TAXATION OF FAMILIES: INDIVIDUAL TAXATION VERSUS INCOME SPLITTING

Patricia Apps

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TAXATION OF FAMILIES: 
INDIVIDUAL TAXATION VERSUS 
INCOME SPLITTING*

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I Introduction

The taxation of families is arguably the central issue in the analysis of reforms to the tax system. Families form by far the largest group of taxpayers, they earn the greatest share of income, and direct and indirect taxes on their income are the main source of government revenue. While there is a vast literature on the subject of taxing families, much of it is characterised by confusion and inconsistencies with established principles of modern public finance. All too often the debate is motivated by an ideological commitment to reinforcing traditional gender roles within the family and to extending the gap between rich and poor. Much of the controversy surrounding reforms widely debated in recent years can be traced to the fact that they imply major changes in the distribution of tax burdens within and across families which are inconsistent with conventional equity and efficiency criteria for tax design. Examples include the flat rate tax proposals of the 1980’s, the introduction of a more highly targeted welfare system in recent years, and the consumption tax package of “Fightback!” involving a substantial tax mix change combined with a system of targeted compensation.¹ The income splitting reform recently advocated by the Leader of the Opposition, John Howard,² is another example.

This paper revisits the individual versus joint taxation debate and presents a detailed assessment of the claim by the Leader of the Federal Opposition that the existing system of individual taxation disadvantages single income families with dependent children and limits freedom of choice. The aim of the paper is to clarify basic economic principles relevant to the problem of taxing families and to present a comparative study of individual taxation and income splitting which is consistent with mainstream theory and takes account of available empirical evidence on behavioural responses to taxes.

¹ For studies evaluating the equity and efficiency implications of these kinds of reforms, see, for example, Brooks (1993,95), Jones (1993), Swayne (1993,85), Symons and Walker (1990) and Apps (1990,93).
The paper is organised as follows. Section II provides an overview of theoretical and empirical considerations relevant to the analysis of reforms to the taxation of families. The section begins with a restatement of the standard argument in favour of taxing the combined income of married couples and then provides a critique which identifies underlying contradictions with modern tax theory and assumptions which conflict with the findings of empirical research. Many of the problems are shown to arise because the argument fails to recognise the importance of analysing tax-benefit reforms using an approach to modelling the behaviour of the family which incorporates household production and takes account of the costs of children, the intra-family distribution of income and market failure.\footnote{1}

Section III of the paper presents a detailed investigation of the tax rate changes implied by income splitting. Average and marginal rates under a hypothetical revenue neutral income splitting reform are compared with those computed for the existing individual income tax and cash benefit system, using data for couple income units from the ABS 1990 Income Distribution Survey file. The distributional and efficiency implications of the tax rates changes implied by the reform are evaluated within the framework of the critique in Section II. Concluding comments are contained in Section IV.

\footnote{1} The analysis of these issues draws extensively on the models in Apps and Jones (1986) and Apps and Rees (1988, 95a,b,c).
II A critique of the individual versus joint taxation debate

The proposition that individual taxation disadvantages single income families draws on a longstanding argument in support of joint taxation that was frequently advanced in the public finance literature prior to the development of the "new public economics" in the 1970s. The argument involved two steps: first, the specification of the problem of taxing married couples as a choice among competing goals of horizontal equity, defined as the equal treatment of couples with the same combined income, marriage neutrality and progressivity; and second, the assertion that the goal of horizontal equity is more important than that of marriage neutrality or, at the very least, that there is a trade-off among the three goals. The approach is summarised by Munnell (1980) as follows:

"When imposing income taxes, all governments must choose among the following highly appealing but logically inconsistent goals:

1. Equal taxation of couples with equal incomes, which implies that married couples should be considered as economic units, with their taxes based on the amount of joint income, not on its distribution between spouses. For example, a couple with each spouse earning $10,000 should pay the same tax as a couple in which one spouse earns the full $20,000.

2. Marriage neutrality, which implies that there should be no penalty for marriage and none for being single. For example, a man and a woman each earning $10,000 should pay the same amount in taxes whether single, married, or divorced.

3. Progressivity, which implies that a single person earning $20,000 should pay more tax than two single people earning $10,000 each.

Each of these three principles has widespread appeal. ... Advocates of income splitting] argue that because spending decisions are made jointly by the husband and wife, economic

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*The new public economics developed with the rediscovery of optimal tax theory initiated by Diamond and Mirrlees (1971) and others. See Atkinson and Sliglitz (1989) for a critique of earlier approaches to the tax problem based on the Haig-Simons model which typically ignored incentive effects and the limitations of money income as the tax base.*
well-being and taxable capacity depend on their combined income. Therefore couples with identical incomes should pay equal taxes.”

The most crucial error underlying the argument is contained in goal 1. The definition of horizontal equity in terms of equal taxation of combined income implies that the observed income of married couples is perfectly correlated with their “well-being and taxable capacity”, and is therefore the ideal tax base. This assumption is open to criticism at several levels. At a general level the idea that observed income is a perfect measure of the ideal tax base, even for the single individual, is inconsistent with the mainstream view of the tax problem. Modern theory recognises that information asymmetries constrain the government to taxing indicators of what it would like to tax. Observed money income is such an indicator and gives rise to complications because, among other things, it omits the value of non-market time. Ideally the government would like to impose lump sum taxes of varying amounts on the ‘given’ characteristics of individuals, such as endowments and tastes, that determine their opportunity sets and levels of well-being, but these cannot be observed. The consequent constraint on the choice of tax base gives rise to two important problems: (i) horizontal and vertical inequities due to ‘errors’: the indicators are not perfectly correlated with the opportunities and well-being of the individual, and (ii) efficiency losses due to incentive effects: the indicators are usually under the control of the individual and so taxing them is distortionary.

At a more specific level, the assumption that observed income represents an ideal tax base for married couples is particularly perverse. Observed income omits the value of household production as well as leisure, and it is specialisation in household production, typically by the female partner, that distinguishes the traditional household with one earnar from the non-traditional household with two earners. Because domestic goods contribute to family well-being, and the degree of specialisation in domestic production varies significantly across

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5 See Atkinson and Stiglitz (1976) for a detailed exposition of this view of the tax problem.
households, observed money income is likely to be a particularly unreliable indicator of their welfare. The literature has given considerable attention to the problem of taxing the income of the single individual who can switch to untaxed leisure. In comparison with the situation of married couples, the problem is relatively straightforward because the untaxed options for the single individual are limited to pure leisure and domestic production for own consumption. In contrast, a partner of a couple can switch from working in the market place to producing domestic goods in exchange for an untaxed money income within the household.

