

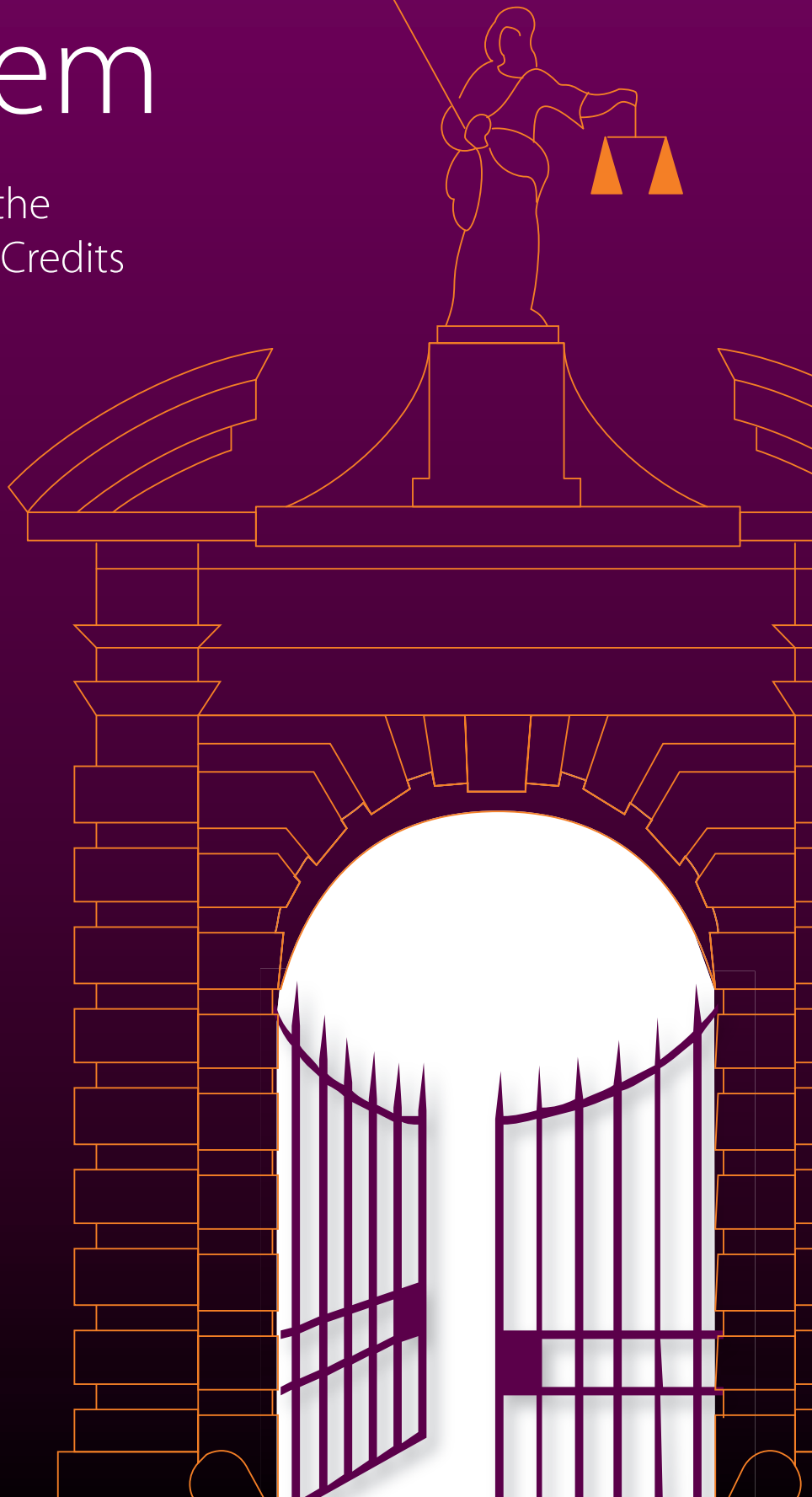
Social Justice Ireland

Policy Research Series

2010

Building a Fairer Tax System

The Working Poor and the
Cost of Refundable Tax Credits



Social Justice Ireland

Working to build a just society

**SOCIAL JUSTICE IRELAND
POLICY RESEARCH SERIES**

Building a Fairer Tax System

The Working Poor and the
Cost of Refundable Tax Credits

JULY 2010

Social Justice Ireland
Working to build a just society

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Acknowledgements

This publication marks the first contribution to the *Social Justice Ireland* Policy Research Series. The series is intended to provide a forum for detailed exploration and analysis of specific socio-economic policy proposals. It also reflects a number of the strategic objectives of this organisation associated with playing a leading role in major public policy arenas on issues related to social justice; giving special priority to national and international issues related to poverty, inequality and social exclusion; and providing accurate social analysis, credible alternatives and effective pathways from the present situation to the future in all areas of public policy in which we engage. In all these regards, this document is an appropriate pathfinder for the Policy Research Series.

We wish to acknowledge the contribution of a number of individuals and organisations who played important roles in the development and production of this study. Two independent economists, Robert Ryan and Dr Micheál Collins both of the Department of Economics at Trinity College Dublin, researched and produced the study. Both worked extensively to complete the study and set a high initial benchmark for this series. We also wish to acknowledge the contribution of a number of peer reviewers who, through their comments and suggestions, greatly added to the quality and focus of this study. The data for this study was provided via the Irish Social Science Data Archive (ISSDA) at University College Dublin and we wish to thank the Director of the archive, Dr James McBride. Similarly, we wish to acknowledge the contribution of the Central Statistics Office (CSO) both for collecting the data used in this study and for making it available to researchers and organisations who wish to use it for studies such as this one. The availability of data on income and income distribution in Ireland has come a long way in recent years due, in no small part, to the efforts of the CSO.

We also wish to acknowledge a financial contribution from the Marist Sisters which made this study possible.

The analysis and findings presented in this study speak for themselves. They outline a credible and feasible method to simultaneously enhance the fairness of the taxation system and address the

problem of the 'working poor'. They also raise serious questions regarding the quality and robustness of previous assessments of the cost of refundable tax credits by the Department of Finance. It is unacceptable that the exploration of policy options, and indeed policy formation itself, should be based on inaccurate and misleading numbers. We hope that this document will ensure that these practices are abandoned and that credible contributions on this issue become the norm from here on.

Finally, we have commissioned this study as a contribution to the debate on tax reform and low-income employees in Ireland. We realise that it proposes a reform which is challenging given the current fiscal climate. However, it is clear that a major structural reform of the taxation system is necessary and we consider that this research shows that the move to a targeted system of refundable tax credits for low-income employees is a credible and sensible policy path to pursue.

Brigid Reynolds

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July 2010

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Executive Summary

Building a Fairer Tax System: The Working Poor and the Cost of Refundable Tax Credits

Introduction

This study addresses two key issues in Irish social and economic policy. These are:

- the need to reform and develop our taxation system so that it becomes fairer and;
- the need to address the issue of the ‘working poor’ where many individuals and their dependents, despite being active in the labour market, receive an income that is insufficient to take them above the low-income threshold as represented by the poverty line.

It does so by proposing the introduction of a defined system of refundable tax credits.

Refundable Tax Credits

A refundable (or ‘non-wasteable’) tax credit is one where, in the event that the income of an individual is insufficient to use up all of his or her tax credits, the remaining credit is paid to the individual by means of a cash transfer.

Table 1 – Simple Example of Refundable Tax Credits

		Amount
Gross annual income		€10,000
Gross tax liability (20%)	€2,000	
Tax credits	- €3,000	
Net tax liability	- €1,000	€0
Net annual wage		€10,000
Unused tax credit		€1,000
Value of refund		€1,000

For example, consider the simple example in Table 1. An employee earning a gross annual wage of €10,000 who is taxed at the standard rate of 20 per cent incurs a gross tax liability of €2,000. This

gross tax liability is normally reduced by the total value of the employee's tax credits. If this employee has total tax credits of €3,000 her tax liability will be reduced to zero and €1,000 worth of tax credits remain unused. Under a system of refundable tax credits, this €1,000 would be paid to the employee as a cash transfer.

A key problem with the current system of tax credits, which was also inherent in the previous system of tax-free allowances, relates to fairness for low-income employees. Where an individual does not earn enough to fully exploit the total value of all tax credits for which they are eligible, they will not benefit from increases in those credits or reductions in the rate of income tax. Following successive Budgets and social partnership agreements, most low-income employees have been removed from the tax net and, as such, are more likely to be excluded from profiting from budgetary decisions featuring favourable changes in tax credits or rates. This is particularly unfair where national agreements maintain pay restraint for these same employees. Refundable tax credits would see this group stand to benefit where they previously did not.

The aforementioned improvement in the fairness of the taxation system with regard to low-income employees represents a key benefit of a system of refundable tax credits. However, other benefits also exist and are outlined in the study. These include:

- Refundable tax credits would provide a straightforward and cost-effective way of improving the net income of employees whose income is the lowest, with no additional administrative burden on the employer.
- A system of refundable tax credits would prove to be a useful mechanism for incentivising employment over welfare reciprocity in that a refundable tax credit confined to working individuals would broaden the gap between social welfare benefits and income derived from paid employment, including self-employment.
- From a long-term perspective, a system of refundable tax credits would provide an avenue to extend the role of the tax system into the areas of income support and equitable income distribution, where such developments are deemed more effective and/or efficient than the current instruments used to achieve these policy goals.

Social Justice Ireland's Refundable Tax Credits Proposal

This study proposes a refundable tax credit system of a defined, rather than universal, nature. The primary features of this proposal are as follows:

1. Refunds apply to the unused portions of the Personal and PAYE tax credits *only*.
2. A set of eligibility criteria must be satisfied **in the relevant year** for an individual to be considered for a refund for that year. These are as follows:
 - a. Individuals **must** have unused personal and/or PAYE tax credits (by definition).
 - b. Individuals **must** have been in paid employment.
 - c. Individuals **must** be at least 23 years of age.
 - d. Individuals **must** have earned a minimum annual *income from employment* of €4,000.
 - e. Individuals **must** have accrued a minimum of 40 PRSI weeks.
 - f. Individuals **must not** have earned an annual *total income* greater than €15,600.
 - g. Married couples **must not** have earned a combined annual *total income* greater than €31,200.
3. Payments would be made at the end of the tax year.

Consequently, the proposal is targeted at low-income individuals and households who are actively and continuously involved in the labour market.

Data

The data employed in this study come from the EU *Survey on Income and Living Conditions* (EU-SILC), provided by the Central Statistics Office (CSO) via the Irish Social Sciences Data Archive (ISSDA) at University College Dublin. EU-SILC, or SILC, is a European initiative focused on gathering data and generating indicators on income, poverty, social exclusion and other living conditions. To this end, the CSO collects information on individuals' direct incomes, social transfers, tax and social insurance contributions in extensive detail, which makes EU-SILC a particularly useful instrument for the purposes of analysing the effects of national policies anticipated to affect incomes and the income distribution. This study uses household income data from a representative sample of 14,634 individuals across 5,386 households in order to estimate the costs and impact of the refundable tax credits proposal. The data is from the year 2006.

Costing of the Proposal

The total cost of refunding unused tax credits to individuals satisfying all of the criteria mentioned in this proposal is estimated at €140,051,823.

Impact of the Proposal

The study includes a detailed assessment of the impact of the proposed refundable tax credits system on low-income employees and their households and on the fairness of the Irish taxation system. Its findings include:

- Almost 113,300 low income individuals directly benefit from a refund and will see their disposable income increase as a result of the proposal.
- The majority of the refunds are valued at under €2,400 per annum (or €46 per week) with the most common value being individuals receiving a refund of between €800 to €1,000 per annum (or €15 to €19 per week).
- Considering that the individuals receiving these payments have incomes of less than €15,600 (or €299 per week), such payments are of significance to them.
- Almost 40 per cent of refunds flow to low-income working poor households who live below the poverty line.
- A total of 91,056 individuals (men, women and children) below the poverty threshold benefit either directly (through a payment to themselves) or indirectly (through a payment to their household) from a refundable tax credit.
- Of the 91,056 individuals living below the poverty line that benefit from refunds, most (over 71 per cent) receive refunds of more than €10 per week with 32 per cent receiving in excess of €20 per week.
- A total of 148,863 individuals (men, women and children) above the poverty line benefit from refundable tax credits either directly (through a payment to themselves) or indirectly (through a payment to their household). Most of these beneficiaries have income less than €120 per week above the poverty line.
- Overall, almost 240,000 individuals (91,056 + 148,863) living in low-income households would experience an increase in income as a result of the introduction of refundable tax credits,

either directly (through a refund to themselves) or indirectly (through a payment to their household).

- Once adopted, a system of refundable tax credits as proposed in this study will result in all future changes in tax credits being equally experienced by all employees in Irish society. Such a reform would mark a significant step in the direction of building a fairer taxation system and represent a fairer way for Irish society to allocate its resources.

Conclusion

Using data from 2006, the most up-to-date data available when this study was commissioned, the *Social Justice Ireland* refundable tax credits proposal has been costed at just over €140 million. While the costs of the proposal will change in line with variations in the structure of the taxation system and the labour market, the costs are unlikely to significantly vary from this study's findings.

