

Modifying Income Support in the Australian Tax and Transfer System

some options and an evaluation

by*

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ABSTRACT

In this paper we experiment with the idea of a conditional minimum income (CMI) support system to replace the current raft of allowance and pensions payments for families of working age. In doing so, our main motivation is to establish whether such a system can fulfil the objectives of simplification and rationalisation relative to the current system of social security payments, whilst at the same time delivering broadly equivalent levels of income support. In addition, we examine the potential for integrating an employment-conditional benefit or tax credit (EC) into the CMI, to provide an explicit instrument with which to promote employment incentives. Our idea is to explore the concept of a CMI as a route to the simplification of income support, and the extent to which such a scheme might be integrated into the current tax and transfer system in Australia.

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1 Background and Context

The Australian tax and transfer system has undergone significant scrutiny and reform in recent years. The Reference Group on Welfare Reform, chaired by Mr Patrick McClure, was appointed in 1999 to explore potential policy reform ideas to streamline the welfare system in place at that time. The final report of this Reference Group, *Participation Support for a More Equitable Society*, was released in July 2000, to coincide with the introduction of the New Tax System in the same month. And in 2002, a joint consultation document, *Building a Simpler System to Help Jobless Families and Individuals*, was released jointly by the Ministers for Family and Community Services (FaCS) and Employment and Workplace Relations (DEWR), inviting ideas to further simplify the system of income support payments in Australia, and to improve work incentives. This paper provides a contribution to this ongoing debate.

The taxation and social security systems have a major influence on the distribution of income to families, on the incentives to work and to self-provide, and on the complexity they face in making decisions. Over time, new measures have been introduced and existing components have been modified to meet new needs and objectives. Despite some significant overview reforms, including the 2000 ANTS package, the interaction of different components of the current tax and social security systems are complex, often lacking in transparency, and generate substantial disincentives to work for some families.

In this paper we experiment with the idea of a *conditional minimum income* (CMI) support system to replace the current raft of allowance and pensions payments for families of working age. In doing so, our main motivation is to establish whether such a system can fulfil the objectives of simplification and rationalisation relative to the current system of social security payments, whilst at the same time delivering broadly equivalent levels of income support. Under the hypothetical CMI system, allowances and supplements for working age families are combined into a single payment whose value is made conditional on household circumstances, and the CMI is withdrawn at a unified taper rate.

In addition, we examine the potential for integrating an employment-conditional benefit or tax credit into the CMI, to provide an explicit instrument with which to promote employment incentives. The specific CMI parameterisations presented in our empirical evaluation should not be taken as an explicit policy proposal. More detailed work is

needed to ensure that no group would be disadvantaged from such a move. Our idea is more to explore the concept of a CMI as a route to the simplification of income support, and the extent to which such a scheme might be integrated into the current tax and transfer system in Australia.

The remainder of the paper is organised as follows. Section 2 provides a description of the current tax and social security systems, and outlines the problems with the current system and the rationale for considering a CMI. Section 3 outlines some general design issues and a potential structure for a CMI. Section 4 briefly outlines the MITTS model used to undertake the empirical evaluation, and the main part of the paper in Section 5 provides a summary of the effects of some hypothetical CMI structures on government revenue, winners and losers, changes in effective marginal tax rates and employment, and changes in “churning”. A final section offers some conclusions.

2 Income support in Australia: a short history, and some motivations for reform

2.1 A short history of welfare reform in Australia

There has been a fairly consistent amount of activity in welfare reform over the three decades since the Whitlam reforms of the early 1970's, and the release of the Henderson report into poverty in Australia. Table 1 details some of the main events of these three decades, ending with the introduction of the New Tax System in July 2000, the formation of the Reference Group on Welfare Reform, and the subsequent release of the McClure report.

Table 1. A time-line of welfare reform in Australia

<i>Year</i>	Policy reform
1973-75	<p>(Whitlam) Means-test for old-age pensions abolished. Unemployment, sickness and special benefits increased to match age pension rates</p> <p>Supporting mother's benefit introduced.</p> <p>Henderson poverty report released.</p>
1976-82	<p>(Fraser) Family Allowance introduced for low-income families with children in receipt of other pensions or benefits.</p> <p>Pensions made taxable, with tax rebates for OAPs.</p>
1983-5	<p>(Hawke) Family Income Supplement (FIS) introduced for low-income families not in receipt of benefits or pensions.</p> <p>Assets tests introduced on pensions.</p>
1986/7	FIS replaced by means-tested Family Allowance Supplement (FAS)
1988/9	<p>Sole Parent Pension (SPP) replaces supporting mother's benefit.</p> <p>Child Support Scheme (CSS) and Jobs, Education and Training (JET) scheme introduced for sole parents.</p>
1990-92	(Keating) Assets tests introduced on Family Allowance and FAS.
1993	Family Allowance replaced by Basic Family Payment (BFP). FAS, guardian allowance, rent assistance integrated into Additional Family Payment (AFP)
1994/6	<p>Release of <i>Working Nation: a white paper on employment and growth</i> in 1994.</p> <p>Introduction of Parenting, Partner, Mature Age, Widow and Youth Training Allowances.</p> <p>BFP and AFP combined into single Family Payment (FP).</p>
1996	(Howard) Introduction of Family Tax Initiative (FTI) to give financial assistance in cash or through the tax system
1997	<i>Work-for-the-Dole</i> initiative piloted, requiring 18-24 year old persons unemployed for at least 6 months to work 12-15 hours per week in return for receipt of Newstart
1998	<p>Mutual obligation introduced for 18-24 year old persons unemployed for at least 6 months.</p> <p>Family Payment renamed Family Allowance (FA).</p> <p>Youth Allowance (including parental means-test) replaces Newstart, YTA & Sickness Allowance for under 21 year olds, and AUSTUDY for students under 25.</p>
1999	Mutual obligation expanded to 25-35 year old persons who were unemployed for 12 months
2000	<p>Simplification of tax & transfer system: Introduction of "<i>A New Tax System</i>"(ANTS)</p> <p>Five economists letter to PM</p>
2001-	Reference Group on Welfare Reform report released.

2.2 *The ANTS reforms of July 2000*

Much of the motivation behind the introduction in July 2000 of *ANTS (a new tax system)* centred on the need for simplification of a system which had increased in complexity through a process of incremental reform over the previous decade or more.

The Australian Treasurer's 1998 report, which laid out the detail of the new tax system, identified simplification as a central objective of reform:

“There is a need to simplify the structure and delivery of assistance for families. The number of programmes could be reduced substantially with only one payment dealing with each target group and their delivery being made through one agency.”

“Tax Reform: not a new tax, a new tax system”. August 1998, p.43.

In addition to the introduction of GST, the July 2000 reform simplified considerably the pre-existing structure of support for families and children:

- Family Allowance, Family Tax Payment Part A and Family Tax Allowance Part A were integrated into a single payment, called *Family Tax Benefit Part A*.
- Basic Parenting Payment, Guardian Allowance, Family Tax Payment Part B, Dependent Spouse Rebate, Sole Parent Rebate and Family Tax Assistance Part B were integrated into a single payment, called *Family Tax Benefit Part B*.
- Childcare Cash Rebate and Childcare Assistance were integrated into a single payment, called *Child Care Benefit*.

The current tax and welfare system in Australia, although simplified relative to earlier systems, is still relatively complicated in the way that it delivers income support to families with children. At the moment, children are supported through the following main payments:

- Family Tax Benefit Part A. This is a means-tested benefit that is assessed on family income, with a payment for each child in the family which varies according to the age of each child.
- Family Tax Benefit Part B. This is benefit for couples where the secondary earner must have income below a certain amount. The level of the benefit depends on the age of the children in the household, and is means-tested on the income of the secondary earner in the household.