The formation of a couple allows a partner to remain outside the formal labour market and earn an income for purchasing market goods, by producing domestic goods and services for family members. These domestic goods and services, and the income derived from their production, are untaxed. In effect, the formation of couples introduces an additional job choice: a spouse can choose between untaxed production for exchange at home or taxed market work. Because observed money income excludes income derived from work at home, an individual income tax system gives preferential treatment to the single income family. A partner who chooses to specialise in domestic production avoids paying tax on income derived from that activity within the family.

If all couples with the same earning capacities and non-labour incomes worked the same hours in both locations - the market place and the home - the untaxed status of household production would not unduly complicate the tax problem. Special consideration would have to be given to the tax treatment of single individuals versus married couples, but the difficulties associated with varying commitments to domestic production among married couples would not arise. It is the fact that in some families one partner chooses to specialise in domestic work while in others, both partners work in the market place, which gives rise to complexity. In analysing the distributional impact of a reform it is essential to take account of the variation in household production across traditional and non-traditional households, and to recognise the preferential treatment of single income families under individual taxation.
One approach to reducing horizontal equity between single and two income families due to the untaxed status of domestic production is to introduce separate rate schedules for primary and secondary earners, with a lower rate schedule applying to the income of the secondary earner. Under this kind of “selective” system the tax status of second earners would be more in line with that of their untaxed counterparts in single income families. Moreover, the selectivity is consistent with equity within the family, since the secondary income earner is typically the female partner with a lower earning capacity due at least in part to the distortionary effect of discrimination in the market place.

If selectivity of this kind is not a policy option, an alternative strategy is to rely on a greater degree of progressivity in the rate schedule of an individual tax system. A purely individual income tax is generally classified as ‘anonymous’, because the income of each individual is subject to the same rate scale irrespective of personal characteristics such as marital status or gender; in other words, the system does not discriminate. However, the distribution of tax burdens between primary and secondary earners, as well as the marginal rates they face, depends on progressivity. It is this feature of a progressive individual income tax that is the centre of concern in the argument outlined by Munnell. As Munnell illustrates, under a progressive individual income tax a person on $20,000 has to pay more tax than two people each earning $10,000. However, the differential between tax burdens in the case of couples with these incomes, far from giving rise to a problem of horizontal equity, is in fact in the direction required for improving horizontal equity between traditional and non-traditional households.

The vertical and horizontal equity merits of a progressive individual income tax can be illustrated by a simple example. Consider three couples, labelled Couple 1, 2 and 3, in which partners have identical preferences for work and leisure, equal earning capacities, zero non-labour incomes and identical family commitments. Taking the income figures selected in the

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6 The example assumes a perfectly competitive labour market (or at least a dual labour market in which submarkets are internally competitive) and therefore abstracts from problems of unemployment.
examples cited by Munnell, suppose that partners in Couples 1 and 2 each have earning capacities of $20000 for full time work, but in Couple 1 both partners choose to work full time in the market place whereas in Couple 2 only one chooses to work in the market place. Suppose that in Couple 3 the partners have earning capacities of $10000 and both work full time in the market place. The full incomes of Couples 1 and 2 (and their potential incomes) are obviously identical, but twice that of Couple 3. If we assume that the partner in Couple 2 working full time at home produces domestic goods and services which contribute at least as much to family well-being as the market goods purchased from the income of the second earner in Couple 1, horizontal equity would require equal taxation of Couples 1 and 2, even thought the observed income of Couple 1 is twice that of Couple 2. Vertical equity would require that Couple 2 pay more tax than Couple 3. Under a proportional income tax neither of these criteria are satisfied: Couple 1 pays twice as much tax as Couple 2 when, for horizontal equity, both couples should pay the same amount, and Couple 2 pays the same tax as Couple 3 when, for vertical equity reasons, the former should pay more. The situation can be improved by making the tax progressive, with the degree of improvement being positively related to the degree of progression. Progressivity and horizontal equity increase together. They are not competing goals.

In contrast to the anonymity of a progressive individual income tax, the defining feature of joint taxation is that it imposes higher marginal and average rates on the second earner at any given level of income. Income splitting therefore represents a selective rate system, but one which introduces selectivity in the wrong direction. Moreover, because it implies higher average and marginal rates for second earners, with the gap between rates increasing with progressivity, it introduces an artificial trade-off between progressivity and horizontal equity that ultimately limits the degree of redistribution that can achieved by a progressive rate...

Unemployment implies a binding constraint on the individual’s time allocation problem. In the design of unemployment benefits, appropriately analysed as a policy response to private insurance market failure, it is important to take account of domestic production.

1 Full income is computed as the product of the wage rate and total time available. Potential income is computed as the product of the wage rate and a given number of hours of work. For a study comparing family rankings defined on full income, potential income and household income, see Apps and Savage (1989).
schedule. The higher effective marginal rates for second earners may lead to significant disincentive effects on labour supply, savings and marriage. These efficiency issues will be considered in more detail below.

The preceding analysis highlights the fact the choice between individual and joint taxation is a choice between alternative rate structures, and that in analysing the effects of those structures we need to take account of the contribution of household production to the welfare of family members. This contrasts with the frequent discussion of the issue in terms of the choice of the appropriate economic unit - the individual versus the family. The extract from Munnell provides an illustration. The first goal contains the proposition that equal taxation “implies that married couples should be considered as economic units” and from this proposition, as Munnell points out, advocates of income splitting go on to assert that “because spending decisions are made jointly by the husband and wife, economic well-being and capacity to pay depend on their combined income”. This fine of reasoning reflects a further serious deficiency in the approach taken to modelling the economics of the family. Not only does the argument ignore the contribution of household production to family welfare, it relies on an implicit model of the household decision process which, in general, assumes that income is redistributed within the family according to welfare weights that are consistent with those of the government. More specifically, the case for income splitting requires the assumption that the welfare weights result in an equal distribution of income between partners. Thus the underlying model of the family is an extremely specialised one, particularly as a representation of the traditional family. On the one hand it assumes that the female partner in the traditional household contributes nothing to family welfare and, on the other, that the male partner altruistically makes a lump sum transfer of half his income to his ‘dependent’ female partner.