The detailed costing performed as part of the empirical analysis in this study, contrasts with the previously published figures for refundable tax credit systems for Ireland. The difference between these costings is significant and should raise some concern regarding the occasional updates to the costing of these proposals presented, with limited accompanying empirical detail and analysis, by the Department of Finance. Simply, evidence based policy making should be based on solid evidence and, as this analysis shows, to date the consideration of this proposal has been badly served by poor 'evidence'. It is hoped that a contribution of this study is to ensure future debate on this issue can be more informed and the proposal is not dismissed simply on the grounds of excessive costs and feasibility.

Finally, the study demonstrates that although the costs of this proposal are small in the context of the overall taxation system, its impact is significant for low income employees and their dependents. A further important implication of the proposal is that its implementation would mark a significant step in the direction of building a fairer taxation system where resources are more equally distributed.

1 Introduction

This study addresses two key issues in Irish social and economic policy. These are:

- the need to reform and develop our taxation system so that it becomes fairer and;
- the need to address the issue of the ‘working poor’ where many individuals and their dependents, despite being active in the labour market, receive an income that is insufficient to take them above the low-income threshold as represented by the poverty line.

It does so by proposing the introduction of a defined system of refundable tax credits. A refundable (or ‘non-wasteable’) tax credit is one where, in the event that the income of an individual is insufficient to use up all of his or her tax credits, the remaining credit is paid to the individual by means of a cash transfer.

While there have been a number of empirical studies on refundable tax credits in the international literature over recent years, there has been limited detailed attention to the topic in Ireland. Where Irish studies have occurred they have yielded widely varying results from which conflicting conclusions have been drawn.

Social Justice Ireland commissioned this study to provide a detailed exploration and costing of this issue using the most comprehensive Irish data available, the Central Statistics Office’s *Survey on Income and Living Conditions* (EU-SILC). This study uses household income data from a representative sample of 14,634 individuals across 5,386 households in order to estimate the costs and impact of the refundable tax credits proposal. The analysis has been undertaken by independent economists and subjected to a peer review process.

This study proposes and examines a refundable tax credit system of a defined or limited nature; one targeted at low-income individuals and households who are actively and continuously involved in the labour market. The primary features of the proposal are that: (i) refunds apply to the unused portions of the Personal and PAYE tax credits only; (ii) a set of eligibility criteria must be satisfied in the relevant year for an individual to be considered for a refund for that year; and (iii) payments

would be made at the end of the tax year. The proposal also considers how the system might be administered using the existing administrative infrastructure.

The study is structured as follows. Refundable tax credits are introduced in Chapter 2 and previous assessments of the topic in an Irish context are outlined in the following chapter. Chapter 4 then details the data and methodology used in this study. Chapter 5 outlines the *Social Justice Ireland* Refundable Tax Credits proposal and a detailed costing is provided in Chapter 6. Chapter 7 examines the impact of the proposed system on low-income employees and their households and on the fairness of the Irish taxation system. Finally, Chapter 8 concludes the study.

2 Why Refundable Tax Credits?

2.1 What are Refundable Tax Credits?

A refundable (or 'non-wasteable') tax credit is one where, in the event that the income of an individual is insufficient to use up all of his or her tax credit, the remaining credit is paid to the individual by means of a cash transfer.

For example, consider the scenario illustrated in Table 2.1. An employee earning a gross annual wage of €10,000 who is taxed at the standard rate of 20 per cent incurs a gross tax liability of €2,000. This gross tax liability is normally reduced by the total value of the employee's tax credits. So, if this employee has total tax credits of €3,000 her tax liability will be reduced to zero and €1,000 worth of tax credits remain unused. Under a system of refundable tax credits, this €1,000 would be paid to the employee as a cash transfer.

Table 2.1 – Refundable tax credits

		Amount
Gross annual income		€10,000
Gross tax liability (20%)	€2,000	
Tax credits	- €3,000	
Net tax liability	- €1,000	€0
Net annual wage		€10,000
Unused tax credit		€1,000
Value of refund		€1,000

2.2 Refundable Tax Credits, Low Income Employees and Fairness

A key problem with the current system of tax credits, which was also inherent in the previous system of tax-free allowances, relates to fairness for low-income employees. Where an individual does not earn enough to fully exploit the total value of all tax credits for which they are eligible, they will not benefit from increases in those credits or reductions in the rate of income tax. Following successive Budgets and social partnership agreements, most low-income employees have been removed from the tax net and, as such, are more likely to be excluded from profiting from budgetary decisions featuring favourable changes in tax credits or rates. This is particularly unfair where national agreements maintain pay restraint for these same employees. Refundable tax credits would see this group stand to benefit where they previously did not.

The following example, illustrated in Table 2.2 considers the case of two employees: Employee A and Employee B. The details are as follows:

- The gross annual income earned by each employee is:
 - Employee A: €25,000
 - Employee B: €10,000
- Both individuals are taxed at a rate of 20 per cent.
- The gross tax liability of each employee is thus:
 - Employee A: €25,000 @ 20% = €5,000
 - Employee B: €10,000 @ 20% = €2,000
- However, before these gross tax liabilities are deducted from the employees' incomes, those tax liabilities are reduced by the value of their tax credits. Both employees are entitled to:
 - €3,000 in tax credits
- The net tax liability of each employee is thus:
 - Employee A: €5,000 – €3,000 = €2,000
 - Employee B: €2,000 – €3,000 = –€1,000
- However, under the current system, Employee B's net tax liability cannot be reduced below zero, and so €1,000 of tax credits are left unused.

Table 2.2 – Two employees' example

		Employee A		Employee B
Gross annual income		€25,000		€10,000
Gross tax liability	€5,000		€2,000	
Tax credits	- €3,000		- €3,000	
Net tax liability	€2,000	- €2,000	- €1,000	- €0
Net annual wage		€23,000		€10,000
Refund due		€0		€1,000

Consider now an increase in the value of the employees' tax credits of €200, illustrated in Table 2.3. We can see that the €200 increase causes a reduction in Employee A's net tax liability and a corresponding increase in his net annual wage. On the other hand, Employee B's position does not change as the additional €200 in tax credits is wasted along with the original €1,000 of unused tax credits. In fact, any increase in tax credits of less than or equal to €2,000 will translate directly into an increase in Employee A's net annual wage but will have no impact on Employee B. However, if the unused tax credits were refundable, Employee B (who would already have been receiving a refund of

€1,000) would experience an increase in that refund of €200, a gain equivalent to that of the higher-income Employee A.

Table 2.3 – Two employees example: increase in tax credits

	Employee A		Employee B	
Gross annual wage		€25,000		€10,000
Gross tax liability	€5,000		€2,000	
Single person's tax credit	- €3,000		- €3,000	
Additional tax credits	- €200		- €200	
Net tax liability	€1,800	- €1,800	- €1,200	- €0
Net annual wage		€23,200		€10,000
Refund due		€0		€1,200

As a further example, consider a decrease of 1 per cent in the standard rate of taxation to 19 per cent, illustrated in Table 2.4. Employee A's gross and net tax liabilities fall by €250, which translates into a €250 increase in his net annual wage. While Employee B's gross tax liability also falls by €250, there is no change in his net liability, which is already zero, and thus his net wage is unaffected. Again, however, if tax credits were refundable, the additional €100 worth of unused tax credits resulting from the lower tax rate would become an increase in his total refund.

Table 2.4 – Two employees example: decrease in rate of taxation

	Employee A		Employee B	
Gross annual wage		€25,000		€10,000
Gross tax liability	€4,750		€1,900	
Single person's tax credit	- €3,000		- €3,000	
Net tax liability	€1,750	- €1,750	- €1,100	- €0
Net annual wage		€23,250		€10,000
Refund due		€0		€1,100

To provide a more general perspective, Figure 2.1 and Figure 2.2 illustrate simple calculations of how much benefit accrues to single earners and married couples at various levels of income from a €200 increase in tax credits under the current system and under a system of refundable tax credits. These calculations, reflecting the analysis in later chapters of this study, are based on 2006 figures as outlined in Table 2.5.

Figure 2.1 – Benefit of a €200 Increase in Tax Credits by Income and Marital Status under the Current System

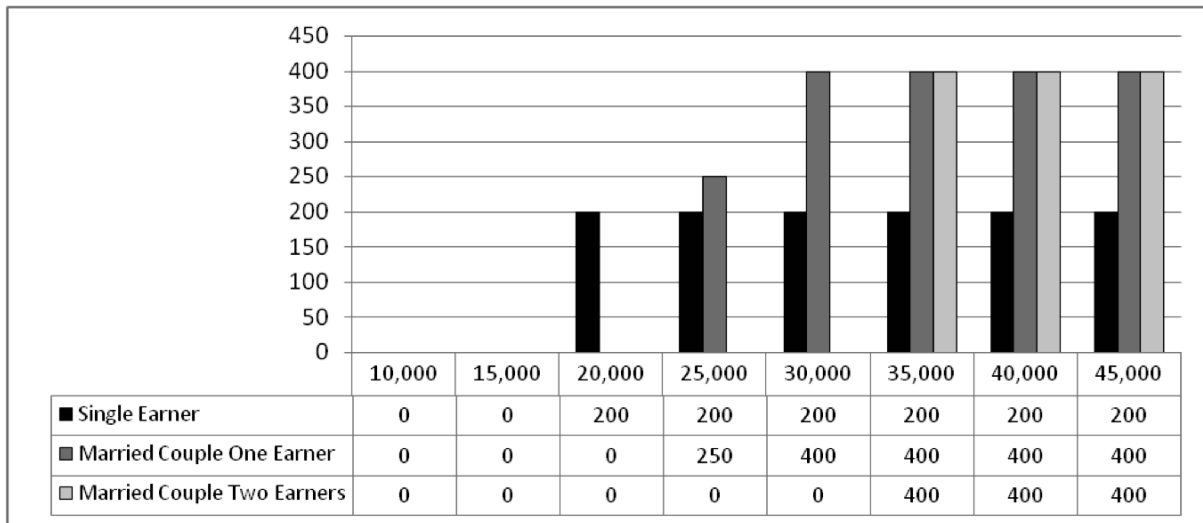


Figure 2.2 – Benefit of a €200 Increase in Tax Credits by Income and Marital Status under a system with Refundable Credits

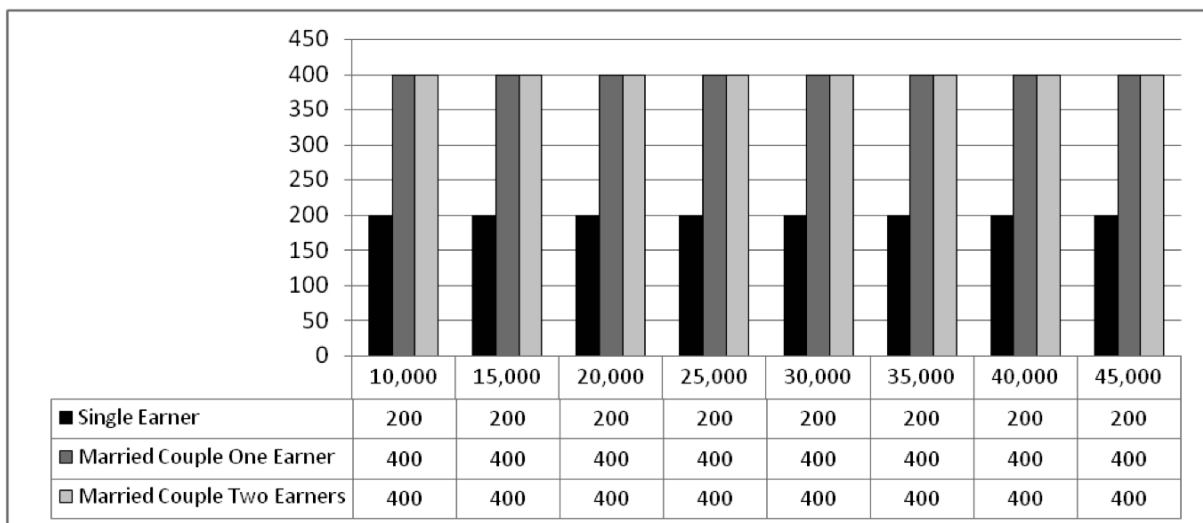


Table 2.5 – Main tax credits and rates in 2006

Description	Amount/Rate
PAYE credit	€1,490
Single person's personal credit	€1,630
Married couple's personal credit	€3,260
Standard rate of taxation	20%
Higher rate of taxation	41%

It is clear from a comparison of Figures 2.1 and 2.2 that the benefits of changes in tax credits are more equal across the income distribution under refundable tax credits than under the current system. Such an improvement in the fairness of the taxation system with regard to low-income employees represents a key benefit of a system of refundable tax credits. However, other benefits also exist. These include:

- Refundable tax credits would provide a straightforward and cost-effective way of improving the net income of employees whose income is the lowest, with no additional administrative burden on the employer.
- A system of refundable tax credits would prove to be a useful mechanism for incentivising employment over welfare reciprocity in that a refundable tax credit confined to working individuals would broaden the gap between social welfare benefits and income derived from paid employment, including self-employment.
- From a long-term perspective, a system of refundable tax credits would provide an avenue to extend the role of the tax system into the areas of income support and equitable income distribution, where such developments are deemed more effective and/or efficient than the current instruments used to achieve these policy goals.