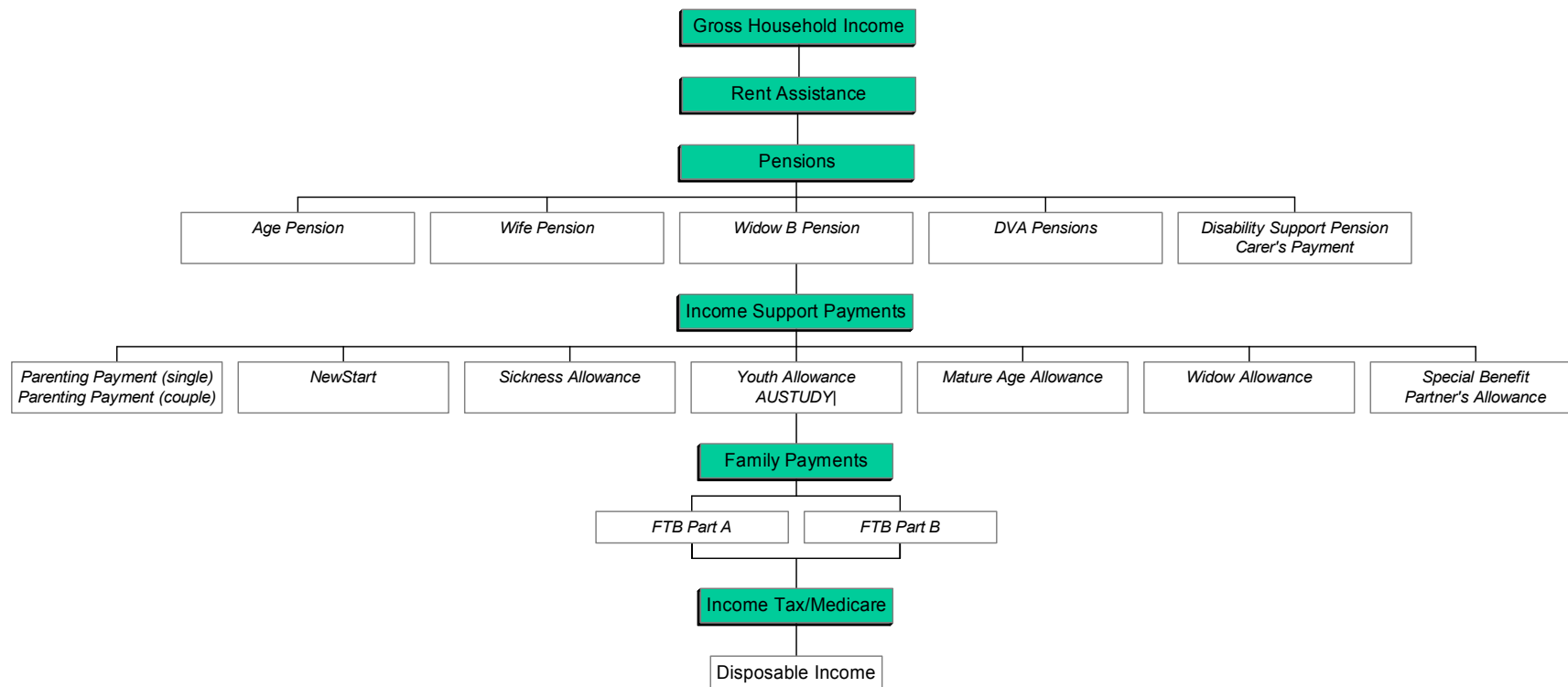
- Parenting Payment (Single). This is pension for sole parents, up to about \$10,900 per year, at present, means tested against their income. There is a free area, followed by a withdrawal rate of 40 cents in the dollar. To the extent that this payment is higher than Newstart Allowance for a single person, this can be seen as a payment for the presence of a child.
- Parenting Payment (Partnered). This is payment for a partnered parent, up to about \$8,700 per year. While the maximum entitlement is the same as for Newstart, the means test is slightly different, which can result in a higher payment at some levels of income. This is means tested against both the customer's and the partner income.
- Child-care subsidies. Child-care subsidies are paid on an hourly rate (up to about \$22 per week for a non school child and about \$19-70 for a school child) and are normally paid to the providers of child-care to reduce the fees charged. There is a maximum rate payable to families with incomes under about \$30,000 (who also receive the maximum rate of Family Tax Benefit Part A). Thereafter it is tapered out until it becomes a minimum rate is payable above a certain income level (about \$85,000 per year for one child in care, \$93,000 for two children) and progressively higher incomes for more children in care.
- Other payments relating to children also include a Maternity Allowance and Baby Bonus for certain parents with newborn babies.

Figure 1 illustrates the organisation of the July 2000 ANTS system, summarising the hierarchy of pensions, allowances, family payments and taxation. Despite the simplifications in welfare support payments carried out as part of the ANTS reforms, Figure 1 makes evident the fact that income support in Australia remains complex, particularly in the way it provides financial support to families with children. It is also the case that an explicit and transparent minimum income guarantee does not exist in the current Australian system, in contrast with many other systems around the world.

2.3 simplification and coherency

It is easy to see how such complexities and inconsistencies emerge in tax systems generally. For a variety of reasons (inertia; administrative complexity; political cycles etc.), the process of tax and welfare reform can become piecemeal or incremental, fitting easily

Figure 1. Organisation of Post-ANTS 2000 tax and payment system



into an existing policy framework. And of course, the motivation for fundamental reform is tempered by political considerations, most obviously the desire to limit the number of 'losers'. It would be naïve not to recognise that these are real and powerful pressures. However, the effects of *incrementalism* in tax policy reform on the coherency of the system as a whole can be significant.

A *coherent* tax system, as developed in Duncan (2002), is one whereby specific and separate policy instruments are able effectively to target specific policy objectives, with minimal overlap and with clarity of purpose and transparency of structure. Duncan (2002) contends that many of the more recent developments in tax and transfer policy in Australia, the United Kingdom, the United States and elsewhere in the community of OECD countries, move their respective tax systems towards coherency.¹

In framing some options for reform to income support in Australia, we have had some regard for the potential to move the post-ANTS system closer to coherency, through a separation of policy objectives, and the instruments with which to deliver on those objectives. Specifically, we explore the possible effects of replacing the current tier of allowance and pensions payments to working age families with a *conditional minimum income* (CMI) system in which every family will be entitled to a minimum income, subject to some eligibility requirements related to their social and economic participation.

3 A Conditional Minimum Income system

3.1 rationale and implementation

The idea of a *conditional minimum income* (CMI) system is to provide all households with a minimum level of income, contingent upon their characteristics, and conditional upon appropriate participation requirements. It is essentially the idea proposed by the McClure Report, to provide a potential route to rationalisation of the current income support system, making it more integrated and less complex. It would also provide a route to *coherency* in the delivery of income support, in the sense described in Duncan (2003). That is to say, a CMI would provide a single instrument with which to deliver income support to families with different circumstances and needs, a role currently fulfilled by a range of allowance and pensions payments under the current post-ANTS system. Specific credits

¹ The ANTS reforms of July 2000 in Australia, and the WFTC and more recent tax and child credit reforms in the United Kingdom, are two cases in point.

within the CMI system could then be used to target different client groups. The CMI system could also provide a key to the harmonisation of withdrawal tapers and free areas.

A conditional minimum income (CMI) system can exist either additional to, or in replacement of, existing welfare payment structures. Of course, adding a CMI to existing payments merely adds complexity in administration and interpretation to the current income support system. Our intention, rather, would be to explore how one might design a CMI system to replace current payment structures, in order to provide approximately equivalent levels of financial support to that which is provided under the current post-ANTS 2000 system.²

3.2 a basic conditional minimum income, and income supplements

We experiment in this paper with a CMI system comprising a basic adult credit to guarantee a floor in the level of income support provided to each person living in a multiple person household. In addition, a series of minimum income supplements are added to the basic per-capita credit for those with specific economic needs. In identifying the range of credit supplements, due regard must be paid to levels of financial support for different needs groups under the current post-ANTS regime. Potentially, one could add some or all of the following supplements to the basic credit:

- **A “living alone” supplement;** (the basic per-capita CMI being reserved for situations where more than one adult live together);
- **A participation supplement;** (requiring greater activity/mutual obligation, but raising the level of CMI at least to the current level of provision of NewStart);
- **An employment-conditional supplement;** (conditional on the level of earnings, or the level of employment);
- **A dependent child supplement;** (either a single supplement, or a series of supplements related to the age and number of children);
- **Childcare supplements;** (conditional on the purchase of formal, registered childcare, up to some maximum);

² Appendix A offers a more detailed consideration of issues pertinent to the design of an income support system.

- **A housing supplement;** (related to the level of rent or housing costs, again up to some maximum);
- **A disability supplement;** (possibly set at a level associated with a certain type of disability).
- **A widow(er)s supplement;**

We set our CMI to be withdrawn at a single taper beyond a unified income threshold, thereby harmonising the income support withdrawal rate across family types. Figure 2 illustrates the potential architecture of a CMI system of income support., and Figure 3 illustrates how CMI and EC might fit into a modular arrangement of income support comprising an earnings-contingent payment and a family-based payment.. This modularity provides one of the motivations behind any move to CMI, offering a greater coherency and a separation of income support instruments with which to target specific policy objectives.