8 Individual taxation and family taxation are frequently described as two extremes (see for example, Brazer, 1980). They are not. Both give preferential treatment to one income families. The essential difference between the two is that joint taxation gives a greater advantage to the single income family than individual taxation. An opposite ‘extreme’ to joint taxation would be represented by a system which gave preferential treatment to two income couples, for example by exempting the income of the secondary earner from tax and providing a subsidy.
Under these two assumptions it is valid to treat the combined money income of a married couple as shared for tax purposes.

Both assumptions can be rejected. The idea that altruism produces equality within the family is not supported by available data on time use (see ABS, 1992) indicating that in families with children women work longer hours than men, when hours of domestic work and child care are included. While the unavailability of data on the consumption of market and domestic goods by family members severely limits investigation of the intra-family distribution of income, data on hours of work suggest the possibility that there may be transfers from the female to the male partner. Issues of this kind are addressed in Apps and Rees (1988, 95b) within the framework of a general model of a multi-person household incorporating household production.

The gender differential between hours of work by partners revealed by time use data suggests that inequality in the market place may carry over to the family. A link of this kind would offer an explanation for the traditional market-household division of labour by gender, and it would imply that such a division of labour is distortionary and potentially costly in terms of efficiency losses. A tax policy implication is that higher rates on married women as second earners under income splitting could exacerbate this labour market distortion by reinforcing traditional gender roles, and could widen the gender wage gap. These considerations lend further support to the argument in favour of a relatively progressive individual income tax.

We now turn to the role of children in the family. It is generally accepted that the presence of children imposes additional costs on family resources and the large literature on equivalent scales attempts to provide measures of the costs they create for a household. In a recent

9 It also contradicts findings based on consumption data for families in developing countries. See, for example, Sco (1983).
10 The situation is represented by a ‘crowding’ model in Apps (1982), in which restrictions on entry into higher wage occupations crowd women into low wage occupations and the domestic sector.
11 Important recent contributions include Deaton and Muellbauer (1980), Grozau (1988, 91) and Nelson (1993).
paper, Apps and Rees (1995c), we suggest that much of this literature has been misdirected and argue for a reorientation which gives more attention to the broader economic context in which problems associated with child costs arise, and to analysing problems within that context. As a starting point we ask “why children cost their parents anything at all or, equivalently, why parents need to transfer any income to their children”. The explanation we suggest lies in incomplete capital markets which we explain as follows:

“In a world of complete information and perfect markets it would be possible for a child (or its parent as agent) to borrow against its future income to cover all the costs of its childhood, including those of being born! The standard [lifecycle] analysis is concerned with an individual’s use of capital markets to determine an entire lifetime consumption stream given an endowed lifetime income stream. Why should that individual not be a child, or parent acting as the child’s agent? This would imply that parents need not incur child costs. The fact that, as far as we are aware, such debt contracts are not available must be attributed to imperfect information about the future income stream of a newly-born child, as well as to an agency problem - what would there be to stop a parent mortgaging the future income of the child to increase his or her own consumption? This is of course just one step away from selling the child into slavery. It is then this incompleteness in capital markets which creates the need for inter-generational transfers to cover child costs. But then the impossibility of a contract by which a parent would be compensated for these costs from the future income of the child creates the possibility that the costs that would be incurred are not optimal from the child’s point of view. This is not only to say that altruism may not be sufficient to achieve optimality for the child, but the parent’s own wealth constraint defines the consumption and investment possibilities, especially in human capital formation, for the child.”

This analysis bases the case for public provision of assistance for children, either directly in the form of cash transfers or indirectly through public provision of child care and education, on the existence of capital market failure which adversely affects low and middle income families (who also face higher transactions costs). The analysis therefore provides an efficiency
justification for such assistance and for a redistributive tax-benefit system. It can also be argued that there is an important relationship between this kind of capital market failure and gender inequality. In a perfect capital market and in the absence of labour market discrimination, women could not be disadvantaged by having children. The perpetuation of gender inequality and the traditional division of labour within the family requires the coincidence of both kinds of market failure. This analysis suggests a considerable degree of distortion in the work choices of partners, and reinforces an efficiency argument for assistance for the costs of children, particularly for those of pre-school age currently denied access to the greater level of resources available to older groups through public education.

In determining the appropriate level and form of assistance for child costs, reliable information on the allocation of resources to children within the family is required, including the time cost of domestic production and child care as well as market goods expenditures. Many studies introduce arbitrary assumptions about the costs of children, either because they fail to take account of additional expenditures on market goods and services for children by non-traditional households, or because they ignore the additional time cost of children in traditional households, as in the case of the equivalence scale literature (for a critique, see Apps and Rees, 1995c). A second kind of arbitrary assumption concerns scale economies. Because the equivalence scale literature typically ignores the domestic time cost of children, results indicating a decline in per capita market goods expenditures with family size are interpreted to indicate scale economies. More broadly based studies incorporating domestic time costs could find diseconomies.

Cash transfers for children raise again the tax rate design problem. A universal system characteristically implies higher marginal tax rates on income generally, whereas a means tested system imposes higher effective marginal rates on lower income workers. Since the means test is typically based on family income, the latter implies the same kind of rate structure as income splitting. To evaluate the alternatives we therefore need to consider the
distributional issues which have already been examined and, in addition, investigate incentive effects, to which we now turn our attention.

The modern tax literature emphasises the importance of incentive effects in tax design. Direct and indirect taxes on observed incomes are distortionary because, as we have already noted, individuals may switch to untaxed domestic activity. The size of the efficiency cost depends on the magnitude of (compensated) substitution effects, that is, on the extent to which individuals do in fact substitute taxed for untaxed activity. To evaluate the overall efficiency effects of a progressive individual income tax in relation to those of income splitting, and of systems of targeted cash transfers, estimates of behavioural responses are required.