3 Previous Assessments

Refundable tax credits have been considered in detailed studies undertaken in a number of other countries including Canada and the United States. To date no comparable Irish income distribution analysis, using the available detailed household income microdata, has been carried out. However, some limited work in the area of refundable tax credits in an Irish context does exist. The following sections provide a summary description of two existing studies: the first is the 2002 unpublished report of a Government Working Group under the *Programme for Prosperity and Fairness* established to examine the feasibility of a system of refundable tax credits, and the second is an analysis by Ward (2008).¹

3.1 Draft Report of *Programme for Prosperity and Fairness* Working Group

Under the terms of the *Programme for Prosperity and Fairness* (PPF), a working group was established to examine the role which could be played by refundable tax credits in the tax and welfare system. The group examined a range of potential policies related to refundable tax credits, including refunds of the basic personal credit, the delivery of Family Income Supplement through a refundable credit and refundable tax credits for rent relief and childcare. It is their work on a limited system of refundable credits for people on low or irregular incomes that is of specific relevance to this study.

Initially the group considered a universal system of refundable tax credits, in which everyone of employable age would be eligible for a refund, regardless of their tax record. The Revenue Commissioners used tax record data from 1998 to provide an estimate on a post-Budget 2002 basis of €2.0 billion for the cost of making the basic personal, PAYE and Home Carer credits refundable for the 732,600 tax cases on record as well as an estimated 421,000 persons not on the tax record at that time. In rejecting such a universal system, the group cited as its reasons the complexity of its implementation and its potential distortion of the labour market.

¹ A number of other authors and reports have examined the issue in brief, see Rapple (2004), Healy and Reynolds (2004) and Commission on Taxation (2009).

The group next examined the feasibility of a payment made by the then Department of Social and Family Affairs (now Department of Social Protection) to those on low or irregular incomes equalling the full value of their tax credits. The group suggested that such a system may overcome some of the difficulties outlined in respect of the previously considered universal system. Tax credits which “could be paid to eligible persons under the arrangement as appropriate,” are listed in Table 3.1 along with their values in 2002.

Table 3.1 - Tax credits in 2002 as considered for refund by the PPF Working Group

Description	Amount/Rate
Single person	€1,520
Married couple	€3,040
Lone parent	€1,520
Widowed parent	€2,600 to €600
PAYE credit	€660
Incapacitated child	€500
Blind person	€800
Home carer credit	€770
Widow/widower	€300
Dependent relative	€60

The cost of this scheme was estimated at €1.3 billion on a 2002 basis, which relates to the 732,600 cases on the tax record that do not absorb the full value of their tax credits. Note that it is not precisely clear from the PPF draft report whether this estimate incorporates all or just some of the credits listed in Table 3.1. While the group highlighted in its report the potential usefulness of eligibility criteria such as an age minimum² and/or hours-worked requirements, these are not implemented in the calculation of the €1.3 billion estimate.

An update to the €1.3 billion costing was presented by the Department of Finance and the Revenue Commissioners to the Oireachtas Committee on Social and Family Affairs in February 2009. This estimate for a limited system of refundable tax credit puts the total cost at €3.0 billion (Parliamentary Debates, 2009) on a 2009 basis (using data from 2005). Importantly,

² Beyond the requirement that individuals be “of employable age.”

Finance/Revenue clarified to the Committee that this system of refundable tax credits is only limited in the sense that it is confined to “anyone on the tax record, for any reason, once they are working any hours, at any age.”

Citing the scale and cost of such a programme, disincentive effects on labour supply, and difficulties for low-income employees including ensuring horizontal equity, the PPF working group did not recommend refundable tax credits as a priority. However, due to disagreement on issues including the extent to which the potential of refundable tax credits could be considered to have been fully and satisfactorily examined, the group’s report was not published.

3.2 Ward (2008)

Ward (2008) provided a survey of basic income research in Ireland over the past three decades. Of particular relevance to this study is an estimate of the costs to the exchequer of making tax credits refundable using data relating to 2004 from the *Statistical Report of the Revenue Commissioners for 2006* (Revenue Commissioners, 2007).

The costs estimated by Ward (2008) relate to refunds of unused Personal and PAYE tax credits to taxpayers over the age of 21 years and are calculated on the following basis:

- The combined Personal and PAYE credits in 2004 were as outlined in Table 3.2.
- Revenue Commissioners’ statistics are used to determine the number of tax cases within various income bands, as well as the amount of tax credits both available and used within those income bands.
- Employees under the age of 21 are excluded using assumptions regarding the proportion of the 15-20 year old age group that are working, their marital status and incomes, and the proportion thereof included in the Revenue Commissioners’ statistics.
- It is assumed that the take-up rate for refundable credits will be 50 per cent of cases, giving rise to the refund of 60 per cent of all unused tax credits.

Using this approach, Ward (2008) estimates the total cost to the exchequer of a system of refundable tax credits to be €416 million per annum.

Table 3.2 – Combined Personal and PAYE credits in 2004 as per Ward (2008)

Category	Amount
Single person	€2,560
Married couple – one earner	€4,080
Married couple – two earners	€5,120
Widow(er)	€2,860

4 Data and Methodology

4.1 EU-SILC

The data employed in this study come from the 2006 EU Survey on Income and Living Conditions (EU-SILC), provided by the Central Statistics Office (CSO) via the Irish Social Sciences Data Archive (ISSDA) at University College Dublin. EU-SILC, or SILC, is a European initiative focused on gathering data and generating indicators on income, poverty, social exclusion and other living conditions. To this end, the CSO collects information on individuals' direct incomes, social transfers, and tax and social insurance contributions in extensive detail, which makes EU-SILC a particularly useful instrument for the purposes of analysing the effects of national policies anticipated to affect incomes and the income distribution.

The 2006 survey achieved a sample size of 14,634 individuals across 5,386 households. The anonymised dataset provided by the CSO via the ISSDA and used in this study includes all of these individuals and households. Design weights calculated by the CSO compensate for the probability with which individual households were selected, while cross-sectional weights ensure that the sample, when weighted, is statistically representative of the Irish population with regard to age, sex, region and household composition. Again, this makes the dataset especially useful for the purposes of analysing a policy that affects the distribution of income such as refundable tax credits.

At the time of the initiation of this study, the 2006 data was the most recent microdata available from the CSO/ISSDA. However, as this is an annual survey the findings may easily be updated using data for subsequent years as they are forthcoming. It should also be noted that the most recent calculations carried out by the Department of Finance rely on 2005 data from the Revenue Commissioners. EU-SILC has an advantage over this data in that it is representative of the total population, rather than solely those who are already on the tax record.

Furthermore, using 2006 data has an additional, incidental advantage. EU-SILC data provided in non-census years rely on projections of demographic changes in order to develop the cross-sectional

weights mentioned above. As 2006 was a census year, this removes the need for such projections, reinforcing the statistical representativeness of the 2006 sample.

While EU-SILC is an exceptionally useful tool, limitations arise during the analysis. Typically this involves an inability to determine from the available ISSDA dataset certain information about individuals that is important to assessing the proposal. For example, it is impossible to determine from the data whether some individuals are above or below the age of 23 if they are classified into the age category “16-25 years of age”. Similarly, the dataset does not disclose for which tax credits individuals are eligible. However, where such limitations arise they are overcome using reasonable—and fully disclosed—assumptions and as such their effects on the findings are expected to be minor. In any case, sensitivity analyses are provided in the appendix in order to demonstrate the effects of changes in a number of these assumptions.

4.2 Methodology

The methodology applied here in utilising EU-SILC as an instrument for estimating the costs of a refundable tax credit policy, or indeed any redistributive policy, is straightforward. Each individual in the dataset can be identified as either eligible or ineligible for a refund based on the variables provided in the dataset (for example, income, marital status, children, employment status, etc.). The amounts of those refunds to each eligible individual can also either be calculated or approximated using the information supplied by EU-SILC.

Once a variable describing the amount to be paid to each individual is created (zero in the case of the ineligible), estimating the total cost is simply a matter of applying the individual and household weights supplied by the CSO and determining the frequency of each payment amount across the entire population. That is, how many individuals in Ireland would receive zero euro, or one euro, or two euro, and so on up to the maximum payment received. This weighted sum of all payments represents the cost to the exchequer.

5 *Social Justice Ireland's Refundable Tax Credits Proposal*

5.1 Proposed Design of Refundable Tax Credits System

This study proposes a refundable tax credit system of a defined or limited, rather than universal, nature. The primary features of this proposal are as follows:

1. Refunds apply to the unused portions of the Personal and PAYE tax credits *only*.
2. A set of eligibility criteria must be satisfied **in the relevant year** for an individual to be considered for a refund for that year. These are as follows:
 - a. Individuals **must** have unused personal and/or PAYE tax credits (by definition).
 - b. Individuals **must** have been in paid employment.
 - c. Individuals **must** be at least 23 years of age.
 - d. Individuals **must** have earned a minimum annual *income from employment* of €4,000.
 - e. Individuals **must** have accrued a minimum of 40 PRSI weeks.
 - f. Individuals **must not** have earned an annual *total income* greater than €15,600.
 - g. Married couples **must not** have earned a combined annual *total income* greater than €31,200.
3. Payments would be made at the end of the tax year.

The following subsections provide the rationale for the main criteria outlined in point 2 above.

5.1.1 Employment, Minimum Income and PRSI Requirements

For the purposes of this study individuals are considered to have been in employment if they register any income from employment (including self-employment) during the year.³

This employment requirement in (b) is reinforced by the criteria outlined in (d) and (e). The minimum annual employment income of €4,000 mentioned in (d) corresponds to an annual income from 10 hours of work per week at the 2006 minimum wage of €7.65. Conditioning refunds on an

³ While the EU-SILC dataset does provide a description of the 'principal economic status' (PES) of each of its respondents, using this variable would exclude those listed with a principal economic status other than 'at work' (e.g. studying or unemployed) even if they spend a significant amount of time at work during the year. Accordingly, PES is ignored for the purposes of identifying those with employment, and the presence of employment income is used instead.

individual earning this amount during the tax year in question ensures that only those significantly attached to the labour force receive a refund, rather than those who work extremely sporadically throughout the year.

An alternative to criterion (d) is also considered later in the study. Rather than implementing an annualised €4,000 minimum income from employment, a weekly system of an average income of €76.50 *per week of employment* could also be applied. A weekly system would have the advantage of providing refundable credits to low-income individuals working less than the full year. On the other hand, an annualised income has the advantage of being much simpler to administer. The analysis proceeds using the simpler annualised system as the ‘base case,’ but a weekly system is also costed as part of the sensitivity analysis outlined in appendix 10.4.

Furthermore, requiring the accrual of 40 PRSI weeks’ rules out the possibility of individuals who are highly-paid short-term employees, and therefore not serious labour force participants, from qualifying for a refund. This would be particularly relevant in the case of a weekly system as described above. However, it should be noted that data on accumulated PRSI weeks is not available in EU-SILC. Therefore, the analysis cannot take this criterion into account, but it is nevertheless mentioned here as a recommended feature of this proposal. The exclusion of individuals failing to accumulate 40 PRSI weeks during the year would reduce the total estimated cost of the proposal, but because many of these individuals would be expected to have been deemed ineligible on other grounds, that reduction is unlikely to be large.

5.1.2 Minimum Age

Individuals who are under the age of 23 are excluded under this proposal due to the potential distortionary effect of refundable credits on young people’s incentives to continue in education and training. While 23 represents the base case for the subsequent analyses, estimates of costs using a number of different age minima are presented in appendix 10.4.

5.1.3 Income Ceiling

As the role of a refundable tax credit system in ensuring fairness for low-income employees is under consideration in this study, it is necessary to ensure that such a system would not unintentionally redistribute funds to high income earners. This is most likely to happen where individuals use tax avoidance measures that give rise to significant unused credits despite a large income. The €15,600 total income ceiling selected for this proposal is based on the notion that having earned €15,600 in incomes that are subject to income tax, a single person would have exploited the full value of their Personal and PAYE tax credits in 2006. This amount thus represents a fair level at which to exclude individuals earning incomes that are not (or only partially) subject to tax.

The equivalent income ceiling for a married couple is twice this amount, or €31,200. Therefore, anyone in a marriage where the combined annual income of both spouses exceeds €31,200 will not be eligible for a refund.

5.2 Administration

The proposed system of refundable tax credits should be relatively easy to implement and administer as the infrastructure necessary to identify eligibility and pay refunds already exists.

Under the proposal, claims for Refundable Tax Credits would be made retrospectively after the end of the year, when full information is available regarding the person's income for the previous year. Claims would be made either on-line or on paper in the same way as other claims for tax reliefs and refunds, such as for medical expenses incurred or rent paid. Refunds of the tax credit would be paid by the Revenue Commissioners directly to the individual in the same way as other tax refunds.

Note that when referring to costs in the course of this study, these are taken to mean the direct costs of refunds only. In reality, the total costs will include some expenditure on administration of the scheme. However, it is expected that administration costs of the scheme outlined above would be small given that similar payment mechanisms are already in place.

5.3 Eligibility

In order to illustrate the contrast between eligibility under the *Social Justice Ireland* proposal and under a more universal scheme, the following describes the total number of individuals who would qualify to receive refunds under this proposal based on analysis of the EU-SILC dataset. Figure 5.1 shows the total population (4,253,340) and the remaining eligible population following the application of each of the above-mentioned criteria. Table 5.1 provides the accompanying data.

The first two exclusions in the chart (columns two and three) reflect the fact that individuals must have residual unused tax credits in order to qualify for a refund. Where individuals or their spouses have paid tax during the year, it must be the case that these individuals have used up all of their tax credits⁴. Excluding the 1,618,403 people who paid tax, and the additional 270,829 people who did not pay tax but whose spouses did pay tax, leaves 2,364,108 eligible individuals.