Figure 2. Possible structure for a Conditional Minimum Income (CMI) system

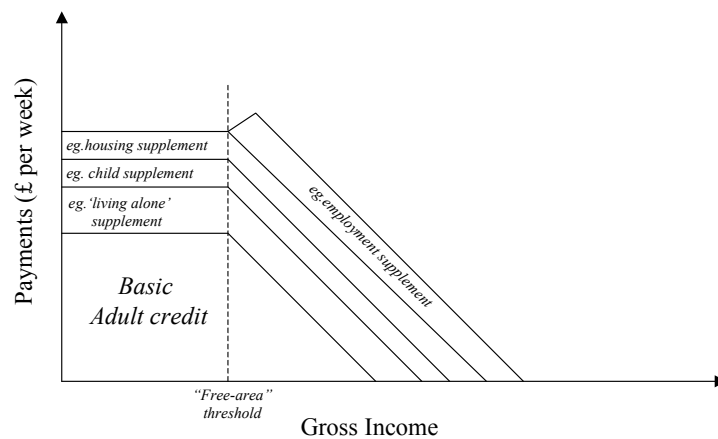
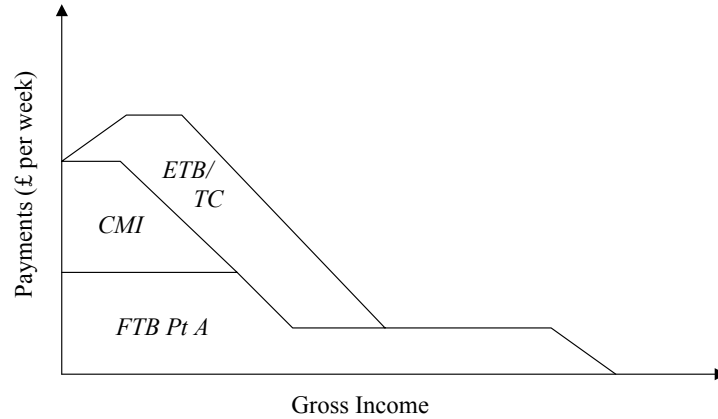


Figure 3. Potential modularity of income support in Australia



3.3 *integrating Earnings-conditional Credits with a Conditional Minimum Income*

In October 1998, a group of five economists wrote an open letter to the Prime Minister of Australia with a range of policy ideas with which to target unemployment and promote work incentives. One of the ideas in this letter was the introduction of an Earnings-conditional Credit (EC) with which to supplement the wages of low-income working households. The design of the proposed EC borrows much from experiences elsewhere (principally the United Kingdom and the United States) on the use of employment-conditional subsidies and tax credits.

The idea was considered by the *Reference Group on Welfare Reform*. The McClure Interim report referred specifically to the pros and cons of employment conditional benefits:

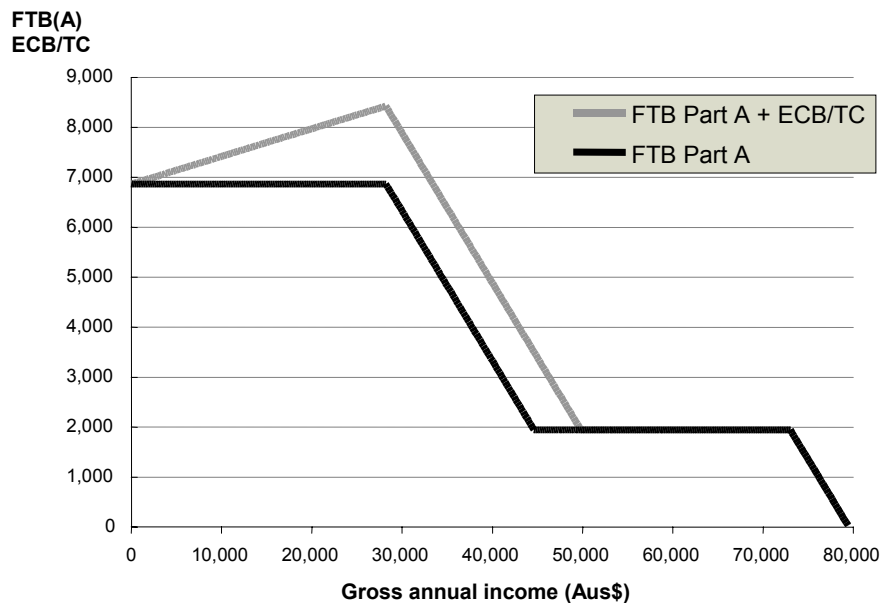
“There is considerable research available on the potential impact of schemes such as the EITC. Firstly, they can make a significant difference in encouraging income support recipients into work. This is especially the case for lone parents in the United States. Their impact on couples with children is less positive. Although they induce some people to move from income support to work, they also reduce workforce participation by some second earners in a family as assistance is withdrawn at higher income levels. In the Australian context, it would be critical to integrate any such tax credit with the new Family Tax Benefit to ensure that the expected positive work incentive effects flowing from the ANTS package were not compromised.”

Reference Group on Welfare Reform 2000a, p44

Following the publication of the Five Economists Plan, Lambert (2000) proposed an *Earnings Credit* (EC) which could be integrated with the post-ANTS tax system, and which could deliver specific support to low-wage working families. The suggested structure of the EC is very similar to the current Earned Income Tax Credit system in the United States, with a phase-in range over which the credit increases up to a maximum level of entitlement, and a limit beyond which the credit is tapered away.

There is potential to integrate an Earnings Credit (EC) system with the CMI structure laid out earlier. One option would be to use the specific Keating-Lambert proposal as a first illustration, linking the parameters of an EC closely to Family Tax Benefit (Part A).³ The income limits — at which an EC recipient would qualify for the maximum credit and at which the EC would be tapered away — are both defined relative to the existing structure of Family Tax Benefit (Part A), as shown in Figure 2. The idea here is to integrate the EC with the existing tax and transfer system without creating additional complexities in the pattern of marginal effective tax rates faced by low-income households.

Figure 2. Family Tax Benefit Part A and an Employment-conditional credit



Of course, it is not necessary to restrict attention to an EC tied to the structure of FTB (Part A). Indeed, an EC restricted in this way creates its own problems; any reform to FTB Part A would potentially affect the levels of payment of the EC; employment

³ The effects of the Lambert proposal were explored in some detail in Duncan (2002).

incentives delivered through the EC would be contaminated; the coherency and separation of policy instruments with which to deliver on specific policy objectives would be compromised.

There is nothing to prevent an EC from ultimately being parameterised independently of other elements of the Australian tax and transfer system, as is the case for the US EITC or the proposed ETC in the United Kingdom. The structure could be maintained (and amended) without affecting other payments. However, by doing so, there is a danger that the EC would increase the complexity of the Australian tax and transfer system rather than simplifying it. For this reason, there may be some rationale for further simplification of the existing income support system in conjunction with the introduction of an EC system.