Behavioural effects depend on marginal tax rates: the higher the marginal tax rate on earned income, for example, the greater the reduction in the net wage, and hence the greater the incentive to switch to untaxed uses of time. While for distributional reasons progressivity in average tax rates is desired, a higher rate of progression necessarily implies higher marginal tax rates. The question therefore is: how should the structure of marginal rates be designed to minimise the efficiency cost of taxation? An important result in optimal tax theory, due to Ramsey, tells us that tax rates should (ceteris paribus) be inversely related to compensated behavioural responses. The rule implies that to minimise the efficiency cost of distortionary taxes on labour income, for example, marginal rates should be lower for those who have more responsive labour supplies. The available empirical evidence suggests that the labour supply responses (or wage elasticities) of low wage workers in general, and of women as second earners in particular, are greater than those of high wage workers (typically prime age males). These stylised facts lead to the result that for efficiency individual incomes should be taxed at relatively progressive marginal rates.

12 For surveys of the literature, see Killingsworth (1983) and Killingsworth and Heckman (1991).
A further issue requiring comment is the taxation of savings. Under an income tax, saving is subject to "double" taxation and so the effects of this also need to be considered. Empirical studies indicate that saving behaviour tends to be unresponsive to the tax rate on income, and moreover since the marginal propensity to save rises with income, saving is a luxury. Taxing savings at a higher rate is therefore consistent with the Ramsey rule and with distributional objectives, and underlies the widely held view in the literature that a well designed individual income tax is superior to other forms of taxation (see, for example, Stiglitz, 1988). The analysis of savings therefore provides further support for the argument that governments should rely primarily on a progressive individual income tax for raising revenue.

13 The usual concern regarding the Ramsey result is that goods for which demand tends to be inelastic also tend to be necessities, and so taxing them is regressive. It is interesting to observe that this is not the case for savings. The existence of capital market failures due to information asymmetries and transaction costs offer an explanation for this unusual result.
III Rate structure implications of individual taxation and income splitting

We now examine the changes in tax rates implied by a reform allowing income splitting. Using data from the ABS 1990 Income Distribution Survey file, we compare average and marginal tax rates faced by households under the 1989/90 personal income tax and cash benefit system with those they would face under a hypothetical revenue neutral reform which allowed couples to split their incomes for tax purposes. Average tax rates are computed as the ratio of taxes net of cash benefits to private income. The analysis is based on data for a sample of 9266 couple income unit records (referred to interchangeably as ‘families’ or ‘households’) with complete information on income variables, drawn from the 1990 ABS file. Single income units are excluded on the assumption that a system of income splitting, if introduced by a future government, would be designed to ensure that the overall tax burden on single individuals is unchanged, for example by incorporating a separate rate schedule for single persons as in the United States.

Because observed income is not a reliable indicator of the ‘well-being’ of families with varying commitments to dependent children and market work, it is important that comparisons between tax systems based on rates on income take account of these commitments. For this reason tax rates are reported for subsamples of couple income units defined on demographic variables and earning status. First the sample is divided into two broad groups representing couples with a significant workforce attachment, referred to as ‘employed’ couples or families, and those with minimal or no attachment. The sample of employed couples is selected on the criteria that the partner with the higher private income, the ‘primary income’ partner, works at least 1500 hours per year in the market place and records a private income of over $10000 per year. This subsample contains 6094 records, and therefore represents approximately two thirds of the full sample of couple income units.

Much of the analysis focuses on the distributional implications of income splitting for the sample of employed families. Comparisons are made between subgroups of families within
this sample broadly representing traditional households with a single income earner and non-
traditional households with two income earners. The former group is defined on the criteria
that the partner with the lower private income, the 'secondary income' partner, works for less
than 500 hours per year or has a private income of less than $5000 per year. The 'single
earner' sample of couple income units contains 2845 records and the 'two earner' sample
3249 records. In the analysis to follow records in the former sample are referred to as 'single
income' or 'traditional' households and those in the latter as 'two income' or 'non-traditional'
households. Average and marginal tax rates facing partners and families under the alternative
tax regimes are reported for rankings of couples defined on the private income of the primary
income partner.14

Primary income is selected as the variable for defining household rankings in order to minimise
errors in the welfare ordering of families with different commitments to market work. Table 1
illustrates the systematic bias in the location of single and two income families in an ordering
defined on household income. The table compares decile rankings by household income and
primary income for the sample of employed couple income units. Columns 1 to 4 of the table
report the ranking by household income showing, respectively, mean household private
income, the percentage of two income couples, mean hours of market work by the secondary
income partner, and the mean private income of the primary income partner in each decile.
The figures reflect the strong positive correlation between household income and hours of
market work of the secondary income partner. The percentage of households in which both
partners have a significant labour force attachment is only 11 per cent in decile 1 in contrast to
79 percent in decile 9 and 75 percent in decile 10. The mean market hours of work by the
secondary income partner is only 473 per year in decile 1 because there are so few two earner
couples in this decile. The figure rises to 1575 hours per year in decile 9 and then declines
slightly to 1502 hours per year in decile 10. Secondary income partners in two income

14 All results are weighted by income units weights.
Table 1  Employed families: Family rankings defined on household income and primary income

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<th>Mkt hrs 2nd partner</th>
<th>Primary income</th>
<th>5 Ins</th>
<th>%</th>
<th>Mkt hrs secondary partner</th>
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<td>987</td>
<td>91</td>
</tr>
<tr>
<td>8</td>
<td>58452</td>
<td>76</td>
<td>1425</td>
<td>36930</td>
<td>41142</td>
<td>15143</td>
<td>60</td>
<td>1112</td>
<td>91</td>
</tr>
<tr>
<td>9</td>
<td>68836</td>
<td>79</td>
<td>1575</td>
<td>46823</td>
<td>49094</td>
<td>16692</td>
<td>59</td>
<td>1109</td>
<td>95</td>
</tr>
<tr>
<td>10</td>
<td>112359</td>
<td>75</td>
<td>1502</td>
<td>80851</td>
<td>84907</td>
<td>21217</td>
<td>54</td>
<td>1017</td>
<td>94</td>
</tr>
<tr>
<td>All</td>
<td>49629</td>
<td>47</td>
<td>1038</td>
<td>36668</td>
<td>36668</td>
<td>12961</td>
<td>53</td>
<td>1038</td>
<td>88</td>
</tr>
</tbody>
</table>

families work an average of 1771 hours per year, with very little variation across deciles. The argument for income splitting implies that the opportunity cost of this work, in terms of foregone domestic production and leisure, is zero, because those who work at home make no contribution to family welfare.