Of the remaining cohort, a further 1,978,097 individuals did not register an income from either employment or self-employment during the year and thus would also be excluded from receiving a refund of the unused portion of their tax credits. A total of 386,011 individuals remain eligible following the application of this criterion.

For the age requirement above, it should be noted that the age categories used in the available EU-SILC database do not allow for the identification of those people above and below the age of 23. For the purposes of this figure, those under the age of 25 are excluded, implying that the 216,865 remaining eligible individuals represents a slight underestimate of the size of the actual eligible population.

The application of the €4,000 income floor reduces the eligible cohort by 34,626 to 182,239. The ceiling on total income (from all sources) of €15,600 for individuals and €31,200 for married couples results in the disqualification of 63,663 and 25,421 individuals, respectively, leaving a final eligible population of 93,155.

⁴ The exception here being people who are paying emergency tax, but it is expected that these people would not affect the calculation to any great extent.

Figure 5.1 – Cumulative Effect of Proposed Criteria on Size of Eligible Population

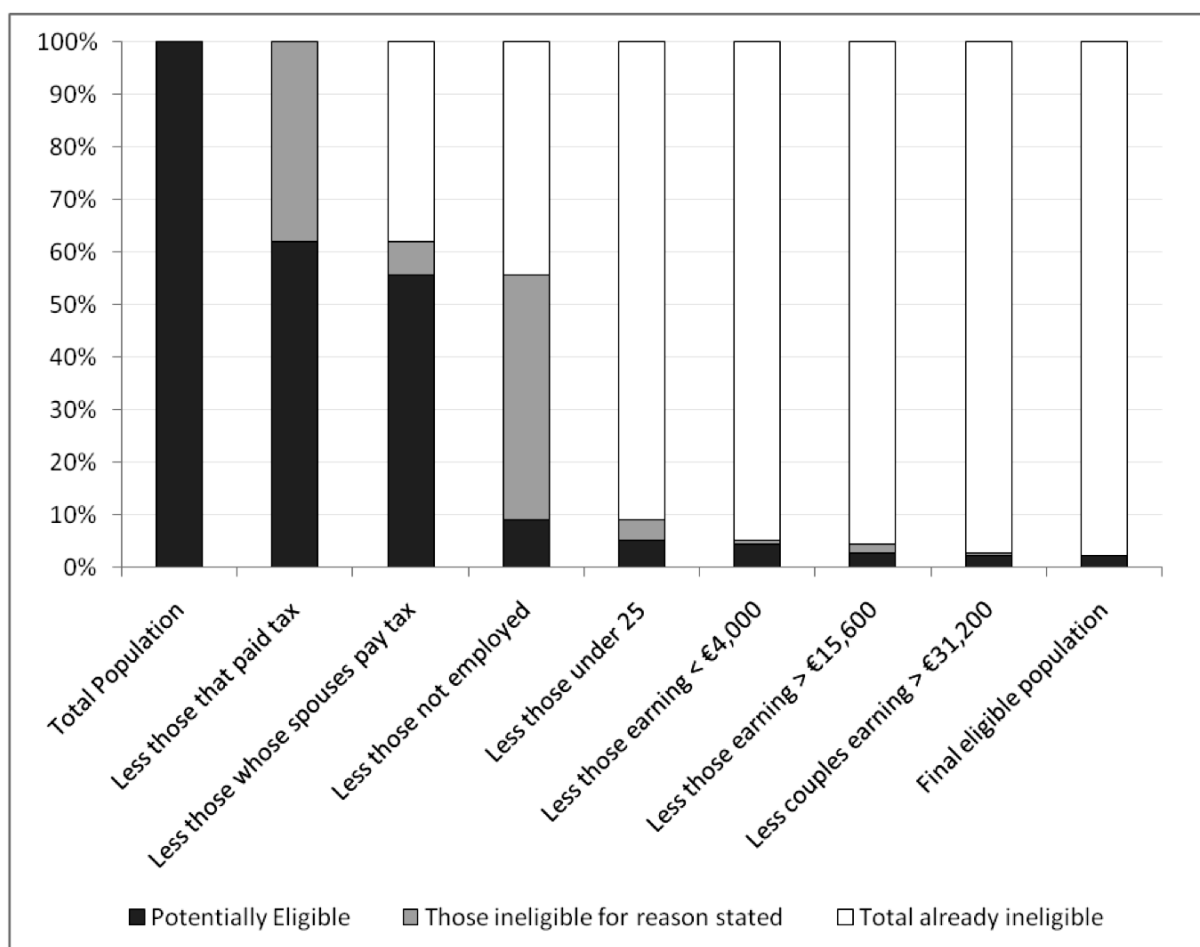


Table 5.1 – Cumulative Effect of Proposed Criteria on Size of Eligible Population

	Potentially Eligible	Those ineligible for reason stated	Total already ineligible
Total Population	4,253,340	0	0
Less those that paid tax	2,634,937	1,618,403	0
Less those whose spouses pay tax	2,364,108	270,829	1,618,403
Less those not employed	386,011	1,978,097	1,889,232
Less those under 25	216,865	169,146	3,867,329
Less those earning < €4,000	182,239	34,626	4,036,475
Less those earning > €15,600	118,576	63,663	4,071,101
Less couples earning > €31,200	93,155	25,421	4,134,764

6 Costing the *Social Justice Ireland* Proposal

6.1 Overview

Having identified within the EU-SILC dataset the individuals who would be eligible for a refund under the system of refundable tax credits proposed in this study, it is possible to determine the approximate cost of the introduction of such a system. Generally speaking, this involves taking the various features of the proposal and applying them to the EU-SILC dataset in a manner that most closely reflects reality. The main steps involved in this are:

- [i] **estimate the tax credits** available for refund to individuals and married couples in the dataset, based on whether their circumstances satisfy the criteria outlined in the proposal;
- [ii] **estimate the gross PAYE liability** incurred by individuals and married couples using available information on their PAYE incomes;
- [iii] **estimate refunds** as [i] less [ii], where this value is positive; and
- [iv] **apply individual and household weights** to the calculated refunds in order to accumulate them across the population, thereby estimating the total cost of the proposal,

6.2 Estimating tax credits

6.2.1 Tax Credits in 2006

Table 6.1 provides an outline of the various tax credits available to individuals based on their PAYE and marital status, together with the amounts of those credits in 2006. These are the credits that are considered for refund under the system of refundable tax credits proposed in this study.

As outlined in Section 6.1, the first step here is to classify each individual and married couple in the population in terms of their eligibility for each of the credits outlined in Table 6.1. The following subsections describe in detail the approach used to determine — or, where necessary, estimate — which credits each individual and married couple are eligible to receive. A summary of the main features of this approach is provided in Appendix 10.1.

Table 6.1 Tax Credits and Amounts in 2006

Tax Credit	Amount
PAYE Credit	€1,490
Personal Credits	
Single Person	€1,630
Married Couple	€3,260
Personal Credits for Widowed Persons:	
without Dependent Children	€2,130
with Dependent Child – 1 year bereaved	€3,100
with Dependent Child – 2 years bereaved	€2,600
with Dependent Child – 3 years bereaved	€2,100
with Dependent Child – 4 years bereaved	€1,600
with Dependent Child – 5 years bereaved	€1,100

6.2.2 Individual PAYE Credits

The estimation of the PAYE credit due to each individual is relatively straightforward. The EU-SILC database breaks down individuals' incomes according to income type; documentation on this is available from the CSO (2006) in their EU-SILC codebook. This study proceeds by classifying each of these income types as either subject to or exempt from PAYE taxation. This breakdown and classification of incomes is displayed in Table 6.2.

Individuals in the dataset who register any income that is subject to PAYE income tax are treated as being entitled to the PAYE credit, which in 2006 stood at €1,490.

Table 6.2 EU-SILC Breakdown of Incomes with PAYE/non-PAYE Status

Category of Income				PAYE income ¹	
Total income	Direct income	Employment income	Employee cash income	Y	
			Employee non-cash income	Y	
		Self-employment income			Y ²
		Other direct income	Investment income		N
			Income from rental of property and land		N
			Private pensions		Y
			Goods produced for own consumption		N
			Inter-household transfers received		N
			Income from persons under age 16		Y
		Employer's social insurance contributions			N
	Social transfers	Unemployment benefits			Y
		Old-age benefits	Non-private occupational pension		Y
			Social welfare benefits		Y
		Family/children related allowances			N
		Housing allowances			N
		Other social transfers	Sickness benefits		N
			Disability benefits		N
			Education-related allowances		N
			Social exclusion allowances		N
			Survivor's benefits		Y

Notes: The income described in each cell of this table is equal in value to the sum of the incomes in each cell to its immediate right. For example, "employment income" equals the sum of "employee cash income" and "employee non-cash income."

- 1 It should be noted that some categories of income can include both PAYE *and* non-PAYE income; in these cases the category of income is classified according to the typical nature of that income with Y indicating that it is classified as PAYE and N indicating otherwise.
- 2 Because it is recommended that self-employed people should benefit from a system of refundable tax credits to the same degree as employees, income from self-employment has been included as an income considered for the satisfaction of the minimum employment income eligibility criterion.

6.2.3 Individual Personal Credits

The amount of an individual's personal credit depends in the first instance on their marital status. This status is provided explicitly in the dataset. Individuals recorded as single, divorced or separated are treated as having received a single person's credit, which amounted to €1,630 in 2006.

The personal credit assigned by the Revenue Commissioners to widowed persons' varies depending on whether that person has dependent children⁵. Where a widow(er) does not have dependent

⁵ Because the EU-SILC dataset does not detail how many child dependents (as defined for the purposes of taxation) an individual is responsible for, child dependants are defined for the purposes of this study as people under the age of 16 or students under the age of 25.

children, they are treated as having received a personal credit of €2,130, corresponding to the value of the credit in 2006. The case of widowed parents is more complex, in that the value of the personal credit ranged in 2006 from €3,100 to €1,100 depending on the recency of their bereavement. Because this detail is unavailable in the EU-SILC dataset, widowed parents are allocated a personal credit of €1,630, equal in value to the 2006 single person's credit.⁶

It is expected that the effect of this assumption on the costing of the proposal is small, given that the total number of widowed persons living with dependants is just 0.6 per cent of the entire population. This assumption affects just 348, or 0.37 per cent, of the 93,155 individuals deemed eligible in Section 5.3.

6.2.4 Treatment of Married Couples

An important issue regarding married persons in this analysis is the identification of couples within the dataset. Because joint assessment enables an individual to pool certain tax credits with their spouse, it is necessary to identify who in the dataset is married to whom in order to approximate the total amount of credits at their disposal (and thus estimate the refund that would accrue to them under the proposed system of refunds). However, EU-SILC indicates only that an individual is married, not to whom.

The most logical approach to use when trying to identify these married couples is to assume that where a household contains two married persons – one male and one female – these constitute a married couple. Of an estimated married population of 1,587,000 represented by the EU-SILC dataset, 97 per cent of individuals recorded as 'married' fall into this scenario (i.e. living with one other 'married' person of the opposite sex). Such couples in the dataset are allocated a personal credit of €3,260, and a PAYE credit of €1,490 for each spouse earning a PAYE income.

Three per cent of the married population represented by the EU-SILC dataset do not live in a household with one other married person of the opposite sex and thus it is difficult to estimate who

⁶ Note that while it may seem counter-intuitive that the proposal allocates a higher refundable personal credit to widowed persons without dependants than widowed parents, this arises from the fact that widowed parents also receive the One Parent Family Credit, whose refund is not being considered under this proposal.

their respective spouses are (even if that spouse is indeed included in the dataset). To clarify, these individuals are married, but either:

- (a) do not share a household with another married individual,
- (b) share a household with one or more married individual(s) that are of the same sex, or
- (c) share a household with two or more other married individuals.

In the case of (a), this implies the individual's spouse probably lives in another household (which may or may not have been sampled). Where (b) is the case, this likely describes a household with two (or more) individuals whose spouses live elsewhere. Finally, case (c) most likely reflects a household containing some combination of married couples and/or individuals whose spouses live elsewhere. Case (c) is the only case where married persons may be living with their spouses but there remains no reasonable way to identify that couple from the data available.

For the purposes of the calculations in this study it is necessary to make some form of assumption regarding those living in any of the three cases listed above, as it is impossible to accurately determine who their spouse is in order to determine the credits available to them and the extent to which they have been used up. The assumptions taken are designed to allocate a maximum feasible refund to these cases and thereby avoid underestimating the total exchequer cost relating to these couples. As such, these individuals are allocated the best conceivable tax credits available to a married couple in 2006, i.e.

- €3,260 in personal credits,
- an unconditional €1,490 PAYE credit relating to their unidentified spouse, and
- a further €1,490 in PAYE credits if the individual has PAYE income of their own.

The overall impact of this assumption on the final costing is expected to be small because these cases represent only 3 per cent of all married persons in the population, and only 1.1 per cent of the population overall. However, an implication of the assumption is that it will result in a number of recipients assumed to receive a refund in excess of €4,000 when it is unlikely in reality that their refund would ever reach such a level – the refund is more likely to be shared evenly between spouses and the individual refund would be of the order of €2,000 (see Table 7.1).

6.3 Calculating Gross PAYE Liability

The next step is to estimate the gross PAYE liability – i.e. the amount of income tax incurred before the deduction of income tax credits – of each individual and couple. This gross PAYE liability is calculated as 20 per cent of an individual’s total PAYE-income (i.e. the sum of all incomes listed as ‘Y’ in Table 6.2) or of a married couple’s combined PAYE-income. It is unnecessary to consider the higher tax rate because the income limit ensures that under no circumstance is any individual or married couple simultaneously eligible for a refund and earning sufficient income to be taxed at the higher rate.

