income is increased by \$83 billion in 2028-29 under the gradual transition option and \$134 billion under the irrevocable switch option. 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 \$24 billion in 2028-29 under the gradual transition option and \$39 billion under the irrevocable switch option.

If the cash flow tax rate were lowered to 25 per cent, under the irrevocable switch option it would still collect an estimated \$8 billion extra in 2028-29 compared with corporate income tax at a 30 per cent rate. The cash flow tax would collect around \$5 billion less than a 30 percent corporate income tax under the gradual transition option.

The transition path of the estimated tax payable under the gradual transition option over the period 2019-20 to 2028-29 is presented in Figures 1a & 1b. These charts describe the smooth transition between the corporate income tax and the cash flow tax regimes. It shows that the reform leaves plenty of fiscal space for lowering tax rates below 30 percent if that is desired as a policy choice. In fact, the transition paths of the existing corporate income tax and the cash flow tax with a rate of 25 per cent are almost identical.

Figure 1a: Revenues by 2028-29: gradual transition option and corporate income tax (30% tax rate for cash flow tax)



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

Figure 1b: Revenues by 2028-29: gradual transition option and corporate income tax (25% cash flow tax rate)



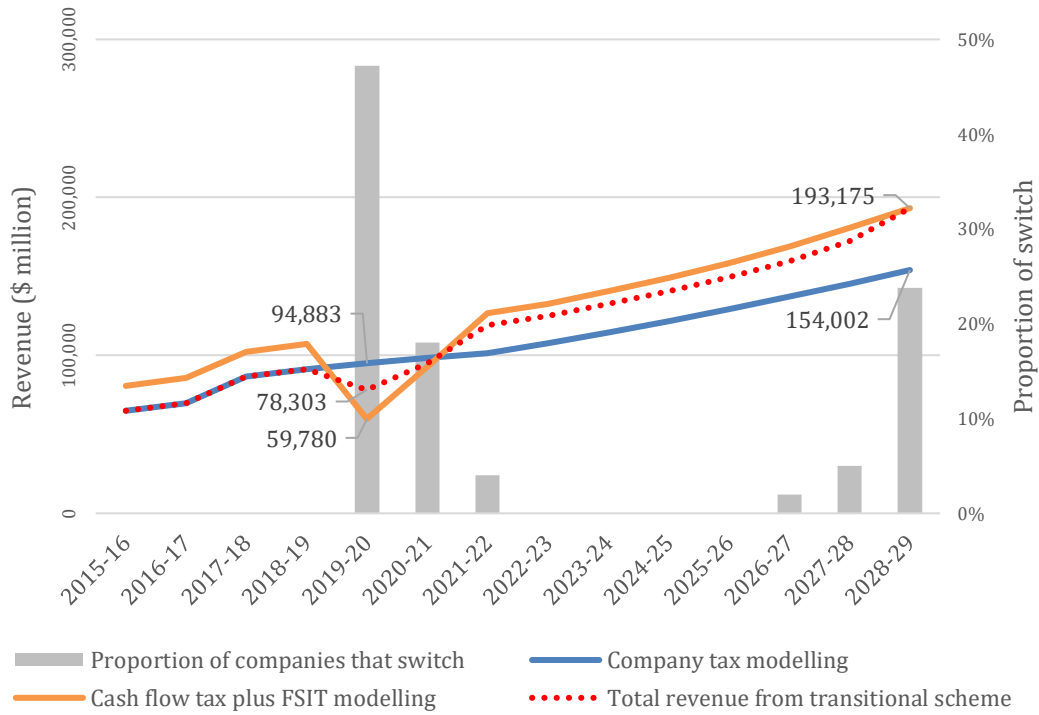
Source: ISA modelling with data from ATO, ABS, S&P Capital IQ and Ruthven Institute

Over the decade from 2019-20 to 2028-29 slightly more tax is collected under the irrevocable switch option, because write-offs are front loaded and the series of annual tax payables will be larger dollar amounts in the outyears.