Columns 5 to 9 report the ranking of employed couples by primary income. Columns 5 and 6 show mean primary and secondary private incomes, column 7 gives the percentage of two income families in each decile and column 8, the mean of market hours of work by the secondary income partner in each decile. Column 9 records the percentage of families in which the male partner is the primary earner. The most striking feature of the ranking is the relatively flat profile of two income families across deciles. The percentage of two income families varies from only 45 per cent (in decile 1) to 60 per cent (in decile 8). As a result there is very little variation in mean hours of market work by the secondary income partner across deciles. Assuming that the earning capacities of partners are positively correlated, primary

15 See Becker (1987, Ch.4) for a discussion of positive 'assertative mating' and references to empirical evidence.
income is likely to be a relatively reliable indicator of the well-being of families because, as illustrated by these figures, it implicitly allows for variation in the institutional location of work - the market place versus the household - chosen by the secondary income partner.\textsuperscript{16}

Comparisons between the two rankings reveal other important features of the distribution of income and employment. The decile distribution of mean primary income in the household income ranking (column 4) is very similar to that of the primary income ranking (column 5). Both indicate a high degree of inequality among primary income partners, particularly at the top of the income scale. The differential between the means in deciles 9 and 10 implies that on average the income of primary income partners in the top decile is approximately 70 per cent greater than that of those in decile 9. This percentage differential exceeds that between the means of household income in the same deciles of the household income ranking. These results highlight the fact that it is inequality among primary income earners, typically male partners, which is the major determinant of household income differences.

Simplistic presentations of household income statistics which emphasise a positive correlation between household income and the number of income earners can conceal the crucial role of income differences among primary income partners in determining the overall degree of inequality in the distribution of family income. Such statistics can also lead to a misinterpretation of the role of gender differentials and the perverse inference that reduced discrimination increases the overall degree of inequality. The final column of the table shows that in 88 per cent of households the primary income earner is male, and that in the top four deciles more than 90 per cent of households have a male primary income earner. Clearly we require a tax system which reduces income differences among primary income partners, as well as among secondary income partners working the same hours in the market place, and one which reduces the differential between partners due to gender discrimination. It makes no sense in terms of equity to introduce a reform which reduces taxes on high income primary

\textsuperscript{16} See Apps and Savage (1989) for a detailed analysis of family rankings indicating the merits of primary income as a welfare indicator in preference to household income.
earners and increases discrimination against secondary income partners, such as income splitting.

To compute the average and marginal tax rates that would apply if income splitting were introduced, we first of all need to specify a revenue neutral reform. Allowing couples to split their incomes for tax purposes without a change in the existing marginal tax rate schedule would result in a substantial loss of revenue. To maintain revenue neutrality across all couple income units, marginal rates above the 1989/90 threshold are increased by just over three percentage points. This rate increase leads to a relatively small shift in the tax burden from employed couples to those with minimal or no workforce attachment. The average tax liability of households in the former group declines by $71 while that of those in latter group increases by $139.

The first comparison we make is between the tax rates faced by partners in employed families. Table 2 reports average and marginal tax rates for primary and secondary income partners under the 1989/90 income tax-benefit system (individual taxation) and those which they would face under the income splitting reform. Columns 1 and 2 report the average tax rate (ATR) on primary and secondary private incomes respectively under individual taxation and columns 3 and 4 give average rates under income splitting. Marginal rates are reported in columns 5 to 8. The figures illustrate the large shift in the distribution of tax burdens from primary income partners to secondary income partners which would follow from the introduction of a joint tax system in the form of income splitting. The size of the intra-family shift in tax burdens is indicated by the change in average rates for partners. Comparing overall means, the average rate of tax on the primary income partner is 0.27 under individual taxation and this falls to 0.20 under income splitting. The average rate for the secondary income partner rises from 0.14 under individual taxation to 0.32 under income splitting. Changes in average tax rates of these dimensions appear in every decile. Since the secondary income partner is typically female, these tax rate changes imply a large shift in the tax burden to employed married women.
Table 2  Employed couples: Intra-family distribution of average and marginal tax rates under individual taxation and income splitting

<table>
<thead>
<tr>
<th>Decile</th>
<th>Individual taxation</th>
<th>Income splitting</th>
<th>Marginal tax rates</th>
<th>Individual taxation</th>
<th>Income splitting</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Primary income 1</td>
<td>Secondary income 2</td>
<td>Primary income 3</td>
<td>Secondary income 4</td>
<td>Primary income 5</td>
</tr>
<tr>
<td>1</td>
<td>0.12</td>
<td>0.01</td>
<td>0.07</td>
<td>0.13</td>
<td>0.22</td>
</tr>
<tr>
<td>2</td>
<td>0.15</td>
<td>0.05</td>
<td>0.12</td>
<td>0.16</td>
<td>0.35</td>
</tr>
<tr>
<td>3</td>
<td>0.18</td>
<td>0.07</td>
<td>0.13</td>
<td>0.20</td>
<td>0.38</td>
</tr>
<tr>
<td>4</td>
<td>0.20</td>
<td>0.11</td>
<td>0.14</td>
<td>0.25</td>
<td>0.38</td>
</tr>
<tr>
<td>5</td>
<td>0.22</td>
<td>0.11</td>
<td>0.15</td>
<td>0.26</td>
<td>0.38</td>
</tr>
<tr>
<td>6</td>
<td>0.24</td>
<td>0.13</td>
<td>0.16</td>
<td>0.31</td>
<td>0.38</td>
</tr>
<tr>
<td>7</td>
<td>0.25</td>
<td>0.13</td>
<td>0.17</td>
<td>0.33</td>
<td>0.44</td>
</tr>
<tr>
<td>8</td>
<td>0.28</td>
<td>0.16</td>
<td>0.19</td>
<td>0.38</td>
<td>0.46</td>
</tr>
<tr>
<td>9</td>
<td>0.31</td>
<td>0.18</td>
<td>0.22</td>
<td>0.41</td>
<td>0.46</td>
</tr>
<tr>
<td>10</td>
<td>0.38</td>
<td>0.24</td>
<td>0.32</td>
<td>0.47</td>
<td>0.46</td>
</tr>
<tr>
<td>All</td>
<td>0.27</td>
<td>0.14</td>
<td>0.20</td>
<td>0.32</td>
<td>0.39</td>
</tr>
</tbody>
</table>