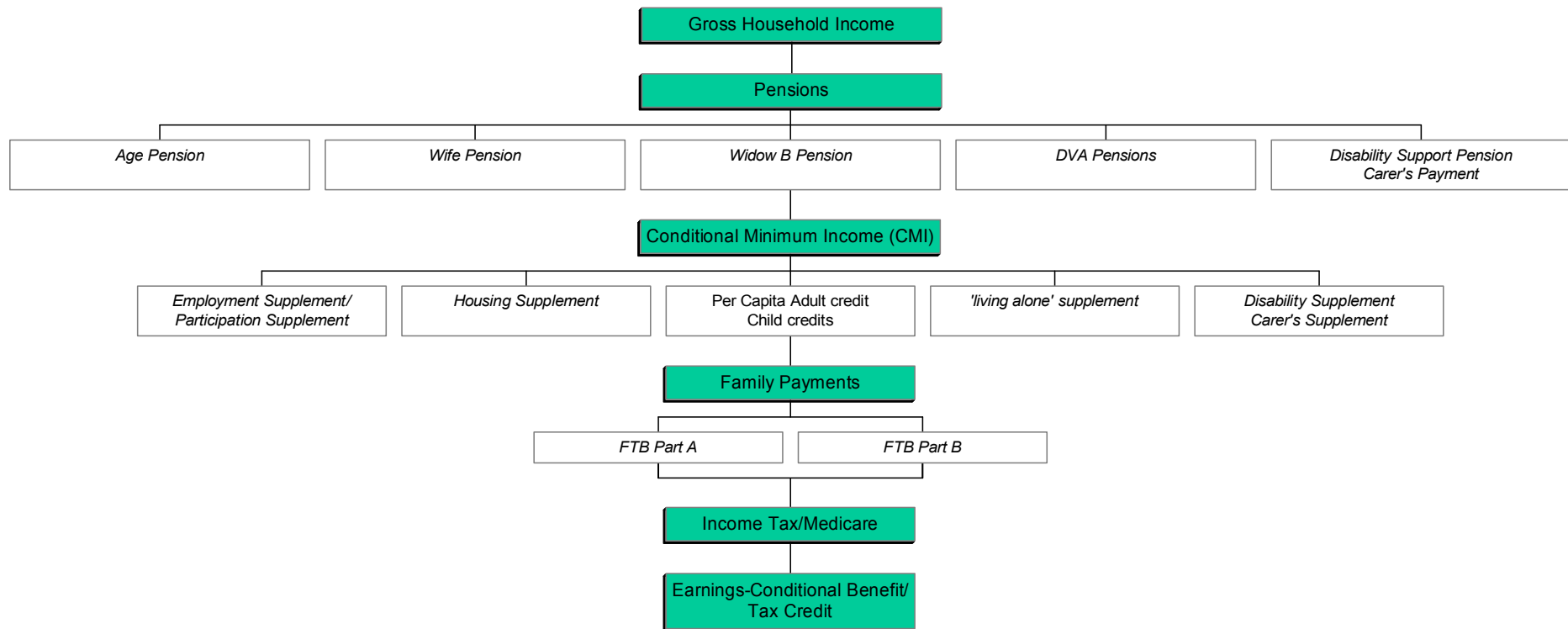
Figure 5 shows how both the CMI and the EC could be integrated into the wider system of tax, pensions and family payments in Australia. This can be compared with the earlier Figure 1, which shows the current configuration.

3.4 parameterising a Conditional Minimum Income system

One of the principal goals in re-designing the post-ANTS system of welfare support is to achieve a more simplified and transparent structure than is currently the case. And to achieve this first objective, we experiment with the parameterisation of a modular income support system where the delivery of financial support to low-income families approximates the current payment structures as closely as possible over as large a range of households as possible. Of course, a simplification exercise of this sort is bound to generate differences. The modular conditional minimum income (CMI) system outlined earlier has a simpler pattern of entitlement than some allowances and pensions in the current system. For example, the CMI has a single withdrawal taper which would be levied on incomes in excess of a harmonised threshold (or free area). This contrasts, for example, with the double taper rate structure of Newstart or Partnered Parenting Payment.

The CMI also treats supplements to the basic payment differently for specific client groups and identified needs. Disablement credits, dependent child supplements, widow supplements and living-alone supplements are added to the basic adult credit, and the

Figure 5. Organisation of a combined Conditional Minimum Income (CMI) / Earnings-conditional credit (EC) system



combined payment is then withdrawn at a single rate. Hence, recipients of these additional credits will see their payments continuing beyond the level of income at which the basic credit would have been withdrawn in its entirety.

So a move to a CMI system is clearly going to alter levels of income support relative to the current regime. Indeed, a modified CMI system under a constraint of revenue neutrality is guaranteed to generate losers as well as winners. The balance of winners and losers when moving to a CMI will therefore depend on the level of additional resources one is willing to devote to the new system.

3.5 Conditional Minimum Income parameterisation: an automated procedure

As detailed earlier in this paper, there are many dimensions to the evaluation of tax and welfare policy reform. Distributional targets, equity concerns, reductions in ‘churning’, optimisation of employment incentives, poverty alleviation, elimination of high EMTRs, specific targets for the cost to government are just some of the outcomes against which tax policy reform options might be judged. However, specific policies tend to be designed in the main on a ‘trial and error’ basis. We present in this paper a series of specific parameterisations of a CMI system to replace current structures of income support. In doing so, we introduce a new innovation in the use of tax microsimulation methods to inform tax and welfare policy design. Our new technique makes it possible to set the rates and payments for new structures of taxation and income support in a way which automatically satisfies pre-designated policy objectives.

The specific process essentially involves ‘fitting’ the parameters of the CMI to a criterion function that has been chosen to reflect a specific targeted policy objective (or series of objectives). It might be, for example, that the basic CMI credit and supplements are required to be set at a level that minimise the proportion of losers among current income support recipients, subject to a constraint of revenue neutrality. Or alternatively, the parameters of the CMI could be ‘fitted’ in a way that most closely approximates current levels of income support.

The automated process for CMI parameterisation would optimise an appropriate criterion function, the value of which depends on the current distribution of income unit net income under the current system (denoted T_0) and the CMI system (denoted T_1). To illustrate the idea, let $I(y; X, T)$ represent the income unit net income for a family with gross income y and demographic characteristics X , under tax system T . Then, the

absolute difference in incomes under the new CMI system, relative to the existing post-ANTS system, may be written as $I(y; X, T_1) - I(y; X, T_0)$. The criterion function $L(T_1)$ is built by integrating these income differences over the distribution of gross household incomes $f(y)$, weighting the differences according to some function $w(y, X)$ that depends on family characteristics and/or income level:

$$L(T_1) = \int_y w(y, X) \cdot [I(y; X, T_1) - I(y; X, T_0)] \cdot f(y) dy$$

The weighting function is used to either promote or downweight the importance of income differences in the criterion function. One might, for example set weights to be a positive function of family size, and an inverse function of gross household income. This would increase the importance of income differences for large families on low incomes, relative to single high earners. Of course, there is an element of subjectivity in the definition of $w(y, X)$ that should be recognised when interpreting the ‘fitted’ tax and welfare system T_1 . Nevertheless, the need for a weighting function of some form is uncontroversial.

The current policy debate on income support in Australia provides a topical illustration of the potential importance of this policy design tool. Under the simplest CMI parameterisation, we attempt to set levels of the basic credit, the free area threshold, the withdrawal taper, and the additional credits in a way which minimises the income differences, aggregated over the population of income support recipients and weighted towards low income households, between current levels of delivery of income support, and the levels that would pertain under the hypothetical CMI system. Subsequent parameterisations modify the set of payment rates to achieve approximate revenue neutrality, and additionally add an earnings-contingent credit to offset any negative work incentive consequences of the move to a CMI.

4 The Method of Analysis, and Measurement of Outcomes

We evaluate the effects of moving to a conditional minimum income system using the Melbourne Institute Tax and Transfer Simulator (MITTS).⁴ The MITTS model is a supply side partial equilibrium microeconomic simulation model. It is based on data on incomes and hours of work for individuals and households collected by ABS in its Income Distribution Survey. The 1997 survey used in this study has about 7000

households. Each household has a population weight so that the model provides outcomes for aggregate incomes, tax revenue, social security payments, and so forth which match economy aggregates. We take the ANTS 2000 tax and social security system as the reference point against which to model the effects of a series of specific CMI and combined CMI/Earnings credit options.

For the assessment we make at least two important simplifying assumptions. First, measures of income used in assessing income tax and in means testing the entitlement to social security payments are assumed to be the same, even though there are important differences in practice. Second, the assessment is made using an annual accounting period, as is current practice for income tax but at variance with reality for some social security allowances.

MITTS-A provides a static snapshot picture of the effects of reform options in the sense that changes in taxation and social security payments are assumed to have no effects on wages, hours of work and market incomes. The base case scenario calculates for each individual and household their income tax payable and receipt of social security payments to obtain net disposable income. For the reform option, using the same market income, net disposable income is recomputed for the transfer system reform option. A comparison of the two scenarios gives the effects of the reform option on changes in government receipts and outlays, the households whose net disposable income increases and decreases and by how much, changes in the numbers churning, and the distribution of changes in EMTR and incentives.