6.4 Estimating Refunds

The next step in costing this proposal involves determining the refunds that would be due to each individual and married couple under the proposed system of refundable tax credits, using the estimates of their tax credits and gross tax liabilities described in Sections 6.2 and 6.3 above. Subsections 6.4.1 through to 6.4.3 describe how these refunds are calculated for individuals and married couples with one or two earners.

6.4.1 Individuals

For individuals, the appropriate refund is simply the remainder of tax credits once their gross PAYE liability has been deducted, where this value is positive. Some sample calculations are provided in Table 6.3.

Table 6.3 – Sample Refund Calculation for Individuals

	Single Person				
Personal Credit	€1,630				
PAYE Credit	€1,490				
PAYE Income	€2,000 ¹	€5,000 ²	€7,000	€10,000	€16,000 ³
Gross Tax Liability	€400	€1,000	€1,400	€2,000	€3,200
Individual Credits	€3,120	€3,120	€3,120	€3,120	€3,120
Refundable Credits	€0	€3,120	€3,120	€3,120	€0
Refund	€0	€2,120	€1,720	€1,120	€0

1 This person is excluded from a refund because they do not earn a minimum annual employment income of €4,000

2 Note: a person in this scenario will only be refunded if at least €4,000 of this income arises from employment.

3 An individual earning a total income (from all sources) of more than €15,600 is excluded from a refund.

6.4.2 Married Couple, One Earner

As above, the gross tax liability of a single-earner married couple is calculated as 20 per cent of the PAYE income arising from the single earner in these couples. The credits from which to subtract this liability typically come to €4,750⁷, with the exception of cases where the earning spouse has income from employment of less than €4,000 or a total income in excess of €31,200, in which instance the couple is not eligible for any refund. See Table 6.4 for sample calculations.

Table 6.4 – Sample Calculations for Single Income Married Couples

	Married Couple, One Earner				
Personal Credit	€1,630/€1,630				
PAYE Credit	€1,490/€0				
PAYE Income	€2,000/€0	€5,000 ¹ /€0	€7,000/€0	€10,000/€0	€16,000 ² /€0
Gross Tax Liability	€400/€0	€1,000/€0	€1,400/€0	€2,000/€0	€3,200/€0
Individual Credits	€3,120/€1,630	€3,120/€1,630	€3,120/€1,630	€3,120/€1,630	€3,120/€1,630
Refundable Credits	€0	€4,750	€4,750	€4,750	€4,750
Refund	€0	€3,750	€3,350	€2,750	€1,550

1 If at least €4,000 of this income did not arise from employment, this spouse's credit would not be refundable.

2 Note that the combined income limit for married couples is €31,200.

6.4.3 Married Couple, Two Earners

The gross PAYE liability of a dual-income married couple is estimated much like their single-income counterparts, at 20 per cent of both spouses' combined PAYE income. Also similar is the determination of tax credits: where at least one spouse earns in excess of €4,000 in employment income and both spouses do not earn in excess of €31,200 in total income, the €3,260 of combined personal tax credits are taken into consideration for a refund. In addition, for each spouse earning in excess of €4,000 in PAYE income, a PAYE credit of €1,490 is added to these refundable credits. Couples in the dataset are allocated a refund of the difference between the resulting credits and liability. See Table 6.5 for some sample calculations.

⁷ i.e. the sum of two personal credits of €1,630 and one PAYE credit of €1,490

Table 6.5 - Sample Calculations for Dual Income Married Couples

	Married Couple, Two Earners				
Personal Credit	€1,630/€1,630				
PAYE Credit	€1,490/€1,490				
PAYE Income	€2,000/€2,000 ¹	€7,000 ² /€2,000	€7,000/€7,000	€16,000/€7,000	€25,000/€2,000
Gross Tax Liability	€400/€400	€1,400/€400	€1,400/€1,400	€3,200/€1,400	€5,000/€1,400
Individual Credits	€3,120/€3,120	€3,120/€3,120	€3,120/€3,120	€3,120/€3,120	€3,120/€3,120
Refundable Credits	€0	€4,750	€6,240	€6,240	€4,750
Refund	€0	€2,950	€3,440	€1,640	€0

1 PAYE tax credits are not refunded where they are those of a spouse earning less than €4,000 in employment income.

2 If at least €4,000 of this income did not arise from employment, this spouse's credit would not be refundable.

6.5 Final Costing of the Proposal

To conclude this chapter, we bring together each of the elements outlined above to calculate the overall cost of the *Social Justice Ireland* refundable tax credits proposal. Given the structure of the available EU-SILC microdata, this step comprises three stages:

1. The cost of implementing a system of refundable tax credits as proposed above for those aged 25 years or older is estimated.
2. The cost of implementing a system of refundable tax credits for those aged 23 and 24 years is estimated.
3. The results for stages 1 and 2 are combined to provide the overall costing.

6.5.1 Final Costing – Part One (costs for those aged 25+)

Once each individual and married couple in the dataset of at least 25 years of age has been assigned a refund and ineligible cases are excluded, the methodology described in Section 6.4 can be applied in order to estimate the cost of refundable tax credits to this cohort. As a reminder, individual and household weights can be applied in order to make the sample representative of the Irish population and thereby estimate the frequency with which each refund amount occurs in the population—that is, how many individuals are refunded one euro, or two euro, and so on up to the maximum refund. The cumulative total of these payments equal their total direct cost. To illustrate the approach, the table describing the frequencies of different ranges of payment amounts for those aged 25 and over is provided in Appendix 10.2. Overall, the cost of providing refunds to the 25 years and older cohort is calculated as €127,849,149.

6.5.2 Final Costing – Part Two (costs for those aged 23 and 24 years)

One of the limitations of the available EU-SILC dataset is that its age variable is only available in categories (16-24 years etc) rather than in individual years. Therefore, a challenge arises in calculating the costs for those aged 23 and 24 years as they form part of the 16-24 year age category and it is not possible to easily isolate people of this age for the purpose of the calculations. Therefore, the cost of the proposal must be estimated indirectly for those in this group. Appendix 10.3 outlines the precise steps involved in this calculation which essentially involves calculating the cost of the proposal for the entire 16-24 years age cohort and then appropriately identifying the costs for those aged 23 and 24. Following these steps, the cost for those aged 23 and 24 years has been calculated as €12,202,674.

6.5.3 Overall costing of the *Social Justice Ireland* Proposal

Table 6.7 combines the aforementioned estimates. Thus, the total cost of refunding unused tax credits to individuals satisfying all of the criteria mentioned in this proposal is estimated at €140,051,823⁸.

Table 6.6 – Cost of the *Social Justice Ireland* Refundable Tax Credits Proposal

Details	Amount
Total cost relating to 25+ year-olds	€127,849,149
Total cost relating to 23-24 year-olds	€12,202,674
Final estimated cost of refundable tax credits	€140,051,823

⁸ A series of sensitivity tests, outlined in appendix 10.4, underscore the robustness of this estimate and outline how the proposal's estimated cost would change if certain assumptions, age minima and income floors were altered.

7 Impact of the Refundable Tax Credits Proposal

7.1 Overview

This chapter considers the impact of the *Social Justice Ireland* refundable tax credits proposal. This is considered over four sections. The first three examine the impact on low income employees and households under the headings of:

- Scale and distribution of the refunds,
- Impact on the risk of poverty measure, and
- Impact on individuals with incomes near the poverty line

The chapter's fourth section takes a structural approach and considers the:

- Impact on the fairness of the Irish taxation system.

Overall, the analysis finds that:

- It is only low income employees (or low income married couples) earning between €4,000 and €15,600 (or €31,200) that will receive refunds.
- Almost 113,300 low income individuals directly benefit from a refund and will see their disposable income increase as a result of the proposal.
- The majority of the refunds are valued at under €2,400 per annum, or €46 per week with the most common value being individuals receiving a refund of between €800 to €1,000 per annum (or €15 to €19 per week).
- Considering that the individuals receiving these payments have incomes of less than €15,600 (or €299 per week), such payments are of significance to them.
- Almost 40 per cent of refunds flow to low-income working poor households who live below the poverty line.

- A total of 91,056 individuals (men, women and children) below the poverty threshold benefit either directly (through a payment to themselves) or indirectly (through a payment to their household) from a refundable tax credit.
- Of the 91,056 individuals living below the poverty line that benefit from refunds, most (over 71 per cent) receive refunds of more than €10 per week with 32 per cent receiving in excess of €20 per week.
- A total of 148,863 individuals (men, women and children) above the poverty line benefit from refundable tax credits either directly (through a payment to themselves) or indirectly (through a payment to their household). Most of these beneficiaries have income less than €120 per week above the poverty line.
- Overall, almost 240,000 individuals (91,056 + 148,863) living in low-income households would experience an increase in income as a result of the introduction of refundable tax credits, either directly (through a refund to themselves) or indirectly (through a payment to their household).
- Once adopted, a system of refundable tax credits as proposed in this study will result in all future changes in tax credits benefitting all employees in Irish society equally. Such a reform would mark a significant step in the direction of building a fairer taxation system and represent a fairer way for Irish society to allocate its resources.

7.2 Scale and Distribution of the Refunds

A particular advantage of the EU-SILC dataset is that it is representative of the entire Irish population, making it possible to examine the distributional effects of a policy measure like refundable tax credits. Over this and the next two sections, the dataset is used to model the anticipated magnitude and distribution of the refunds across the Irish population and for low-income employees/individuals in particular.

Given the aforementioned composition of the available EU-SILC dataset, the analysis in these sections is confined to examining the distributional effects for all those aged 25 and over in the Irish

population.⁹ Thus the analysis examines refunds totalling €128 million rather than the €140 million outlined in the base case (see Table 6.6).

Given the structure of the proposal, it is only low income employees (or low income married couples) earning between €4,000 and €15,600 (or €31,200) that will receive refunds. Figure 7.1 summarises the impact of the proposal on these individuals and Table 7.1 provides the corresponding numbers. Overall, almost 113,300 low income individuals benefit from a refund and will see their disposable income increase as a result of the proposal. This figure is higher than the 93,155 eligible individuals identified in section 5.3 as among the beneficiaries are married low income employees whose refund benefits both themselves and their spouse.

As both the table and graph show, the majority of the refunds are valued at under €2,400 per annum, or €46 per week, with the most common category being individuals receiving a refund of between €800 to €1,000 per annum (or €15 to €19 per week). Considering that the individuals receiving these payments have incomes of less than €15,600 (or €299 per week), such payments are of significance to them.

⁹ It is possible to examine the impact for all those aged 16+. However, the age group 25+ is chosen as it is more representative of the population subgroup (all those aged 23+) identified as eligible for the proposal.

Figure 7.1 – Distribution of Refunds

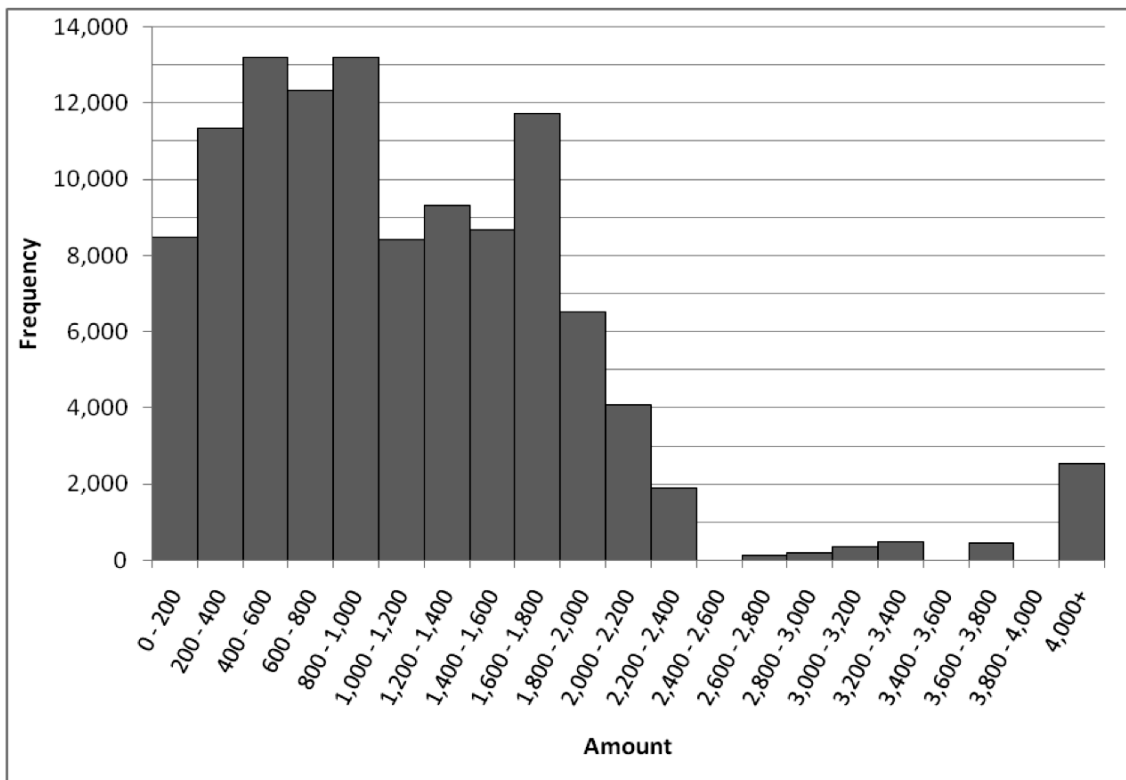


Table 7.1 – Distribution of Refunds

Amount of Refund	No. of Recipients
€0.01 - €200.00	8,465
€200.01 - €400.00	11,342
€400.01 - €600.00	13,187
€600.01 - €800.00	12,324
€800.01 - €1,000.00	13,210
€1,000.01 - €1,200.00	8,428
€1,200.01 - €1,400.00	9,320
€1,400.01 - €1,600.00	8,679
€1,600.01 - €1,800.00	11,735
€1,800.01 - €2,000.00	6,533
€2,000.01 - €2,200.00	4,090
€2,200.01 - €2,400.00	1,897
€2,400.01 - €2,600.00	0
€2,600.01 - €2,800.00	123
€2,800.01 - €3,000.00	183
€3,000.01 - €3,200.00	350
€3,200.01 - €3,400.00	469
€3,400.01 - €3,600.00	0
€3,600.01 - €3,800.00	438
€3,800.01 - €4,000.00	0
€4,000.01+*	2,526
Total	113,299

Notes: A more detailed version of this table is available in appendix 10.5.