The changes in average tax rates are the result of the structure of marginal rates under a joint tax system, either of the income splitting or aggregation type. The crucial feature of joint taxation is that the secondary income partner effectively faces a marginal rate on the first dollar of earnings that is equal to the marginal rate faced by the primary income partner on the last dollar of earnings. The impact of this on marginal rates is illustrated by the figures shown in columns 6 and 8. Under individual taxation the average of marginal tax rates faced by second earners is 0.22. This average increases to 0.35 under income splitting. Even in the bottom decile, the average of marginal rates increases from 0.15 under individual taxation to 0.24 under income splitting. In the top decile the rate increases from 0.27 to 0.48.

Secondary income partners, most of whom are female, face the highest marginal tax rates even though they do not have the highest incomes.

As argued in Section II, the tax rate selectivity imposed by income splitting cannot be supported on conventional equity criteria. Given the observed differential between male and female wage rates and the systematic relationship between intra-family primary income status and gender, higher rates for secondary income partners can be expected to exacerbate
inequality within the family as well as in the market place, unless we assume a high degree of altruism within the family. An analysis of the intra-household distribution of consumption among adults and children in Apps and Rees (1995c) suggests that, contrary to this assumption, inequality within the family may be greater than that between partners in the market place because of the imbalance between the contribution of male and female partners to domestic work and child care. In terms of efficiency considerations, the findings of empirical research on female labour supply behaviour suggest that a tax system which imposes higher marginal rates on women as secondary income partners is inconsistent with the Ramsey rule. This is the basis for the well know result in Boskin and Sheshinski (1983) that individual taxation is superior to joint taxation for efficiency reasons.

The second issue to be addressed is the distributional impact of income splitting across families. Table 3 compares average tax rates on household private income under individual taxation and income splitting for all employed couple income units. Columns 1 and 2 of the table show the mean of average rates (ATR) in each decile under the two systems, and columns 3 to 4 report the percentage of households that would lose under income splitting and the average size of losses. Column 5 shows the average gains for those who gain from the reform. Comparisons between average rates reveal two interesting features of the income splitting reform. Overall, income splitting is more regressive than the existing individual tax system. However the regressivity arises primarily because of higher rates in the lower deciles. The average tax rates in the top decile are actually the same. From these results it might be concluded that the regressivity of the particular reform we have selected for analysis can be redressed by making marginal rates more progressive, for example, by specifying a reform which achieves revenue neutrality by a progressive increment to marginal rates. Any attempt to alleviate regressivity in this way however is seriously constrained. The tax rates reported in the table conceal wide differences between average rates for traditional and non-traditional families under income splitting. These differences are reflected by the mean losses and gains shown in columns 4 and 5. Of employed couples, 54 per cent lose under the reform and most of these are non-traditional households. As indicated in Section II above, the greater the
degree of progressivity in marginal rates applied to joint income, the greater the degree of horizontal inequity in the treatment of single and two income families, and the higher the marginal tax rate for the second income earner. The latter may not only have significant incentive effects on labour supply, but the US experience suggests that it also produces a disincentive effect for marriage. Recent studies of the US system of joint filing focus on its impact as a ‘marriage tax’ (see, for example, Feenberg and Rosen, 1994).

Table 3  Employed couples: Average tax rates under individual taxation and income splitting

<table>
<thead>
<tr>
<th>Decile</th>
<th>ATR</th>
<th>ATR</th>
<th>Losses</th>
<th>AV Loss</th>
<th>AV Gain</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>%</td>
<td>Spas</td>
<td>Spas</td>
</tr>
<tr>
<td>1</td>
<td>0.08</td>
<td>0.10</td>
<td>91</td>
<td>350</td>
<td>48</td>
</tr>
<tr>
<td>2</td>
<td>0.12</td>
<td>0.13</td>
<td>81</td>
<td>412</td>
<td>37</td>
</tr>
<tr>
<td>3</td>
<td>0.15</td>
<td>0.15</td>
<td>48</td>
<td>320</td>
<td>188</td>
</tr>
<tr>
<td>4</td>
<td>0.17</td>
<td>0.18</td>
<td>40</td>
<td>411</td>
<td>367</td>
</tr>
<tr>
<td>5</td>
<td>0.19</td>
<td>0.19</td>
<td>42</td>
<td>455</td>
<td>593</td>
</tr>
<tr>
<td>6</td>
<td>0.21</td>
<td>0.21</td>
<td>46</td>
<td>583</td>
<td>720</td>
</tr>
<tr>
<td>7</td>
<td>0.22</td>
<td>0.21</td>
<td>44</td>
<td>553</td>
<td>967</td>
</tr>
<tr>
<td>8</td>
<td>0.25</td>
<td>0.24</td>
<td>49</td>
<td>621</td>
<td>1046</td>
</tr>
<tr>
<td>9</td>
<td>0.28</td>
<td>0.27</td>
<td>47</td>
<td>705</td>
<td>1264</td>
</tr>
<tr>
<td>10</td>
<td>0.35</td>
<td>0.35</td>
<td>51</td>
<td>1515</td>
<td>1383</td>
</tr>
<tr>
<td>All</td>
<td>0.23</td>
<td>0.23</td>
<td>54</td>
<td>597</td>
<td>668</td>
</tr>
</tbody>
</table>

To investigate these tax rate differentials in more detail, Table 4 presents separate results for traditional and non-traditional households. Columns 1 to 5 report average rates under individual taxation and income splitting, the percentage of losers in each decile and mean losses and gains, respectively, for traditional households. Columns 6 to 10 give the decile figures for the same variables for non-traditional households. The results show a substantial reduction in average rates for traditional households, and a corresponding increase in rates for non-traditional households, indicating significant gains for single income families financed by losses incurred by two income families. Moreover, the gains for single income families increase sharply with income, and therefore seriously reduce the progressivity of the income
tax-benefit system for this group. In the case of two income families there are substantial losses in all deciles. The figures imply much wider tax differentials between single and two income families with the same earning capacities and non-labour incomes, particularly in deciles 7 to 10, and therefore a much greater degree of horizontal inequity under income splitting. These differentials, and their distributional and incentive implications, ultimately constrain the degree of progressivity of the income tax schedule.