- The irrevocable option begins with three years of revenue losses relative to the existing company tax. The gradual phase-in always generates more revenue than the company tax, for the 30 per cent rate and a little less for the 25 per cent rate.
- The irrevocable option promotes larger capital outlays early on, so there is less capital to write down in later years, and more tax to be paid in those years.

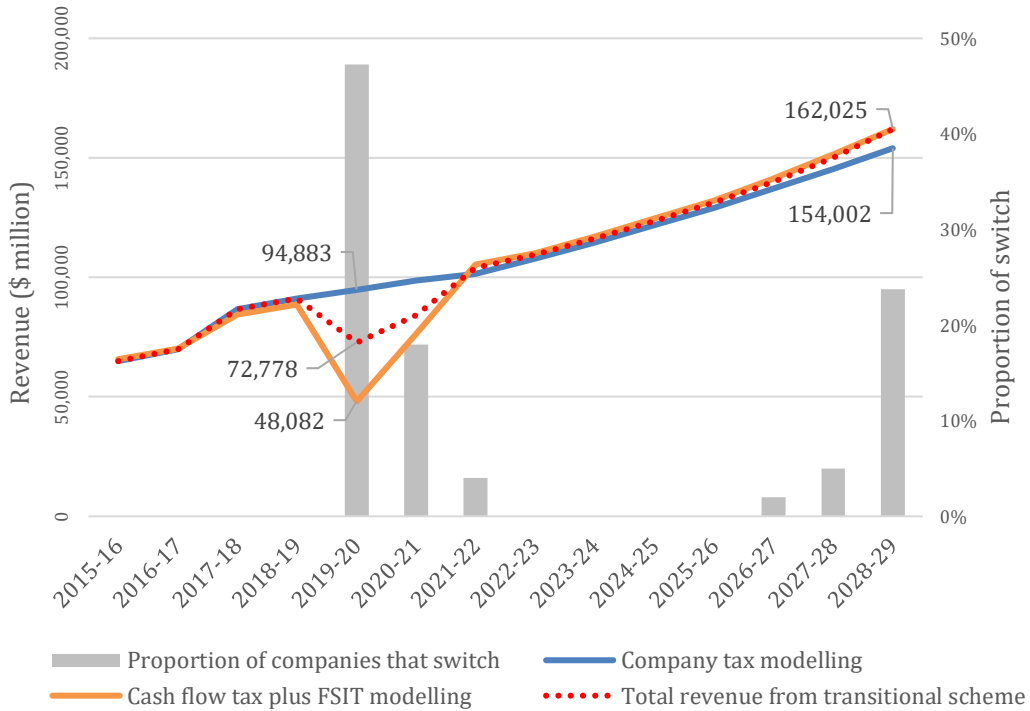
The transition path of the estimated tax payable under the irrevocable switch option over the period 2019-20 to 2028-29 is presented in Figures 2a & 2b. Our modelling of these options assumes a bias towards early switching, with more enterprises choosing to opt-in early and a smaller number choosing to switch later. This assumption is based on likely corporate responses to the opportunity to increase the present value of deductions by taking them earlier. Annual revenue outcomes are likely to be considerably stronger late in the transition decade under the irrevocable switch than the gradual phase-in options.

Figure 2a: Irrevocable switch option and corporate income tax, revenues by 2028-29 (30% cash flow tax rate)