* Refunds of €4,000+ are due to assumed maximum possible refunds for certain married couples which are unlikely in reality (see section 6.2.4)

7.3 Impact on the Risk of Poverty Measure

The aforementioned figures outline the refunds to individuals as a result of the refundable tax credit proposal. However, an assessment of the values of payments to individuals abstracts from the fact that they belong to households and that the benefits of such payments will be divided out to benefit all members of those individuals' households. To capture this effect, sections 7.2 and 7.3, consider the impact on poverty levels using the national equivalised income measure and the EU poverty line set at 60 per cent of median income¹⁰.

Despite Ireland's sustained poverty problem, it should be remembered that the *Social Justice Ireland* refundable tax credit proposal is aimed at low income employees rather than at all those in poverty. Because eligible individuals include those earning at least €4,000 in employment income, but less than €15,600 in total income, these refunds do not accrue solely to individuals under the poverty threshold (approximately €10,500 in 2006).

One issue arising in the production of 'post-refund' estimates of the poverty rate is that the proposal gives rise to cash-flows accruing to households in the middle of the income distribution, which causes the population's median income to shift upward. Because the poverty threshold is measured as 60 per cent of the median, any shift in median income will be mirrored by a shift in the poverty threshold in the same direction. Consequently, the refunds cause a shift in the median income from €17,609.73 to €17,675.54, causing an upward shift of €39.49 in the poverty threshold, to €10,605.32 per annum. Because this shift in this yardstick can obscure the underlying effect on people's movements relative to the poverty line, changes in the poverty rate following the distribution of refunds are presented in Table 7.2 both before and after the effect of the median shift¹¹.

Despite increasing individuals' incomes (or at worst leaving them untouched), the overall poverty rate is seen to remain more or less static for the total population, and even marginally increase for a

¹⁰ See Collins (2006) and Social Justice Ireland (2010: 37-41) for a full explanation of poverty lines and the national equivalence scale. To calculate these figures, the policy proposal has been modelled using the EU-SILC data and the related household income changes recalculated to produce the figures reported in these sections.

¹¹ Given the sample size, users of the EU-SILC dataset including the CSO consider small changes in calculated indicators, such as from 17.0% to 17.1% in table 7.2 as indicating no observable change. However, when the 40 per cent of median income poverty line is examined, poverty falls marginally for the entire population (see Appendix 10.6).

number of segments therein. While the effect of a shifting median income is involved in this inconsistency, it is also evident that in the absence of a median shift the impact on the headline poverty rate is still small.

Table 7.2 – Impact of Refunds on Poverty Rate

	At-risk-of-poverty rate (%)		
	Pre-refund	Post-refund	
		Before median shift	After median shift
Total Population	17.0	16.6	17.1
Gender			
Male	16.6	16.3	16.5
Female	17.4	17.0	17.6
Age Category			
0-14	20.2	19.8	20.5
15-24	22.0	21.6	22.3
25-49	13.0	12.5	12.9
50-64	17.3	17.0	17.0
65+	13.6	13.4	13.6
Principal Economic Status			
At Work	6.5	6.1	6.5
Unemployed	44.0	44.0	44.8
Student	29.5	28.8	29.1
Home duties	23.8	23.7	23.9
Retired	14.8	14.7	14.9
Ill/disabled	40.8	40.1	40.3
Other inactive person	32.1	31.3	31.3
Aged <16	20.3	19.9	20.6
Employment income in household			
No	45.3	45.3	45.4
Yes	10.8	10.4	10.9
Household Composition			
1 adult, no children	25.4	24.7	25.0
2 adults, no children	13.8	13.3	13.6
3 or more adults, no children	13.2	13.0	13.0
1 adult, with children	39.6	39.3	39.3
2 adults, with 1-3 children	11.7	11.3	11.5
Other households with children	23.4	23.1	24.6

In order to account for this apparent anomaly, it is necessary to provide some perspective on the scale and focus of this proposal. In the 25+ case used for this part of the analysis, the total amount of refunds is €127.8 million. Of this, only €51.1 million (or 40 per cent) of the total amount accrues to

individuals below the poverty line¹². Of course, this assumes that the amounts go to single individuals. In reality, these refunds will be distributed within households as any other income might. Applying the national equivalence scale to refunded amounts yields a total impact on equivalised incomes of €64.3 million (in equivalised terms), of which 38.7 per cent or €24.9 million accrues to individuals below the poverty line. Taking these points into consideration, the impact on the headline poverty rate would be expected to be relatively small, as is confirmed by the figures in Table 7.2.

7.4 Impact on Individuals with Incomes near the Poverty Line

Depth of poverty refers to the difference between the poverty threshold and a given household's equivalised income. That is, for households below the poverty threshold, it is the amount of equivalised income that would be necessary for them to move above the threshold and out of poverty, and for households above the threshold, it is the reduction in income that would cause them to fall below the threshold and into poverty.

The reason for considering this measure is that this proposal (and indeed any income-altering programme) may impact households' equivalised income without causing them to move across the poverty threshold, and thus measures of changes in overall poverty (such as those in Table 7.2) fail to account for these potentially significant effects. Furthermore, a refundable tax credit flowing to one low-income Employee in a household by default raises the overall income of that household and therefore benefits each of its members. Consequently, the equivalised income of each of the household members increases reflecting the overall gain in income and living standards for the household and each of its members. In assessing the impact of the *Social Justice Ireland* refundable tax credits proposal, these effects need to be considered and the analysis in this section attempts to capture each of these impacts.

In 2006 the annual poverty threshold was €10,565.84 which when converted into a weekly amount gave a poverty line of €202.49. Dividing individuals' weekly household equivalised income into €20

¹² 60% of refunds going to those above 25 years old would be to individuals above the poverty line. 76% of refunds going to those aged 16-24 (if they were to receive them) would go to individuals above the poverty line. The proportion going to those above 23 years old would probably fall between these two estimates.

brackets on either side of this value yields the distribution of income and individuals around the poverty line and this is presented in Table 7.3.

Table 7.3 - Population by Depth of Poverty

Distance in equivalised income BELOW poverty threshold	Number of individuals		Distance in equivalised income ABOVE poverty threshold	Number of individuals
> 200	290		0 – 20	256,134
180 – 200	1,621		20 – 40	227,085
160 – 180	3,828		40 – 60	205,347
140 – 160	4,020		60 – 80	227,693
120 – 140	14,145		80 – 100	168,635
100 – 120	14,890		100 – 120	194,398
80 – 100	47,603		120 – 140	171,673
60 – 80	89,856		140 – 160	164,226
40 – 60	145,350		160 – 180	165,370
20 – 40	193,950		180 – 200	139,819
0 – 20	207,663		> 200	1,609,742
Total	723,218		Total	3,530,122

Tables 7.4 and 7.5 show the amount of *equivalised* income individuals in each bracket receive. Some interesting facts are borne out in these tables. Firstly, considering those individuals below the threshold:

- A total of 91,056 individuals (men, women and children) below the poverty threshold benefit either directly (through a payment to themselves) or indirectly (through a payment to their household) from a refundable tax credit. This number represents 11.88 per cent of all individuals at risk of poverty.
- Of the 91,056 individuals living below the poverty line that benefit from refunds, most (over 71 per cent) receive refunds of more than €10 per week with 32 per cent receiving in excess of €20 per week.
- Refunds are concentrated among individuals that are close to the poverty line with almost 50 per cent of recipients being less than €40 in weekly equivalised income from the poverty threshold; almost 70 per cent are less than €60 away.

Secondly, considering individuals above the poverty threshold (Table 7.5):

- A total of 148,863 individuals (men, women and children) above the threshold benefit from refundable tax credits either directly (through a payment to themselves) or indirectly (through a payment to their household).
- Of these individuals, more than 50 per cent receive less than €10 in equivalised income.
- In general, most of the payments flow to those individuals who are nearest the poverty threshold with 50 per cent of recipients having income within €120 of the poverty line. Those nearest the poverty line are also more likely to receive larger refunds than other recipients with higher incomes.

Appendix 10.7 provides a more detailed assessment of the exact movements of individuals across income brackets.

Table 7.4 – Number of Individuals Below the Poverty Threshold Receiving Increases in Equivalised Income

Distance in equivalised income BELOW poverty threshold	Weekly income increase in <u>equivalised terms</u> :					Total with increased equivalised income:
	No payment	1€-€5	€5-€10	€10-€20	€20+	
> 200	290	0	0	0	0	0
180 – 200	1,621	0	0	0	0	0
160 – 180	3,621	0	0	0	207	207
140 – 160	3,493	0	0	0	527	527
120 – 140	13,089	0	0	0	1,056	1,056
100 – 120	10,571	0	0	2,056	2,263	4,319
80 – 100	41,231	0	0	115	6,257	6,372
60 – 80	74,984	4,278	706	4,138	5,750	14,872
40 – 60	125,506	1,172	0	17,361	1,311	19,844
20 – 40	168,268	7,268	918	10,690	6,807	25,683
0 – 20	189,488	1,177	10,388	1,005	5,606	18,176
Total	632,162	13,895	12,012	35,365	29,784	91,056

Note: *Those below the poverty line and receiving no payment represent those who are ineligible to benefit from a refund as they do not meet the eligibility criteria outlined in chapter 5.

Table 7.5– Number of Individuals Above the Poverty Threshold Receiving Increases in Equivalised Income

Distance in equivalised income ABOVE poverty threshold	Weekly income increase in <u>equivalised terms</u> :					Total with increased equivalised income:
	No payment*	1€-€5	€5-€10	€10-€20	€20+	
0 – 20	239,902	1,721	5,955	6,991	1,565	16,232
20 – 40	213,585	0	3,593	6,554	3,353	13,500
40 – 60	194,185	2,516	2,611	4,085	1,950	11,162
60 – 80	215,873	3,418	4,218	1,313	2,872	11,821
80 – 100	154,635	2,361	3,264	3,503	4,873	14,001
100 – 120	184,101	469	6,021	824	2,983	10,297
120 – 140	154,503	2,140	6,105	7,221	1,704	17,170
140 – 160	162,811	0	138	1,276	0	1,414
160 – 180	158,708	3,359	305	1,472	1,526	6,662
180 – 200	120,867	6,403	1,727	6,046	4,776	18,952
> 200	1,582,089	11,567	9,122	4,774	2,189	27,652
Total	3,381,259	33,954	43,059	44,059	27,791	148,863

Note: *Those above the poverty line and receiving no payment represent those who are ineligible to benefit from a refund as they do not meet the eligibility criteria outlined in chapter 5.

- Overall, almost 239,919 individuals (91,056 + 148,863) living in low-income households would experience an increase in income as a result of the introduction of refundable tax credits, either directly (through a refund to themselves) or indirectly (through a payment to their household).

7.5 Impact on the Fairness of the Irish Taxation System

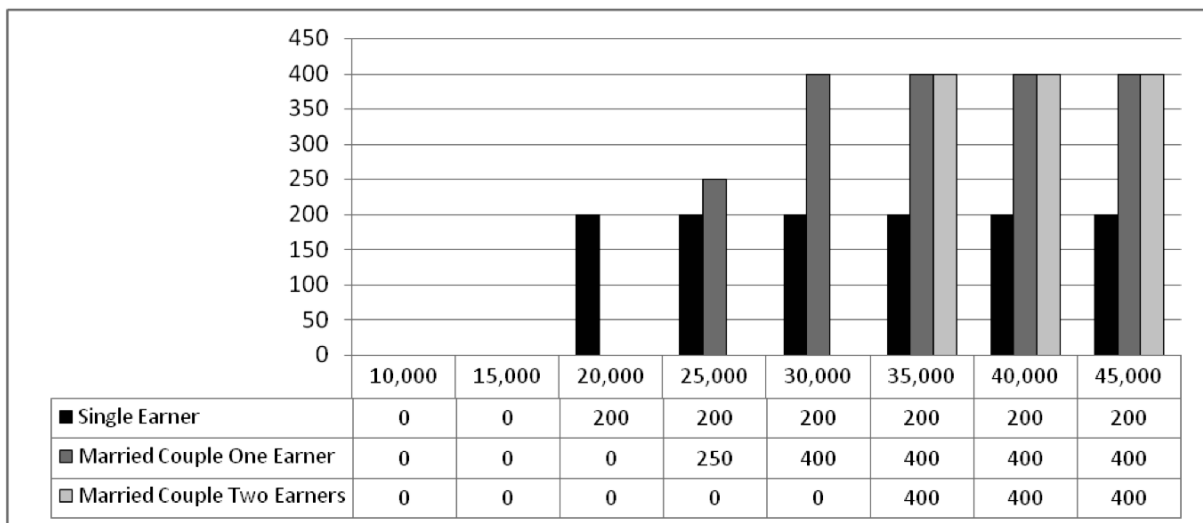
While the previous three sections use the EU-SILC data to model the immediate impact on low-income individuals and households of the refundable tax credits proposal, it is also relevant to consider the long-term structural impact of the proposal.