Table 4 Traditional and non-traditional households: Average tax rates under individual taxation and income splitting

<table>
<thead>
<tr>
<th>Decile</th>
<th>Individual taxation</th>
<th>Income splitting</th>
<th>Individual taxation</th>
<th>Income splitting</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ATR 1</td>
<td>ATR 2</td>
<td>Losses 3</td>
<td>Av. loss 4</td>
</tr>
<tr>
<td>1</td>
<td>0.03</td>
<td>0.04</td>
<td>84</td>
<td>197</td>
</tr>
<tr>
<td>2</td>
<td>0.08</td>
<td>0.08</td>
<td>64</td>
<td>162</td>
</tr>
<tr>
<td>3</td>
<td>0.12</td>
<td>0.11</td>
<td>67</td>
<td>361</td>
</tr>
<tr>
<td>4</td>
<td>0.16</td>
<td>0.15</td>
<td>67</td>
<td>361</td>
</tr>
<tr>
<td>5</td>
<td>0.17</td>
<td>0.17</td>
<td>10</td>
<td>93</td>
</tr>
<tr>
<td>6</td>
<td>0.19</td>
<td>0.18</td>
<td>6</td>
<td>52</td>
</tr>
<tr>
<td>7</td>
<td>0.21</td>
<td>0.22</td>
<td>9</td>
<td>119</td>
</tr>
<tr>
<td>8</td>
<td>0.24</td>
<td>0.25</td>
<td>9</td>
<td>93</td>
</tr>
<tr>
<td>9</td>
<td>0.27</td>
<td>0.29</td>
<td>9</td>
<td>149</td>
</tr>
<tr>
<td>10</td>
<td>0.36</td>
<td>0.34</td>
<td>24</td>
<td>806</td>
</tr>
<tr>
<td>All</td>
<td>0.22</td>
<td>0.20</td>
<td>25</td>
<td>184</td>
</tr>
</tbody>
</table>

The results in the preceding tables illustrate the extent to which the tax rate selectively implied by income splitting runs counter to the direction required for improving the existing tax system in terms of the vertical and horizontal equity criteria, and in terms of efficiency. Ideally, the kind of reform required is one which increases average and marginal tax rates for higher income primary earners and, as well, for secondary earners on equally high incomes of which there are very few. A reform incorporating a rate structure with these properties is provided by an individual income tax system with a more progressive rate schedule.
The disincentive effects of income splitting on female labour supply and participation and hours of work can be expected to impact adversely on the level of savings. Data from the ABS 1989 Household Expenditure Survey file indicate that non-traditional households typically have much higher savings rates than traditional households in each decile of primary income. The introduction of income splitting may therefore have a significant disincentive effect on savings, through its effect in the first instance on the labour supply of married women. In addition, it may exacerbate problems associated with an ageing population, by undermining the employment of married women and in turn the tax base for financing future retirement incomes.¹⁷

These undesirable incentive effects arise because the rate structure of income splitting reinforces the effective gender wage gap due to labour market discrimination, thereby further limiting choices for married women. Moreover such a system cannot be rationalised in terms of providing assistance with the costs of children for families. The main beneficiaries of income splitting are high income primary earners in traditional households. Table 5 gives a break down of the effects of income splitting for traditional and non-traditional families with children in the same format as Table 4. The figures indicate that income splitting has much the same distributional impact on employed families with children as it does on all employed couple income units.

The distribution of average losses and gains for traditional and non-traditional families shown in Table 5 again reveals the major shift in the burden of taxation from single income families, particularly those in the top deciles, to non-traditional families, which would follow from the introduction of income splitting. The table illustrates two important features of the reform which contradict the frequent assertion that income splitting would assist families with children. First, most traditional families in the bottom two deciles lose from the reform and of

¹⁷ These implications for financing retirement incomes are examined in Appt (1991). The study shows that the financing of retirement incomes in future decades will depend critically on the participation and hours of work of married women. The paper provides a critique of mandatory contributions to occupational superannuation as a flat rate tax on income.
Table 5  Traditional and non-traditional families with dependent children:  
Average tax rates under individual taxation and income splitting

<table>
<thead>
<tr>
<th>Decile</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ATR</td>
<td>ATR</td>
<td>Losses%</td>
<td>Av-loss</td>
<td>$Sp</td>
<td>ATR</td>
<td>ATR</td>
<td>Losses%</td>
<td>Av-loss</td>
<td>$Sp</td>
</tr>
<tr>
<td>1</td>
<td>0.01</td>
<td>0.02</td>
<td>89</td>
<td>197</td>
<td>46</td>
<td>0.10</td>
<td>0.12</td>
<td>100</td>
<td>536</td>
<td>0</td>
</tr>
<tr>
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<td>0.06</td>
<td>51</td>
<td>146</td>
<td>95</td>
<td>0.14</td>
<td>0.16</td>
<td>98</td>
<td>607</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>0.12</td>
<td>0.10</td>
<td>4</td>
<td>44</td>
<td>458</td>
<td>0.16</td>
<td>0.17</td>
<td>72</td>
<td>515</td>
<td>55</td>
</tr>
<tr>
<td>4</td>
<td>0.15</td>
<td>0.12</td>
<td>8</td>
<td>63</td>
<td>864</td>
<td>0.17</td>
<td>0.18</td>
<td>56</td>
<td>524</td>
<td>181</td>
</tr>
<tr>
<td>5</td>
<td>0.17</td>
<td>0.14</td>
<td>9</td>
<td>77</td>
<td>1168</td>
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<td>64</td>
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<td>250</td>
</tr>
<tr>
<td>6</td>
<td>0.19</td>
<td>0.15</td>
<td>4</td>
<td>52</td>
<td>1587</td>
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<td>0.22</td>
<td>71</td>
<td>837</td>
<td>232</td>
</tr>
<tr>
<td>7</td>
<td>0.21</td>
<td>0.17</td>
<td>9</td>
<td>104</td>
<td>1918</td>
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<td>0.24</td>
<td>79</td>
<td>855</td>
<td>247</td>
</tr>
<tr>
<td>8</td>
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<td>0.18</td>
<td>4</td>
<td>37</td>
<td>2514</td>
<td>0.25</td>
<td>0.26</td>
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<td>804</td>
<td>276</td>
</tr>
<tr>
<td>9</td>
<td>0.28</td>
<td>0.23</td>
<td>10</td>
<td>173</td>
<td>2594</td>
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<td>0.29</td>
<td>67</td>
<td>1014</td>
<td>411</td>
</tr>
<tr>
<td>10</td>
<td>0.35</td>
<td>0.33</td>
<td>20</td>
<td>643</td>
<td>2790</td>
<td>0.35</td>
<td>0.36</td>
<td>69</td>
<td>2052</td>
<td>465</td>
</tr>
<tr>
<td>All</td>
<td>0.22</td>
<td>0.20</td>
<td>22</td>
<td>184</td>
<td>1355</td>
<td>0.24</td>
<td>0.25</td>
<td>73</td>
<td>870</td>
<td>224</td>
</tr>
</tbody>
</table>