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

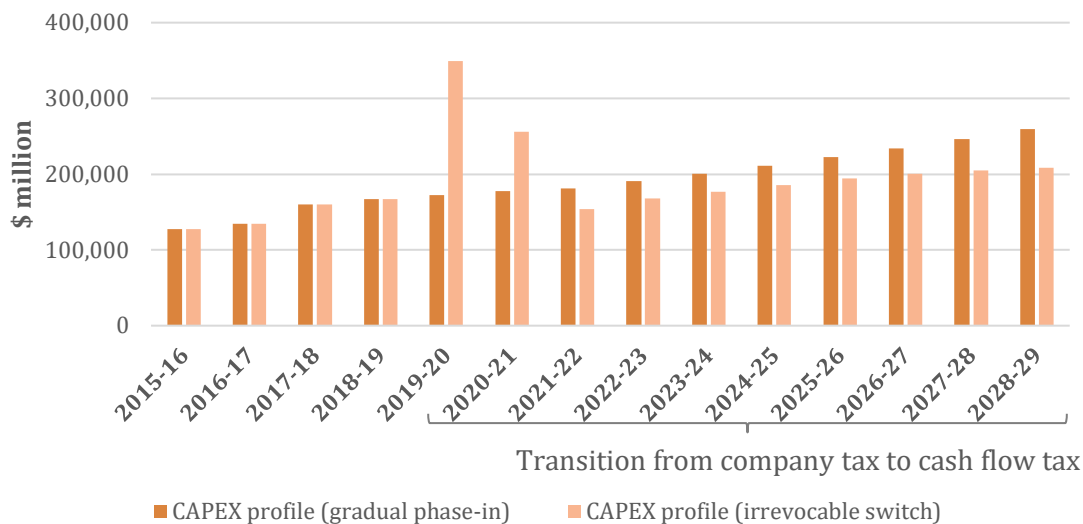
Figure 2b: Irrevocable switch option and corporate income tax, revenues by 2028-29 (25% tax rate)



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

A key difference in estimated revenues under the gradual transition and irrevocable switch options is attributable to the assumptions made about the timing of capital expenditures. Under the gradual transition option, it is assumed that capital expenditure occurs and is written off smoothly over the period. Under the irrevocable switch option, higher levels of capital expenditure are assumed in the first two years of the transition period. The pattern of capital investment under the two options is depicted in Figure 3.

Figure 3: Assumed profile of capital expenditure under the smooth transition and irrevocable switch options



Source: Derived from ABS Cat.5204.0

In our estimates of additional tax revenue under the cash flow tax options, 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.² Our approach has also been sense-tested by professionals with deep experience from the Australian Taxation Office and Parliamentary Budget Office.. 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.

² 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 international dealings 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.

Why are the estimated revenues from taxing rents via the cash flow tax so much 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 2015³ because of a one-off sale of a special purpose entity); and
- (iii) Use of debt by large capital importers to reduce Australian income.⁴

10. Preferred transition approach

Based on the foregoing analysis and revenue estimates, we favour a merging of the two options: a cash flow tax phasing in at 3 percentage points per annum while the corporate income tax phases out at the same rate, while giving companies an irrevocable choice to switch to the cash flow tax at any time during the transition.

Companies that had incurred large amounts of debt in the period prior to the

³ OECD 2016, *Irish GDP up by 26.3% in 2015?* Accessed on 13 November 2018, URL: <http://www.oecd.org/sdd/na/Irish-GDP-up-in-2015-OECD.pdf>

⁴ While the ATO uses thin capitalisation rules to limit these impacts, the regulations are still quite malleable.

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.

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. The taxable income of financial companies would be interest received minus interest paid, plus fees, less cash expenses and investments.

11. Conclusions

We have formed and tested the view that replacing the corporate income tax by 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 taxation 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 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 and long-lived 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 ability to sell “tax losses” from early years of negative cash flows would also ease challenges of financing innovative investments, including those requiring research and development.

The cash flow tax would remove incentives to distort financing structures to avoid taxation, 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 crisis.

The cash flow tax would remove some and greatly narrow others of the main avenues currently used for avoiding and evading Australian corporate income taxation—artificially high interest payments and technology and management fees.

It would also remove a large, systematic bias in favour of foreign and larger 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 than for Australian and smaller businesses.

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. This increased progressivity in taxation would be a relatively efficient means of achieving greater equity.

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.