Once adopted, a system of refundable tax credits as proposed in this study will result in all future changes in tax credits benefitting all employees in Irish society equally¹³. Figures 7.2 and 7.3 illustrate this by contrasting the impact of a budgetary decision to increase tax credits by €200 under the current system and under a system where this proposal for refundable tax credits has been introduced. The contrast between both outcomes is notable. Under the current system (figure 7.2)

¹³ Employees would have to meet the eligibility criteria outlined in section 5 (essentially be credibly engaged with the labour market) or be currently using up all of their tax credits.

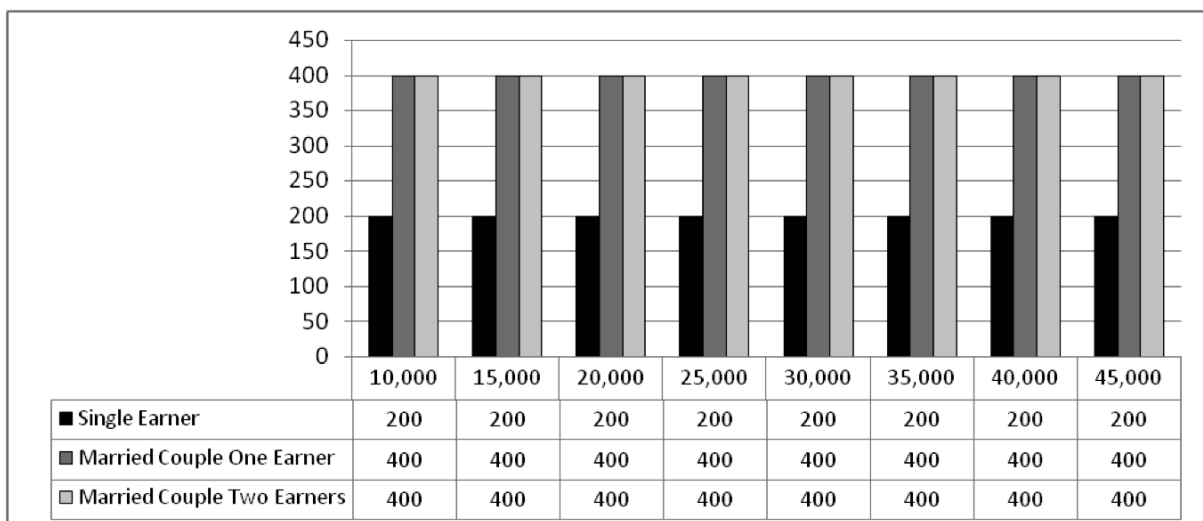
the benefits of the policy change only flow to those with sufficient income to have used up their current tax credits and who have sufficient additional income and additional taxation liabilities to avail of the new credits. Low-income employees gain nothing from such a policy reform. In contrast, under a system of refundable tax credits (figure 7.3) the benefits of the policy change are distributed equally to all employees.

Figure 7.2 – Benefit of a €200 Increase in Tax Credits by Income and Marital Status under the Current System



Note: The impact of the policy proposal is the same for all income levels in excess of €45,000.

Figure 7.3 – Benefit of a €200 Increase in Tax Credits by Income and Marital Status under a system with Refundable Credits



Note: The impact of the policy proposal is the same for all income levels in excess of €45,000.

Once a system of refundable tax credits is introduced, this more equitable outcome would become a normal part of the taxation system. Clearly, such a reform would mark a significant step in the direction of building a fairer taxation system and represent a fairer way for Irish society to allocate its resources.

8 Conclusions

Proposals for the introduction of a refundable tax credit system in Ireland have been around for more than two decades. To date, essentially due to limited data availability, there has been no detailed empirical assessment of the proposal. This study has been commissioned by *Social Justice Ireland* to address that deficit. It uses the most detailed available national income dataset, the CSOs *EU Survey on Income and Living Conditions*, collected using a nationally representative sample of 14,634 individuals across 5,386 households, to consider the costs and implications of the proposal. The study has been undertaken by two independent economists and has been subject to a peer-review process.

This study proposes and examines a refundable tax credit system of a defined or limited nature; one targeted at low-income individuals and households who are actively and continuously involved in the labour market. The primary features of the proposal are that: (i) refunds apply to the unused portions of the Personal and PAYE tax credits only; (ii) a set of eligibility criteria must be satisfied in the relevant year for an individual to be considered for a refund for that year; and (iii) payments would be made at the end of the tax year. The proposal also considers how the system might be administered using the existing taxation and social insurance infrastructure.

Using data from 2006, the most up-to-date data available when the study was commissioned, the proposal has been costed at just over €140 million. While the costs of the proposal will change in line with variations in the structure of the taxation system and the labour market, the costs are unlikely to significantly vary from the study's findings. The detailed and robust costing performed as part of the empirical analysis in this study, contrasts with the previously published figures for refundable tax credit systems for Ireland. The difference between these costings is significant and should raise some concern regarding the occasional updates to the costing of these proposals presented, with limited accompanying empirical detail and analysis, by the Department of Finance. Simply, evidence based policy making should be based on solid evidence and, as this analysis shows, to date the consideration of this proposal has been badly served by poor 'evidence'. It is hoped that a contribution of this study is to ensure future debate on this issue can be more informed and the proposal is not dismissed simply on the grounds of excessive costs and lack of feasibility.

Finally, the study has demonstrated that although the costs of this proposal are small in the context of the overall taxation system, its impact is significant for low income employees and their dependents. A further important implication of the proposal is that its implementation would mark a significant step in the direction of building a fairer taxation system where resources when available are more equally distributed.

9 References

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10

Appendices

10.1 Steps Taken to Estimate Tax Credit Eligibility

Tax Credit	Amount in 2006	Criteria used to allocate credits for purposes of costing	Tax credit allocated
PAYE Credit			
PAYE Credit (Single or Widowed)	€1,490	Individual earns income subject to PAYE, according to breakdown provided in Table 6.1	Individual allocated €1,490
PAYE Credit (Married Couple)	€1,490	Married person earns income subject to PAYE, according to breakdown provided in Table 6.1	Married couple allocated €1,490 for <i>each</i> spouse earning a PAYE income
Personal Credits			
Single Person	€1,630	Person's marital status is single, divorced or separated in dataset	Individual allocated €1,630
Married Couple	€3,260	Couple comprises two married individuals of the opposite sex living in one household	Married couple allocated €3,260
		Couple other than as described above (see subsection 6.2.4)	Married <i>individual</i> allocated €3,260
Widowed Person (no dependent children)	€2,130	Person's marital status is widowed; no children below the age of 16 or students below the age of 25 living in the household	Individual allocated €2,130
Widowed Person (dependent children): 1 year bereaved 2 years bereaved 3 years bereaved 4 years bereaved 5 years bereaved	€3,100 €2,600 €2,100 €1,600 €1,100	Individual's marital status is widowed; one or more children below the age of 16 or students below the age of 25 living in the household	Individual allocated €1,630

10.2 Sample Refund Costing

Table Appendix 10.2.1 – Sample Costing

Amount of Refund	Frequency	Total Refunds
<= €0.00	4,140,042	€0.00
€0.01 - €200.00	8,465	€723,597.46
€200.01 - €400.00	11,342	€3,289,738.38
€400.01 - €600.00	13,187	€6,651,958.78
€600.01 - €800.00	12,324	€8,349,242.57
€800.01 – €1,000.00	13,210	€12,061,471.30
€1,000.01 – €1,200.00	8,428	€9,328,674.79
€1,200.01 – €1,400.00	9,320	€12,138,259.49
€1,400.01 – €1,600.00	8,679	€12,962,847.24
€1,600.01 – €1,800.00	11,735	€20,059,520.44
€1,800.01 – €2,000.00	6,533	€12,409,607.49
€2,000.01 – €2,200.00	4,090	€8,591,364.90
€2,200.01 – €2,400.00	1,897	€4,269,055.07
€2,400.01 – €2,600.00	0	€0.00
€2,600.01 – €2,800.00	123	€334,369.76
€2,800.01 – €3,000.00	183	€530,371.91
€3,000.01 – €3,200.00	350	€1,087,590.03
€3,200.01 – €3,400.00	469	€1,528,370.37
€3,400.01 – €3,600.00	0	€0.00
€3,600.01 – €3,800.00	438	€1,635,142.34
€3,800.01 – €4,000.00	0	€0.00
€4,000.01+*	2,526	€11,897,966.19
Total	4,253,340	€127,849,148.51

Note: * Refunds of €4,000+ are due to assumed maximum possible refunds for certain married couples which are unlikely to occur in reality (see section 6.2.4)

Table Appendix 10.2.1 attempts to clarify the weighted sum approach to the costing produced in section 6.5.1 i.e. the costs relating to refunding tax credits to those aged 25 years or older. Having assigned to each individual an estimated payment to which they would be entitled under the proposed system of refunds, weights are applied to the sample in order to make it representative of the total population. Calculating the weighted sum of all refund payments in this sample gives the total cost of refunds.

In the table, payment amounts are divided into bands for clarity and legibility. According to the table, for example, 8,465 individuals would be entitled to a refund valued between €0.01 and €200 inclusive. The total of these 8,465 payments is approximately €723,600, implying an average refund for people in this bracket of €85.48 per annum. Similarly, there are 8,428 individuals receiving a

refund in the €1,000-€1,200 where the total value of these refunds is €9.3m, implying an average refund for people in this bracket of €1,106.87 per annum.

It may be noted that the total frequency of refunds here exceeds the total number of eligible individuals (93,155) indicated in Section 5.3. This simply arises from the fact that where one member of a married couple receives a refund the payment is divided equally between both spouses reflecting how in reality payments would usually be made to married couples rather than individuals. This causes the frequency of payments to married couples to appear double, but does not affect their total value and thus the cost of the overall proposal.

10.3 Details on Costing for 23-24 year olds

One of the limitations of the available EU-SILC dataset is that its age variable is only available in categories (16-24 years etc) rather than in individual years. As the proposal is structured, refundable tax credits would be available to all those aged 23 years and over who meet the eligibility criteria outlined in chapter 5. A challenge arises in calculating the costs for those aged 23 and 24 years as they form part of the 16-24 year age category and it is not possible to easily isolate people of this age for the purpose of the calculations. Therefore, the cost of the proposal must be estimated indirectly for those in this group.

The approach taken in this study involves determining the cost of offering refundable tax credits to all those aged 16-24 years and then using a set of plausible assumptions to estimate the proportion of that sum which corresponds to those aged 23-24 years.

Following the same procedure as outlined in chapter 6, the cost of providing refundable tax credits to 16-24 year olds is estimated as €122,026,741.

It must next be determined what proportion of this €122 million of refunds should be attributed to the 23-24 year old cohort. A reasonable starting point for this assumption can be taken from census data published by the CSO (2007b) and reproduced in Table Appendix 10.3.1.

Table Appendix 10.3.1 - Census 2006 Data for 16-24 Age Group

Yearly Age	Population	Age Group	Cumulative Population	Cumulative Percentage of 16-24 Age Group
24	73,717	24	73,717	12.8
23	71,297	23-24	145,014	25.2
22	67,904	22-24	212,918	37.1
21	65,466	21-24	278,384	48.5
20	64,091	20-24	342,475	59.6
19	60,346	19-24	402,821	70.1
18	58,326	18-24	461,147	80.3
17	56,716	17-24	517,863	90.2
16	56,551	16-24	574,414	100.0
Total	574,414			

According to the 2006 census, there are 574,414 individuals in the 16-24 year old age group, of which 145,014 (25.2 per cent) are 23-24 years old. A simple assumption could be that because 23-24 year olds represent 25.2 per cent of the 16-24 year old age bracket, they should represent approximately 25.2 per cent of the €122 million cost of refunds to that age bracket. This would imply a cost for 23-24 year olds of approximately €31 million.

However, this assumption intrinsically implies that refunds to the 16-24 year old age group are evenly distributed across that age group. This is probably not the case: just because 23-24 year olds represent 25.2 per cent of the age bracket, does not necessarily mean that they are responsible for 25.2 per cent of the €122 million in refunds going to that age bracket. It may be that certain characteristics of the 23-24 year old age group make it likely to be responsible for a disproportionately smaller or larger proportion of total refunds to the 16-24 year old age group.

The question here is: would 23-24 year olds be more likely to receive refunds than their 16-22 year old counterparts and, where they do, are those refunds more likely to be relatively large? To address this question, the eligibility requirements outlined in Section 5.1 should be considered. Individuals at the age of 23-24 are more likely to be in employment than the younger cohort, either having completed third-level education or training, or having gone directly into work from school and achieved some years of work experience. This increases the likelihood that they will satisfy the minimum income requirement and thus be eligible for a refund. On the other hand, with the benefit of a qualification and/or work experience, these individuals are more likely to fully exploit their tax credits, or indeed surpass the maximum income ceiling. It is anticipated that the latter effect will outweigh the former, and thus, of the €122 million cost estimated for refunds to the 16-24 year old cohort, it is likely that a significant proportion of this cost relates to 16-22 year olds who would not be eligible under the proposed system of refundable tax credits.