The small percentage who gain, the size of gains is small. Significant gains only begin to appear in decile 3. The average gain in this decile however is approximately one fifth of the overall average gain in deciles 8 to 10. The reform is not designed to assist low income traditional families. Second, almost all non-traditional families in deciles 1 and 2 lose, and their losses are substantial. The losses for these low income non-traditional families is a particularly perverse feature of the reform. In many of these families the second earner is working the equivalent of full time hours, and much of the market income derived from that work would be spent on market sector child care and other costs associated with the second partner entering the workforce. Moreover, it is of interest to note that the additional tax revenue raised from the bottom three deciles of non-traditional households far exceeds the aggregate gain accruing to traditional households in decile 3. These features of income splitting also characterise reforms towards a more highly targeted cash benefit system based on joint income, especially when the revenue saved is for the purpose of lowering rates on the earnings of higher income groups. These distributional consequences of income splitting, and of targeting, make no sense in terms of vertical and horizontal equity criteria, nor in terms of
efficiency because the higher tax rates for lower income families are likely to create poverty traps.

Finally we briefly examine the impact of income splitting on the sample of couples with minimal or no labour force attachment. Table 6 presents a decile ranking of the sample by primary income. Columns 1 to 3 report mean primary and secondary incomes in each decile and mean household cash benefits, respectively. Columns 4 and 5 show average tax rates under individual taxation and income splitting, and columns 6 to 8 record the percentage of losers, mean losses and mean gains, as in the preceding tables.

Table 6 Couples with minimal or no workforce attachment: Average tax rates under individual taxation and income splitting

<table>
<thead>
<tr>
<th>Decile</th>
<th>Primary income</th>
<th>Secondary income</th>
<th>Cash benefits</th>
<th>ATR</th>
<th>ATR Loss %</th>
<th>Av Loss</th>
<th>Av Gain</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sp.a</td>
<td>Sp.a</td>
<td>Sp.a</td>
<td>Sp.a</td>
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* ATR's are not reported where cash benefits net of taxes exceed private income

From the figures in columns 1 to 3 it can be seen that cash benefits represent the major source of income for most households in the sample. Because incomes are low and cash benefits are relatively evenly distributed between partners, income splitting has little effect on households in the lower and middle deciles. There are large percentages of losers in these deciles because the reform is regressive, but the size of losses and gains are relatively small. In contrast, in
the top decile 59 per cent of households incur an average loss of $833 while 41 per cent gain an average of $1209. The differential impact of the reform in the top decile reflects the gap between primary and secondary incomes, which in turn suggests an unequal distribution of assets within the family.

Clearly, variation in market and domestic hours of work across households is not an issue for couples with minimal attachment to the labour market. However, data from the 1992 Time Use survey indicate that women work longer hours at home even when neither partner is in the labour force. These data, and the significant degree of intra-family inequality in the ownership of income generating assets indicated by the data on non-labour sources of income, suggest there may be relatively little redistribution within the family, and therefore lend support for the taxation of partners on the basis of their individual incomes. Moreover, individual taxation has the advantage of providing an incentive to equalise the ownership of assets between partners. For these reasons, and because of its overall regressive impact, income splitting can be rejected for couples not in the workforce as well as for those in employment.

IV Concluding comment

This paper has surveyed the debate on individual taxation versus income splitting, providing in Section II a critique of the debate within the context of the mainstream public finance literature and recent contributions to the economics of the family, and in Section III a detailed study of the structure of tax rates implied by each system. Both sections of the analysis identify the equity and efficiency merits of a progressive individual income tax combined with assistance for low and middle income families who face relatively higher child costs due to capital market failure.
Income splitting is shown to fail in terms of meeting conventional criteria for tax design. The defining feature of income splitting is the selective taxation of secondary income partners at higher marginal and average rates than primary income partners. Secondary income partners are typically female with lower earning capacities and more responsive labour supplies. Higher taxes on their incomes can be expected to reinforce existing constraints on their choice between working at home and in the market place, leading to a stronger division of labour on the basis of gender and increased inequality within the family and in the market place. Because these outcomes are distortionary effects of the selective rate structure of a system of joint taxation such as income splitting, they imply an increase in the efficiency cost of taxation.

Income splitting also fails as a policy to assist families. Most lower income families would lose with the introduction of a revenue neutral income splitting reform, and the losses incurred by those with two incomes working long hours for low pay could be substantial. Average losses for middle income two earner families are also substantial. While traditional families gain from the reform, the major beneficiaries are those with higher incomes. The largest average gain accrues to traditional families in the top decile of primary income.

The results of the study highlight the need for reforms to the tax benefit system which, in contrast to a system of joint taxation, reduce inequality within and across families by requiring partners on very high incomes, both primary (of which there are many) and secondary (of which there are relatively few), to pay higher taxes for the purpose of financing child costs. The merits of a more progressive individual income tax stem from the fact that it implies variation in average rates consistent with these distributional objectives, while simultaneously incorporating a structure of marginal rates consistent with minimising the efficiency cost of taxation.
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