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 will avoid sudden and large changes that detract substantially from the expectations of established businesses.

Using conservatively the best available public data, we have demonstrated that if none of the gains to allocative efficiency and economic growth that can be expected from the new tax system are secured, a rate of cash flow tax of 25 per cent would raise as much revenue as the corporate income tax at a rate of 30 per cent. The best publicly available data has shortcomings, and we look forward to our estimates being improved by bodies like the Australian Treasury, the Australian Tax Office and the Parliamentary Budget Office, that have access to data that are not currently in the public arena.

We believe that the various benefits to economic efficiency and economic growth outlined above together would lead to a substantial increase in investment, productivity and incomes. There would be a decisive shift in the tax burden from enterprises which are generating income from rents with little new investment, and businesses which are 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. We would be surprised if the reduction in the deadweight burden of corporate taxation and the increase in incentives for capital expenditure did not lead to a noticeable increase in levels of investment, economic activity and public revenue—the latter beyond the estimates provided in this paper.

We commend the cash flow tax as proposed in this paper as an approach to reform of a deeply problematic Australian system of corporate income taxation.

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 2015-16 using Detailed Tables 1a, 3a and 7a.

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 1 – Companies: Selected items, for income year 2015-16:*
 - **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 aggregate items from Table 7a – International Dealings. 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 perceived behavioural bias in the International Dealings Schedule (IDS) prepared by the Australian Taxation Office. The IDS represent the compilation of data sourced*

from a multitude of reporting entities such as companies, trusts, individuals etc. No effort is made in the IDS to link reported tax data back to reported company tax data aggregate data using check sum totals. No effort is made in the IDS to provide a complete summary of all foreign operations in all jurisdictions. Nor is there an effort to define subsidiary/parent relationships and direction of dealings. For these reasons to account for the potential bias against reported tax payable in Australia, we implemented an adjustment factor of 0.875, where revenue items were divided by this number while expenditure items were multiplied by this number.

- 6. Certain items in the Reconciliation to tax payable are excluded based on our reading of Tables 1a and 7a, 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 2019-20 to be the starting year for the cash flow tax transition for the ten-year period to 2028-29. We then match the Treasurer's estimates of the Commonwealth's company tax revenues by line item from 2016-17 over the outlook to 2021-22). For subsequent years we project tax revenue forward to 2028-29 by assuming a nominal annual growth rate of revenue and expenditure items of 5.25 per cent.*
- 8. For convenience we use tax payable as the measure of tax revenue, not net tax.*
- 9. The gradual transition scheme assumes that for all businesses, their company tax obligation starting from 2018-19 will have its rate reduced by 3 per cent each year until 0 per cent in 2028-29, while their cash flow tax obligation will have its rate rise 3 per cent each year until 30 per cent in 2028-29;*
- 10. We collected total CAPEX estimates from a variety of sources. For the year 2015-16, the top 500 ASX listed companies' aggregated CAPEX was \$60,583m (data sourced from S&P Capital IQ). We also identified from ABS 5625.0 Private New Capital Expenditure and Expected Expenditure, Australia – Table 1E. Actual Expenditure, the total CAPEX to be \$127,460m. Lastly, ABS 5204.0 Australian System of National Accounts – Table 2. Expenditure on Gross Domestic Product, from Private Gross fixed capital formation – Total private business investment, the total amount was \$214,741m. In our analysis we selected the CAPEX figure from ABS5625.0 Private New Capital Expenditure and Expected Expenditure.*
- 11. As mentioned previously, CAPEX is fully deductible under all cash flow tax options.*
 - a. Under the gradual transition, CAPEX profile, it is assumed to grow at the derived growth rate till 2028-29.*
 - b. Under the irrevocable transition, a significant portion of companies are assumed to switch immediately to the cash flow tax while the remainder switch near 2028-29 (refer to Chart C). 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 2019-20 to 2028-29 will be unchanged.

- 12. 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 and the Parliamentary Budget Office.*

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