MITTS-B adds a labour supply behavioural response, in that it allows for individuals to adjust their labour supply decision to changes in the budget constraint they face as a result of the reform change to the tax and social security systems. But, the assessment remains partial equilibrium because wages (both market wages for those working and imputed opportunity wages for those not working) are held fixed; or an infinite elasticity of labour demand at the current wage is assumed. Individuals choose hours of work to maximise an econometrically estimate utility function (which is a quadratic function of market income and leisure with parameters varying with household demographics, education and other variables) subject to their budget constraint (which includes

⁴ For more detail on MITTS see Creedy, Duncan, Harris and Scutella,(2002).

information on the given wage, income taxation and eligibility for social security payments).⁵

While MITTS-B does not provide estimated labour supply elasticities as such (because of non-linearities at the individual level and because of aggregation problems (Creedy and Duncan, 2001)), the responsiveness of different individuals to changes in their net wage or EMTR varies widely. Those more likely to change hours of work or to change decisions on entry to or exit from the workforce include: females relative to males, low educated relative to the high educated, and sole parents relative to other household types. Then, some individuals respond to the reform option by changing their decision to work or not and others working may change their hours of work. These changes affect market income and, in turn, net disposable incomes, and they also result in changes in government receipts and outlays.

We use a number of outcome measures to evaluate the effects of specific CMI policy options. These measures are informed in large part by the set of policy objectives that the CMI and EC systems are designed to address. Our focus will be on measuring:

1. **income distribution.** the net effect on the distribution of household incomes (in total, separated according to demographic type, income decile & employment status);
2. **employment patterns.** the effects on employment (in terms of labour market participation, average hours choices among the employed, and on the pattern of joblessness (eg. the incidence of jobless households), single earner and dual earner households) in total, and split by demographic type;
3. **welfare dependence.** the effects on the proportion of income units that rely heavily on income support for their livelihood;
4. **government costs.** the net cost to the government's budget of each policy reform, both in total, and split separated according to the costs of each transfer payment. These net costs will further be adjusted to take account of any flowback to the government following simulated employment responses to each policy reform;

⁵ Appendix B provides a brief description of the methodology underlying the behavioural microsimulation component of MITTS. For further details, see Creedy and Duncan (1999).

5. **marginal effective tax rate.** the effects on the distribution of marginal effective tax rates (METRs), average tax rates (ATRs) and replacement rates (RRs), in total, and split by income decile and demographic type;
6. **“churning”.** the effects on the proportion of income support recipients who also make income tax payments (net of tax rebates), in total, & split by demographic type.

5 Conditional Minimum Incomes: an evaluation

We model a range of CMI systems of this kind using the Melbourne Institute Tax and Transfer Simulator (MITTS). Specific CMI parameterisations are presented in Table 2. The first parameterisation is set to be approximately revenue neutral, fixing the unified withdrawal taper at 70 per cent and the free area threshold at \$62 per fortnight (the higher Newstart taper rate and threshold under the ANTS system of July 2000. Adult credits and supplements are then set at rates which minimise the average income differences relative to the July 2000 ANTS system. This first parameterisation is essentially *ad hoc* in nature. A second parameterisation uses the automated procedure described earlier to set the adults credit, supplements, taper rate and free area threshold to minimise a weighted sum of income differences over the income support client population. Weights are set at the inverse of income unit net income level under ANTS, in order to uprate the importance of low income households in the setting of CMI parameters. For each of these two parameterisations, we additionally include an earnings-conditional benefit system of the form laid out in Keating and Lambert (2000) and modelled in Duncan (2003). Specifically, a \$30 earnings credit is phased in at a rate which raises the credit from \$0 at zero earned income to \$30 at a level of earned income at the point at which maximum FTB Part A starts to be phased out. The results of these simulations are shown in Tables 3 through to Table 6.

The first CMI reform presented in Table 3 was calibrated to be broadly revenue neutral, and neutral in the average income gains across major household types. However, this CMI system, when introduced in isolation, tends to create predominantly negative employment responses. The added generosity of the aggregated CMI payment, together with an absence of any employment conditionality of CMI support, combines to generate a negative income effect which is most pronounced among single parent households. That is not to say that all CMI parameterisations produce uniformly negative responses. Table 4 presents the results from a CMI system ‘fitted’ to the distribution of household

Table 10. Reform Options for a Conditional Minimum Income system

A. Aggregate Revenue neutral

- CMI assessed against family income
- CMI taper rate set at 70 per cent
- CMI unified threshold set at \$62 per fortnight
- Credit structure (per fortnight):
 - basic adult credit \$310 (per capita, based on multiple adult household)
 - young person's credit \$150 (aged 17 and under, living with parents)
 - living alone supplement \$70
 - dependent child supplement \$55
 - widow's supplement \$50
 - disablement supplement \$70

B. Minimum distance CMI parameterisation

- CMI assessed against family income
- CMI taper rate estimated at 49 per cent
- CMI unified threshold estimated at \$50 per fortnight
- Estimated credit structure (per fortnight):
 - basic adult credit \$267.90 (per capita, based on multiple adult household)
 - young person's credit \$239 (aged 17 and under, living with parents)
 - living alone supplement \$64.80
 - dependent child supplement \$74.80
 - widow's supplement \$11
 - disablement supplement \$54

C. Aggregate revenue neutral, with earnings-conditional credit (EC)

- CMI structure as for A
- EC structure as in Duncan (2003)
- EC set at \$30 per adult, phased in to reach maximum at FTB Pt A free-area threshold

D. Minimum distance CMI parameterisation, with earnings-conditional credit (EC)

- CMI structure as for B
- EC structure as in Duncan (2003)
- EC set at \$30 per adult, phased in to reach maximum at FTB Pt A free-area threshold

Table 3. Summary of Microsimulation Effects - Conditional Minimum Income (70% taper, \$62 threshold)

1. Winners and Losers

Family type:	Percentage of winners/losers			av. change
	losers	same	winner	
couple	10	84	7	-
couple & dep	11	81	8	+0.2
single	6	84	10	+0.2
single & dep	26	24	50	-
Overall	9	81	10	+0.1

youngest	Percentage of winners/losers			av. change
	losers	same	winner	
no	8	84	8	+0.1
0-5 yrs	14	70	17	+1.0
6-11 yrs	13	75	12	+0.3
12+ yrs	14	78	8	-2.7
Overall	9	81	10	+0.1

3. Government Costs

Change in tax revenue: **+\$0.0bn**
 Change in payment/rebate costs: **+\$0.07bn**
 Net Cost to Government: **+\$0.07bn**

Tax or payment	Main Revenues & Expenditures numbers (thou)		
	base:	change	base: change
Income Tax	70480	+18	11518
Medicare Levy	5031	-15	7185
Tax Rebates	4608	+100	6200
FTP/FTB	10268	+51	1984
Allowances	17069	-81	2753
Pensions	23970	-	2885
Rent Allowance	1844	+3	1342

5. Distributional Effects/Income Changes

Overall 90-10 ratio: *before* 3.67 *after* 3.67 *change* +0.00

Decile:	Percentage of winners/losers			av. change
	losers	same	winner	
Bottom	4	67	29	+8.9
2 nd	13	62	26	+4.8
3 rd	10	73	17	+2.8
4 th	26	58	16	-4.7
5 th	25	68	7	-7.3
6 th	16	82	3	-4.8
7 th	3	96	1	-0.8
8 th	1	99	0	-0.1
9 th	-	100	-	+0.0
Top	-	100	-	+0.0
Overall	9	81	10	+0.1

2. Separation (“churning”)

Family type:	Percentage paying taxes & receiving payments under base system			
	pension, no tax	pension AND tax	no pension, no tax	no pension AND tax
couple	35.1	10.2	7.1	47.6
couple & dep	13.1	3.9	16.3	66.7
single	38.0	10.2	-	51.7
single & dep	57.8	20.9	-	21.3
Overall	30.7	8.4	10.2	50.7

Family type:	CHANGE in percentage paying taxes & receiving payments under reform			
	pension, no tax	pension AND tax	no pension, no tax	no pension AND tax
couple	0.3	0.6	-0.2	-0.7
couple & dep	-	1.3	0.2	-1.4
single	0.1	-1.2	-	1.0
single & dep	-5.3	-4.7	-	10.0
Overall	-0.1	-	-	0.1

4. Marginal Effective Tax Rates

proportion of people with *increased* EMTRs: **12.8%**
 proportion of people with *decreased* EMTRs: **4.1%**

family type:	Percentage with changed			av. change
	lower	same	higher	
couple	5	85	10	+3.3
couple & dep	5	82	13	+7.9
single	7	85	8	+4.7
single & dep	11	25	64	+36.4
youngest				
no	4	86	10	+3.9
0-5 yrs	7	67	28	+12.9
6-11 yrs	5	75	20	+17.9
12+ yrs	2	85	13	+5.9
Overall	4	83	13	+5.2