On the basis of these considerations, for the purposes of the final costing it is assumed that 10 per cent of the costs relating to the 16-24 year old cohort is attributed to 23 and 24 year olds¹⁴. This implies a cost of €12,202,674.

¹⁴ Appendix 10.4 performs a sensitivity test on this assumption to assess the impact on the final costing of variations in this assumption.

10.4 Costings for Variations of the *Social Justice Ireland* Proposal

The costing of €140.1 million established in Section 6.5 represents the base case scenario most closely reflecting the eligibility criteria outlined in the *Social Justice Ireland* proposal (see Section 5.1). Of course, altering various features of that proposal, and the assumptions used to estimate its cost, will affect the final total estimated cost. Continuing with the same estimating methodology used to establish the base scenario; this appendix provides analyses describing the variations in the total estimated cost to the exchequer resulting from changes made to:

- (a) the minimum age for eligibility,
- (b) the proportion of refunds going to those aged 23 and 24 years, and
- (c) the use of a weekly, rather than annualised, income floor for qualification.¹⁵

10.4.1 Changes in the minimum age for eligibility

As outlined in Section 6.5, the approach used to estimate the cost of refunding credits is to:

1. estimate the cost to those aged 25 and over,
2. estimate the cost to those aged 16-24, and
3. assume a proportion of the cost in step 2 relates to 23-24 year olds and add this amount to the cost in step 1.

In order to assess the sensitivity of the estimates to different minimum age criteria, we consider the cost of providing refunds to four different age cohorts: all those aged 16+, all those aged 21+, all those aged 23+, and all those aged 25+. The costs of the proposal under these various age minima are shown in Table Appendix 10.4.1.

Table Appendix 10.4.1 – Estimated cost of proposal with various minimum age thresholds

Age Classification	Estimated Cost €m
All eligible who are aged 16+	249.9
All eligible who are aged 21+	164.5
All eligible who are aged 23+ (base case)	140.1
All eligible who are aged 25+	127.8

¹⁵ The researchers calculated a series of other sensitivity tests, mainly representing combinations of the scenarios outlined in this appendix. These are available upon request.

Were refundable tax credits made available to all those aged over 16 years who complied with the other eligibility criteria, the overall cost is estimated to cost €249.9m. Similarly, if the policy was restricted to eligible individuals aged over 25 years the cost would be €127.8m. Both these figures represent the upper and lower bound of the estimated cost and compare with the base case *Social Justice Ireland* proposal where the age minimum is 23 years and the cost is €140.1m.

10.4.2 Changes to the assumptions used to calculate the proportion of refunds going to those aged 23 and 24 years

As outlined in chapter 5 and appendix 10.3, a challenge associated with using EU-SILC data to estimate the costs of the *Social Justice Ireland* proposal relates to the availability of age data in groups (aged 16-24 etc) rather than in individual years. To calculate the base scenario, it was assumed that within the age group 16-24 years, the proportion of that group's total refunds received by those aged 23 and 24 years represented 10 per cent of the total. This assumption, outlined and explained in appendix 10.3, led the analysis towards an overall base case scenario cost of €140.1m for all eligible recipients aged over 23 years.

While the base case scenario (the 10 per cent assumption) was chosen as the most realistic and representative outcome, the fact that it is an assumption suggests it should receive further attention given the scale of the exchequer expenditure involved in this proposal. Therefore, this section of the appendix examines this assumption for those aged 23 and 24 years and recalculates the estimated cost under two alternative scenarios. Table Appendix 10.4.2 outlines the results of this analysis where the scenarios are:

Base case scenario: where refunds to the 16-24 year old cohort are skewed in favour of the younger population, i.e. those aged 23-24 years receive a small proportion of refunds to the 16-24 year old population relative to the proportion of that population they represent. This would reflect the idea that the 23-24 year olds are more likely to have used up their credits or surpassed the income ceiling than their younger counterparts. In this case 10 per cent of the refunds are allocated to those aged 23-24 years.

Scenario 1: where refunds to the 16-24 year old cohort are distributed proportionally. Thus the proportion of refunds attributed to a given subgroup (e.g. those aged 23-24) equals the proportion of the 16-24 year old population that that subgroup represents (see Table Appendix 10.3.1 which outlined these population figures from Census 2006). In this case 25.2 per cent of the refunds are allocated to those aged 23-24 years.

Scenario 2: where refunds to the 16-24 year old cohort are skewed in favour of those aged 23-24 years. This would reflect an assumption that individuals at this age are more likely than their younger counterparts to earn sufficient employment income to be eligible under the *Social Justice Ireland* proposal. In this case an extreme figure of 40 per cent of the refunds is allocated to those aged 23-24 years.

Table Appendix 10.4.2 – Estimated cost of proposal under three scenarios/assumptions for refunds to those aged 23 and 24 years.

Scenario	Estimated Cost €m
Base case scenario	€140.1
Scenario 1	€158.7
Scenario 2	€176.7

Overall, Table Appendix 10.4.2 shows that the costs of the proposal vary between €140.1m and €176.7m depending on the scenario.

10.4.3 Using a weekly, rather than annual, income floor as part of the eligibility criteria

The base case scenario estimate was established on the basis of an annualised minimum income from employment of €4,000 as a condition for eligibility. However, in Section 5.1, a weekly income floor was suggested as an alternative requirement. Such a weekly income floor would require individuals to earn an average income from employment of €76.50 for each week they are employed during the year. This would prevent individuals with irregular income from being excluded from the scheme.

To consider the cost implications associated with implementing the *Social Justice Ireland* proposal using this approach, we have recalculated the costs using the EU-SILC data. With a weekly income floor eligibility would thus involve determining the number of weeks worked by each individual and averaging their annual income from employment over the period of their employment. Should the weekly average exceed €76.50, the individual is deemed eligible.

A challenge associated with calculating the cost of this approach is that EU-SILC does not provide information on the number of weeks worked by individuals during the year. As an attempt to generate a proxy indicator, an individual's total unemployment benefit received is divided by the weekly rate in 2006, €165.80, which is subtracted from 52.2 weeks. This is not a perfect substitute; among other issues, individuals may not have received unemployment benefit for every week they did not work. However, estimates based on this value should at the very least be indicative of the sensitivity of total refunds to this change in the eligibility criteria.

It should be noted that in all calculations here the weekly system is necessarily more expensive than the annualised system, as the population eligible for the weekly system comprises everyone who is eligible for the annualised system *plus* a number of individuals who will be pushed over the weekly income floor by having their employment income averaged over a period shorter than the full year.

Table Appendix 10.4.3 outlines the result of this analysis and indicates that there is a €10.7m additional cost associated with the proposal when a weekly rather than annual income floor is chosen to determine the eligibility criteria.

Table Appendix 10.4.3 – Estimated cost of proposal with annual and weekly income floors

	Estimated Cost €m
Annual income floor (base case)	€140.1
Weekly income floor	€150.8

10.5 Distribution of Refunds Table

Table Appendix 10.5.1 - Distribution of Refunds, by frequency and total refund values

Amount of Refund	No. of Recipients	Total Value of Refunds
€0.01 - €200.00	8,465	€723,597.46
€200.01 - €400.00	11,342	€3,289,738.38
€400.01 - €600.00	13,187	€6,651,958.78
€600.01 - €800.00	12,324	€8,349,242.57
€800.01 - €1,000.00	13,210	€12,061,471.30
€1,000.01 - €1,200.00	8,428	€9,328,674.79
€1,200.01 - €1,400.00	9,320	€12,138,259.49
€1,400.01 - €1,600.00	8,679	€12,962,847.24
€1,600.01 - €1,800.00	11,735	€20,059,520.44
€1,800.01 - €2,000.00	6,533	€12,409,607.49
€2,000.01 - €2,200.00	4,090	€8,591,364.90
€2,200.01 - €2,400.00	1,897	€4,269,055.07
€2,400.01 - €2,600.00	0	€0.00
€2,600.01 - €2,800.00	123	€334,369.76
€2,800.01 - €3,000.00	183	€530,371.91
€3,000.01 - €3,200.00	350	€1,087,590.03
€3,200.01 - €3,400.00	469	€1,528,370.37
€3,400.01 - €3,600.00	0	€0.00
€3,600.01 - €3,800.00	438	€1,635,142.34
€3,800.01 - €4,000.00	0	€0.00
€4,000.01+*	2,526	€11,897,966.19
Total	113,299	€127,849,148.51

Note: * Refunds of €4,000+ are due to assumed maximum possible refunds for certain married couples which are unlikely to occur in reality (see section 6.2.4)

10.6 Impact at very low income levels – those below 40% of median income

Table Appendix 10.6.1– Effect of Refunds on the Poverty Rate at the 40 per cent Level

	At-risk-of-poverty rate (%)		
	Pre-refund	Post-refund	
		Before median shift	After median shift
Total Population	3.4%	3.2%	3.2%
Gender			
Male	3.3%	3.1%	3.1%
Female	3.4%	3.3%	3.3%
Age Category			
0-14	3.6%	3.2%	3.2%
15-24	5.5%	5.5%	5.5%
25-49	2.5%	2.3%	2.3%
50-64	3.3%	3.2%	3.2%
65+	1.7%	1.7%	1.7%
Principal Economic Status			
At Work	1.2%	1.0%	1.0%
Unemployed	12.8%	12.8%	12.9%
Student	7.7%	7.7%	7.7%
Home duties	4.8%	4.6%	4.7%
Retired	2.9%	2.9%	2.9%
Ill/disabled	3.9%	3.9%	4.0%
Other inactive person	3.0%	3.0%	3.0%
Aged <16	3.7%	3.4%	3.4%
Employment income in household			
No	10.5%	10.5%	10.6%
Yes	1.8%	1.6%	1.6%
Household Composition			
1 adult, no children	3.7%	3.4%	3.4%
2 adults, no children	3.7%	3.7%	3.7%
3 or more adults, no children	2.8%	2.8%	2.8%
1 adult, with children	4.8%	4.8%	4.8%
2 adults, with 1-3 children	2.2%	1.7%	1.7%
Other households with children	4.7%	4.6%	4.7%

10.7 Depth of Poverty Decomposition

Section 7.3 provides a useful overview of the payment amounts, in equivalised income terms, received by individuals. Expanding on this, Table Appendix 10.7.1 provides an overview of the number of individuals in each “depth of poverty” bracket before and after the refund.

For example, 207 individuals move from bracket 2 to bracket 5 following their refund: this means that 207 individuals that were previously €160 to €180 away from the weekly poverty threshold moved to being €120 to €140 away.

The table is divided by the poverty threshold into four quadrants. The upper-left quadrant comprises individuals who begin below the poverty threshold and who then move up one or more brackets, but do not cross the threshold. A total of 41,183 individuals fall under this scenario. Similarly, the lower-right quadrant comprises individuals who begin above the poverty line and move one or more brackets away from it on their household’s receipt of a refund – this scenario corresponds to 64,478 individuals in total.

The lower-left quadrant is empty as this would correspond to individuals who begin above the threshold and move below it after receiving a refund, which is impossible (given that this analysis does not take into account a shift in the poverty threshold). Finally, the upper-right quadrant corresponds to individuals that move from a bracket that is below the threshold to one that is above it as a result of receiving a refund: this is the case for 11,580 individuals.

This analysis illustrates the important effect the *Social Justice Ireland* proposal would have despite its apparently small effect on overall poverty. A total of 11,580 individuals move across the poverty line, but many more that are at risk of poverty move towards the threshold, and many that are above the line move further above it.

Table Appendix 10.7.1 – Decomposition of Net Changes in Income Distribution in Terms of Distance from Poverty Threshold

	Number of individuals moving TO bracket no.:																						Total
	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22					
2																							
3	207																					207	
4	527																					527	
5	1,056	473																				1,529	
6	3,846																					3,846	
7			7,634	120																		7,754	
8				7,142	931					207												8,280	
9				7,813	535																	8,348	
10					10,899					2,557												13,456	
11						8,232	71	513														8,816	
12							9,805	515														10,320	
13								5,441	954													6,395	
14									7,312	1,568	109	304										9,293	
15										3,483	961											4,444	
16											8,512	389	346	234								9,481	
17												6,131	1,497									7,628	
18												5,578	890									6,468	
19													1,414									1,414	
20														1,472								2,998	
21															1,472							6,037	
Tot.	734	1,056	4,319	7,634	7,262	8,744	11,434	10,789	10,083	6,469	8,266	5,051	9,582	6,824	7,421	2,538	1,472	7,563				6,037	

Table Appendix 10.7.2 – Numbered Brackets for Table Appendix 10.7.1

	Bracket num.	Distance from threshold (€)		Bracket num.	Distance from threshold (€)
	1	> 200,00		12	0 – 20
	2	180 – 200		13	20 – 40
	3	160 – 180		14	40 – 60
	4	140 – 160		15	60 – 80
	5	120 – 140		16	80 – 100
	6	100 – 120		17	100 – 120
	7	80 – 100		18	120 – 140
	8	60 – 80		19	140 – 160
	9	40 – 60		20	160 – 180
	10	20 – 40		21	180 – 200
	11	0 – 20		22	> 200

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