6. Employment Effects

Percentage of persons changing choices of hours and participation:

employment response (%):	married				single			
	men	women	men	women	men	women	men	women
non-work to work	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1
work to non-work	0.5	0.2	1.2	1.3	1.3	1.3	14.9	14.9
working more	0.1	-	-	-	-	-	1.0	1.0
working less	-	-	-	-	-	-	-	-
average hours diff.	-0.2	-	-0.4	-0.5	-0.5	-0.5	-3.6	-3.6

Net Cost to Government:

Without employment effects **+\$0.07bn**
With employment effects **+\$2.58bn**

Change in proportions (among couples) of:

Workless households **+0.3%**
Single earner households **+0.2%**
Two-earner households **-0.5%**

Table 4. Summary of Microsimulation Effects - Conditional Minimum Income (minimum distance parameterisation)

1. Winners and Losers

Family type:	Percentage of winners/losers			av. change
	losers	same	winner	
couple	13	82	6	-1.3
couple & dep	13	78	9	-0.8
single	11	83	6	0.0
single & dep	27	24	49	-5.6
Overall	13	79	9	-1.0

youngest	Percentage of winners/losers			av. change
	losers	same	winner	
no	12	83	6	-0.8
0-5 yrs	16	67	17	-0.9
6-11 yrs	14	73	13	-1.6
12+ yrs	14	74	12	-2.4
Overall	13	79	9	-1.0

2. Separation (“churning”)

Family type:	Percentage paying taxes & receiving payments under base system			
	pension, no tax	pension AND tax	no pension, no tax	no pension, no tax
couple	35.1	10.2	7.1	47.6
couple & dep	13.1	3.9	16.3	66.7
single	38	10.2	-	51.7
single & dep	57.8	20.9	-	21.3
Overall	30.7	8.4	10.2	50.7

Family type:	CHANGE in percentage paying taxes & receiving payments under reform			
	pension, no tax	pension AND tax	no pension, no tax	no pension, no tax
couple	+1.4	+2.4	-1.4	-2.5
couple & dep	+2.3	+4.8	-2.2	-4.8
single	-	+1.2	-	-1.2
single & dep	-5.3	+0.1	-	+5.2
Overall	+0.9	+2.5	-1.1	-2.3

3. Government Costs

Change in tax revenue: **-\$0.05bn**
 Change in payment/rebate costs: **-\$0.44bn**
 Net Cost to Government: **-\$0.39bn**

Tax or payment	Main Revenues & Expenditures Cost (\$m)			numbers (thou)	change
	base:	change	base:		
Income Tax	70480	-56	11518	-50	
Medicare Levy	5031	+7	7185	+18	
Tax Rebates	4608	-142	6200	-70	
FTP/FTB	10268	+87	1984	-	
Allowances	17069	-435	2753	+488	
Pensions	23970	-	2885	-	
Rent Allowance	1844	+106	1342	+77	

4. Marginal Effective Tax Rates

proportion of people with *increased* EMTRs: **11.2%**
 proportion of people with *decreased* EMTRs: **7.6%**

family type:	Percentage with changed			av. change
	lower	same	higher	
couple	8	82	10	+1.3
couple & dep	6	78	16	+8.4
single	7	83	10	+3.3
single & dep	17	24	59	+33.0
youngest				
no	8	84	8	+1.9
0-5 yrs	9	64	27	+10.5
6-11 yrs	7	73	20	+5.8
12+ yrs	4	81	15	+4.5
Overall	7	80	13	+3.5

5. Distributional Effects/Income Changes

Overall 90-10 ratio: *before* 3.67 *after* 3.67 *change* 0.00

Decile:	Percentage of winners/losers			av. change
	losers	same	winner	
Bottom	22	67	11	3.4
2 nd	23	60	18	-0.1
3 rd	16	72	12	-2.4
4 th	29	53	18	-4.7
5 th	22	63	15	-4.5
6 th	12	76	12	-1.8
7 th	2	95	3	-0.1
8 th	0	99	1	0.0
9 th	-	100	-	0.0
Top	-	100	-	0.0
Overall	13	78	9	-1.0

6. Employment Effects

employment response (%)	Percentage of persons changing choices of hours and participation:					
	married men	married women	single men	single women	single parents	
non-work to work	0.6	0.4	0.4	0.3	0.1	
work to non-work	-	-	-	-	-	9.2
working more	0.1	-	-	-	-	1.4
working less	0.1	-	0.1	0.2	0.1	
average hours diff.	0.2	0.1	0.1	0.1	0.1	-1.9

Net Cost to Government:

Without employment effects **-\$0.39bn**
With employment effects **-\$0.71bn**

Change in proportions (among couples) of:

Workless households **-0.9%**
Single earner households **+0.8%**
Two-earner households **+0.1%**

Table 5. Summary of Microsimulation Effects - Conditional Minimum Income (70% taper, \$62 threshold, \$30 Earnings Credit)

1. Winners and Losers

Family type:	Percentage of winners/losers			av. change
	losers	same	winner	
couple	8	77	15	2.2
couple & dep	8	58	34	7.7
single	5	57	38	5.9
single & dep	23	14	63	6.1
Overall	8	60	32	5.4

youngest	Percentage of winners/losers			av. change
	losers	same	winner	
no	7	66	27	4.0
0-5 yrs	11	42	47	9.9
6-11 yrs	11	48	42	9.0
12+ yrs	11	50	39	4.9
Overall	8	60	32	5.4

3. Government Costs

Change in tax revenue: **+\$0.00bn**
 Change in payment/rebate costs: **+\$2.60bn**
 Net Cost to Government: **+\$2.60bn**

Tax or payment	Main Revenues & Expenditures numbers (thou)		
	base:	change	base: change
Income Tax	70480	+18	11518
Medicare Levy	5031	-15	7185
Tax Rebates	4608	+100	6200
FTP/FTB	10268	+2678	1984
Allowances	17069	-21	2753
Pensions	23970	-	2885
Rent Allowance	1844	+3	1342

5. Distributional Effects/Income Changes

Overall 90-10 ratio: *before* 3.67 *after* 3.65 *change* -0.02

Decile:	Percentage of winners/losers			av. change
	losers	same	winner	
Bottom	4	61	35	9.3
2 nd	10	49	41	7.7
3 rd	9	50	41	8.3
4 th	23	20	57	6.7
5 th	20	46	34	-0.6
6 th	12	50	38	6.1
7 th	2	62	36	8.7
8 th	0	82	18	3.6
9 th	-	93	7	1.0
Top	-	89	11	1.5
Overall	8	60	32	5.4

2. Separation (“churning”)

Family type:	Percentage paying taxes & receiving payments under base system			
	pension, no tax	pension AND tax	no pension, no tax	no pension AND tax
couple	35.1	10.2	7.1	47.6
couple & dep	13.1	3.9	16.3	66.7
single	38	10.2	-	51.7
single & dep	57.8	20.9	-	21.3
Overall	30.7	8.4	10.2	50.7

Family type:	CHANGE in percentage paying taxes & receiving payments under reform			
	pension, no tax	pension AND tax	no pension, no tax	no pension AND tax
couple	+0.3	+0.6	-0.2	-0.7
couple & dep	-	+1.3	+0.2	-1.4
single	+0.1	-1.2	-	+1.0
single & dep	-5.3	-4.7	-	+10.0
Overall	-0.1	-	-	+0.1

4. Marginal Effective Tax Rates

proportion of people with *increased* EMTRs: **16.5%**
 proportion of people with *decreased* EMTRs: **47.7%**

family type:	Percentage with changed			av. change
	lower	same	higher	
couple	42	48	10	+1.3
couple & dep	26	55	19	+8.4
single	59	25	16	+3.3
single & dep	25	16	59	+33.0
youngest				
no	55	32	13	+2.1
0-5 yrs	19	48	33	+12.2
6-11 yrs	33	42	25	+16.7
12+ yrs	47	37	16	+3.9
Overall	48	35	17	+4.6

6. Employment Effects

employment response (%):	Percentage of persons changing choices of hours and participation:					
	married men	married women	single men	single women	single parents	
non-work to work	0.1	0.2	0.5	0.4	0.3	
work to non-work	0.3	0.4	0.8	0.8	8.9	
working more	0.1	-	-	0.1	1.4	
working less	0.2	0.1	0.4	0.7	0.4	
average hours diff.	-0.1	-0.1	-0.2	-0.3	-2.2	

Net Cost to Government:

Without employment effects **+\$2.60bn**
With employment effects **+\$4.11bn**

Change in proportions (among couples) of:

Workless households **+0.2%**
Single earner households **+0.4%**
Two-earner households **-0.6%**

Table 6. Summary of Microsimulation Effects – Conditional Minimum Income (min.distance parameters, \$30 Earnings Credit)

1. Winners and Losers

Family type:	Percentage of winners/losers			av. change
	losers	same	winner	
couple	12	77	12	0.8
couple & dep	11	57	32	6.7
single	11	57	33	5.7
single & dep	24	14	62	0.4
Overall	12	60	28	4.3

youngest	Percentage of winners/losers			av. change
	losers	same	winner	
no	11	66	23	3.0
0-5 yrs	15	42	43	8.0
6-11 yrs	12	48	40	7.2
12+ yrs	13	50	38	5.1
Overall	12	60	28	4.3

3. Government Costs

Change in tax revenue: **-\$0.05bn**
 Change in payment/rebate costs: **+\$2.18bn**
 Net Cost to Government: **+\$2.23bn**

Tax or payment	Main Revenues & Expenditures Cost (\$m)		base: change	base: change
	base:	change		
Income Tax	70480	-56	11518	-50
Medicare Levy	5031	7	7185	18
Tax Rebates	4608	-142	6200	-70
FTP/FTB	10268	2714	1984	1985
Allowances	17069	-435	2753	488
Pensions	23970	-	2885	-
Rent Allowance	1844	106	1342	77

5. Distributional Effects/Income Changes

Overall 90-10 ratio: *before* 3.67 *after* 3.67 *change* +0.00

Decile:	Percentage of winners/losers			av. change
	losers	same	winner	
Bottom	22	61	16	3.9
2 nd	22	48	30	2.7
3 rd	16	50	35	3.1
4 th	26	20	54	6.7
5 th	18	45	37	2.3
6 th	10	49	41	9.1
7 th	1	61	37	9.4
8 th	0	82	18	3.8
9 th	-	93	7	1.0
Top	-	89	11	1.5
Overall	12	60	28	4.3

2. Separation (“churning”)

Family type:	Percentage paying taxes & receiving payments under base system			
	pension, no tax	pension AND tax	no pension, no tax	no pension, no tax
couple	1.4	2.4	-1.4	-2.5
couple & dep	2.3	4.8	-2.2	-4.8
single	0.0	1.2	-	-1.2
single & dep	-5.3	0.1	-	5.2
Overall	0.9	2.5	-1.1	-2.3

Family type:	CHANGE in percentage paying taxes & receiving payments under reform			
	pension, no tax	pension AND tax	no pension, no tax	no pension, no tax
couple	+0.3	+0.6	-0.2	-0.7
couple & dep	-	+1.3	+0.2	-1.4
single	+0.1	-1.2	-	+1.0
single & dep	-5.3	-4.7	-	+10.0
Overall	-0.1	-	-	+0.1

4. Marginal Effective Tax Rates

proportion of people with *increased* EMTRs: **16.8%**
 proportion of people with *decreased* EMTRs: **47.9%**

family type:	Percentage with changed			av. change
	lower	same	higher	
couple	42	48	10	+1.3
couple & dep	26	55	19	+8.4
single	59	25	16	+3.3
single & dep	25	16	59	+33.0
youngest				
no	54	32	14	+0.3
0-5 yrs	21	47	32	+9.9
6-11 yrs	34	41	25	+5.6
12+ yrs	45	37	18	+2.6
Overall	47	35	18	+2.0

6. Employment Effects

Percentage of persons changing choices of hours and participation:

employment response (%):	married				single			
	men	women	men	women	men	women	men	women
non-work to work	0.8	0.5	1.0	0.8	0.8	0.5	0.5	0.5
work to non-work	0.1	0.3	-	-	-	6.2	-	6.2
working more	0.1	-	-	-	-	-	-	2.2
working less	0.3	0.1	0.4	0.8	0.8	0.5	0.5	0.5
average hours diff.	0.2	-	0.3	0.2	0.2	-0.7	-0.7	-0.7

Net Cost to Government:
Without employment effects **+\$2.23bn**
With employment effects **+\$1.54bn**

Change in proportions (among couples) of:
Workless households **+0.2%**
Single earner households **+0.4%**
Two-earner households **-0.6%**

incomes over the full population of income support recipients. With a lower taper rate, a lower free area threshold, and greater heterogeneity in supplements (see Table 2), the employment effects of the second CMI parameterisation are predominantly positive for family types other than single parent households (whose responses are still negative, but less so than for the first CMI). When an earnings-conditional payment of up to \$30 is added to the CMI, these positive responses are further reinforced, and the negative effects on single parent households mitigated to some degree. The overall message is that a CMI combined with an earnings-conditional credit (Table 6) provides a positive stimulus to employment incentives, with distributional effects spread pretty evenly over the lower six deciles, at a relatively modest cost of \$2.2bn ignoring behavioural responses, and \$1.5bn when the positive employment responses are accounted for.

6 Summary and conclusions

In this paper we experiment with the idea of a conditional minimum income (CMI) support system to replace the current raft of allowance and pensions payments for families of working age. In doing so, our main motivation is to establish whether such a system can fulfil the objectives of simplification and rationalisation relative to the current system of social security payments, whilst at the same time delivering broadly equivalent levels of income support. In addition, we examine the potential for integrating an employment-conditional benefit or tax credit (EC) into the CMI, to provide an explicit instrument with which to promote employment incentives. Our idea is to explore the concept of a CMI as a route to the simplification of income support, and the extent to which such a scheme might be integrated into the current tax and transfer system in Australia.

Preliminary results suggest that a CMI system offers a viable alternative to the current provision of income support to working age families offered through the allowance and working age pensions systems. Simplification of this sort inevitably generates a non-negligible pattern of winners and losers relative to ANTS, but the proportion of income losses can naturally be altered through an expansion in the level of resource devoted to restructuring under a CMI. Certain parameterisations of CMI, particularly when combined with an earnings credit, were modelled to generate substantial positive employment incentives for many groups of families. Single parent households were the

only group for whom negative employment effects were apparent. This result suggests that a combined CMI/EC system might require an explicit additional provision of either resources or eligibility rules to single parent households to eliminate these negative incentives.

Our results illustrate the potential for moving in the long run towards a conditional minimum income system, incorporating an employment-conditional tax credit as one of the supplementary credit elements. It is clear, however, that to do so without a significant number of losers would be very costly unless it is phased in over a substantial period of time.

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Appendix A: Design Issues for Income Support Programmes

A1. basic conditions of entitlement

There are a number of aspects in the design of basic eligibility conditions for income support payments that need to be considered:

- **Limits to eligible family types.** To what extent should income support payments be limited according to demographic or economic type? Should eligibility depend on the presence and the number of children? For single parents? For carers, & those with disabilities?
- **Activity testing and mutual obligation.** What mutual obligation and activity requirements should be laid down as a condition of entitlement? And who should be exempted from such activity & mutual obligation requirements?
- **Income conditions.** What income should be taken into account when assessing entitlement to income support? What income should be disregarded? Should any income be disregarded? What income threshold and withdrawal tapers should be applied?
- **Time-limitation or tiered entitlements.** Should income support be time-limited, or tiered according to the length of time the recipient claims the support?
- **Supplements to basic income support entitlement.** To what extent should income support supplements be added to the basic income support payment? And for which demographic or economic type? Should eligibility depend on the presence and the number of children? For single parents? For carers, & those with disabilities?

A2. explicit employment conditions for income support entitlement

Income support payments can include eligibility conditions that explicitly relate to employment. In the UK, the Working Families' Tax Credit (WFTC) supports low-income households in which at least one adult works for an average of 16 hours per week or more, with a supplement for those working full-time (defined as 30 hours per week or more). In Canada, the recently piloted Self-Sufficiency program restricted payment to those working more than 30 hours per week. Most other equivalent income support

programmes base entitlement on earnings alone, as is the case for the current Australian system of income support payments, and the Earned Income Tax Credit (EITC) system in the United States.⁶

The desirability of an explicit hours condition is the subject of some debate. On the positive side, it can be argued that an hours-related eligibility condition improves the targeting of the benefit towards working households, and may therefore be more effective in promoting employment incentives. On the negative side, higher withdrawal rates are typically needed to pay for the greater generosity of hours-conditioned transfers. This might lead to labour market ‘inertia’: people have an incentive to work at or near the hours threshold, but little or no incentive to work much beyond.

A3. the period of assessment and payment

Benefit structures that are, on the surface, very similar can produce markedly different incentives if they have different payment and assessment periods.⁷ For example, entitlement to the Working Families’ Tax Credit (WFTC) in the United Kingdom is assessed over a period of between 7 weeks and 4 months (depending on the frequency of wage payments). Payments are then fixed for the following 26 weeks, regardless of any change in employment status. In the United States, on the other hand, the Earned Income Tax Credit (EITC) is assessed annually as part of the tax return, and paid lump-sum in arrears.

Different assessment and payment periods can lead to adjustments in labour market behaviour between assessments and, in the extreme, to abuse of the system. It is difficult to see how income support that is delivered annually and in arrears would have the same incentive effect as a structurally and monetarily equivalent benefit delivered more frequently throughout the year.

A4. the unit of assessment and payment

Most income support payments around the world are assessed at the level of the income-unit rather than at the level of the individual. This contrasts with the typical unit of assessment for income taxation, which typically operates at the level of the individual

⁶ The EITC includes three regions; a ‘phase-in’ region for which entitlement increases as earnings increases, a plateau where maximum entitlement is maintained, and a ‘phase-out’ region where the credit is withdrawn until exhausted. So, EITC entitlement depends on hours of work, but does not include a specific hours-related condition.

rather than the income unit.⁸ The choice of the unit of assessment is not innocuous. Consider a household where the man is in low-wage employment and in receipt of income support. When benefits are assessed at the level of the income unit, any increase in his partner's employment income will reduce the benefit payment to the household, thus acting as an employment disincentive to the secondary earner (in this case, the woman). On the other hand, if benefits are assessed at the level of the individual, then the positive employment incentive to the secondary earner is preserved. In general, choosing the household as the unit of assessment tends to favour single-earner households, whereas individual assessment is relatively beneficial for the incentives of two-earner households.⁹ Of course, individual assessment is much less effective at targeting financial help towards low-income households, and is therefore likely to be less desirable on equity grounds.

The unit of payment (that is, who nominally receives the income support payment) can also be important. Depending on the extent and pattern of income-sharing, a monetarily equivalent income support payment can have different effects when paid to income unit head, the principal child carer, the mother or the principal wage earner in the income unit.

A5. income assessment, and interaction with the tax system

The distributional and employment effects of income support payments can only be examined within the context of the whole tax and transfer system. Income support may look generous when viewed in isolation, but may be less so once interactions with other elements of the tax and benefit system are taken into account. This is usually because income from one transfer scheme is included in assessable income for another transfer programme. Such interactions can compromise the effectiveness of the income support payment both as a redistributive tool and as a vehicle for improving work incentives.¹⁰

⁷ Walker (2000) provides a clear exposition of this effect in the UK context.

⁸ This differentiation of unit of assessment can create some complexities when income support payments are delivered as tax credits through the tax code, rather than through a benefits agency.

⁹ Some work in the United Kingdom on the effects of altering units of assessment (see Duncan and Reed, 2000 and Duncan and Giles, 1996) lends empirical support for this conclusion.

¹⁰ One can reduce taper rates to WFTC to an extent which would give some entitlement to those working beyond the end of the Housing Benefit taper, but this is an expensive solution which does not address the underlying structural problem.

A6. method of payment

It has been argued that households endure a degree of *stigma* when receiving financial assistance through a benefit payment, to an extent which may discourage a claim for income support altogether. Tax credits deliver financial support through the tax code where possible, rather than through a benefits agency such as Centrelink. One argument in support of this administrative change is that, by doing so, one might positively affect the level and pattern of take-up among tax credit recipients and those eligible for the credit.¹¹

Appendix B: Simulating Employment Effects

B1. Modelling Preferences and Income Opportunities

To simulate the potential employment effects of reforms to the income support system in Australia requires detailed information on the demographic circumstances, and the potential labour market responses of a large and representative sample of Australian families. For the analysis in this paper, we use data from the Australian Income Distribution Survey (IDS) as the basis for our empirical evaluations. Among the sample of working families, we use the Melbourne Institute Tax and Transfer Simulator (MITTS) to calculate net incomes at any choice of hours of work. For non-workers additional information on their hourly wage rate is required to complete the net income calculations. These hourly wages are calculated from the predictions of a log hourly wage regression. This regression includes education, age, demographic and regional dummy variables and is estimated using the IDS data.

For each individual in our sample we now know the net income that would be associated with any choice of hours of work. The budget sets are non-convex. Hence conventional labour supply schedules cannot capture the incentive effects of the reforms, that involve potentially large changes in hours (say from zero to 20). Given the budget constraint facing each individual, the approach taken is to describe preferences over a *subset of discrete hours points*, reflecting the diverse incentives created by the benefit system. This will be described in more detail below. First we need a functional form for preferences. For each

lone parent in the sample, preferences are written in terms of hours of work, net income, a set of observable demographic factors and unknown preference parameters.

Suppose we let Y represent the net income available to a particular lone parent who works h hours, including his/her earnings. We represent the preference trade-off between hours and this net income using a quadratic utility function of the form:

$$U(h, Y) = \alpha_{yy}Y^2 + \alpha_{hh}h^2 + \alpha_{yh}Yh + \beta_y Y + \beta_h h$$

The α and β parameters are preference parameters. It is the β parameters that are allowed to depend on observable and unobservable factors according to:

$$\begin{aligned}\beta_y &= \beta_{y0} + \beta'_x \mathbf{x} + v_y \\ \beta_h &= \beta_{h0} + \beta'_x \mathbf{x} + v_h\end{aligned}$$

where the \mathbf{x} represent a vector of observable demographic and other household characteristics. The \mathbf{v} represent unobservable random terms. These unobservable terms are allowed to be correlated but are assumed to be jointly normally distributed.

B2. Modelling Discrete Choices over Hours

Hours of work choices are summarised by a finite set of points, e.g. $\{0, 10, 20, 30, 40\}$. To allow for preferences to vary quite widely over these hours choices, the utility level for each hours point is allowed to vary stochastically over individuals according to an extreme value distribution. This implies that, conditional on the \mathbf{v} terms, choices across discrete hours points can be written as a multinomial logit model:

$$\Pr[U_i \geq U_j | \text{all } j] = \frac{\exp U(H_i, Y_i; \alpha, \beta)}{\sum_k \exp U(H_k, Y_k; \alpha, \beta)}$$

where the subscript represents a discrete hours point.

¹¹ The choice to participate in a welfare programme forms part of an ongoing literature in the United

If there were no unobserved heterogeneity terms represented by the ν terms then these probabilities would be exactly analogous to the terms in a multinomial logit model. However, the additional unobservable variables imply that to calculate the probabilities we first have to integrate over the range of the ν variables. In doing this we effectively relax the otherwise strong distributional assumption. The integration is done by simulation methods assuming a multivariate normal distribution for the ν s in our estimation and simulation routine.

This simple multinomial discrete choice preference model is not sufficient to adequately describe the observed outcomes in the data, and for the simulations presented in this paper we additionally control for fixed costs of work in the model structure.

B3. Fixed Costs of Work

Fixed costs are the costs that an individual has to pay to get to work. For many families they are made up in part by childcare costs. However, there are additional costs, e.g. transport, which will vary by household type and by region. These are modelled as a once off weekly cost. In the model they are subtracted directly from net income for any choices that involve work.

They are modelled in a similar way to preferences, in terms of a set of observable factors and an unobservable heterogeneity variable

$$FC = \gamma' x + \omega$$

These terms will now enter the utility comparisons for each individual in their work – non-work choice. Consequently, they will also enter the probability terms described above. To calculate the probability of any observed hours point, the heterogeneity term ω will be integrated out in estimation along with the ν terms, and the parameters γ will add to the list of parameters, along with the α and β parameters, to be estimated.

States, Canada and the United Kingdom. See *inter alia* Blundell, Duncan, McCrae and Meghir (1999); Dickert, Houser and Scholtz (1995); Hoynes (1996); Keane and Moffitt (1997); Moffitt (1990).

B4. Estimation and simulation

Estimation is by maximum likelihood. For each observed family there is a probability term generated from the above model. This can be written in terms of the unobservable parameters to be estimated. Taking the whole data set together generates the sample likelihood. To evaluate the probabilities entering the likelihood, simulation methods have to be used to integrate out the unobservable terms described above. Consequently maximum likelihood estimation is by simulation.