

# Budget Perspectives 2013

Edited by Tim Callan

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*September 2012*





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# Foreword

*Frances Ruane*

The annual *Budget Perspectives Conference* provides a forum for discussing key public policy issues of both immediate and longer term concern. In the context of the current fiscal and economic crisis, research insights are needed at both the macro and micro level. The former are central to understanding and managing the significant reductions in the budget deficit needed to put Ireland's public finances on a sustainable footing. The latter are essential because a successful budgetary adjustment requires restructuring of both public expenditure and taxation. This in turn requires that policy adjustments take full account of both efficiency and equity issue and are seen to do so. The research papers presented at this year's annual *Budget Perspectives Conference* continue in this tradition, providing an opportunity for policymakers, social partners and researchers to engage with some of the major current issues.

In the opening session of the conference, David Duffy sets out the economic context in which the Minister for Finance will frame the 2013 Budget. This draws on the recently published *Quarterly Economic Commentary* (see [www.esri.ie](http://www.esri.ie)). While the context looks somewhat more favourable to that in which the Budget 2012 was framed, it remains uncertain due to the slow rate of progress in resolving the Euro-area challenges.

The second paper, by John FitzGerald (ESRI), looks specifically at the fiscal position out to 2015 and explores what should happen beyond that date. The paper reviews progress to date in stabilising the public finances, and argues for retaining our fiscal stance even if growth in the Euro Area undermines our meeting the specific targets that have been set. As long as there is no new information suggesting that structural deficit is higher than had been anticipated, there are merits in sticking with the medium term fiscal plan. The paper suggests that it would make sense to run a fiscal surplus over the economic cycle post 2015, with the aim of reducing the debt to prepare for the increasing costs of ageing, especially post-2030, and to make the economy more robust to any future shocks.

Turning to the micro analysis, a paper by Mike Brewer, James Browne and Wenchao Jin (University of Essex and Institute for Fiscal Studies) explores the implications of UK proposals for a "Universal Credit", which plans to integrate means-tested welfare benefits and in-work tax credits for working-age adults into a single programme in

2013. Many of the issues examined have parallels in the Irish context, where moves to a Single Working Age Payment are under consideration.

The final paper by Tim Callan, Claire Keane, Michael Savage, John Walsh and Kevin Timoney (ESRI) uses the ESRI's tax-benefit model to build a nationally representative profile of financial incentives to work in Ireland. This paper builds on earlier research in this area, presented at various *Budget Perspectives Conferences* over the past decade.

This paper focuses specifically on three topics. Firstly, it reviews how OECD data and analysis, based on illustrative examples, and not properly weighting the composition of Irish unemployment, overestimate replacement rates for Ireland: when appropriate adjustments are made, Ireland's replacement rates are in the middle of the European rankings. Secondly, microsimulation estimates for the UK and Ireland also suggest that the extent of high replacement rates is similar in the two jurisdictions – with Rent and Mortgage Supplement generating very high replacement rates in Ireland. Thirdly, estimates of replacement rates based on new CSO data for 2010, updated to 2012, take into account the cost of childcare and travel to work. Even when these are taken into account, the paper finds that over 90 per cent of Irish people are better off in work than out of work.

Copies of the presentations at the conference can be found on the ESRI website at [http://www.esri.ie/research/research\\_areas/taxation\\_welfare\\_and\\_pensions/](http://www.esri.ie/research/research_areas/taxation_welfare_and_pensions/)

# 1. Fiscal Policy for 2013 and Beyond

*John FitzGerald*

## 1 INTRODUCTION

The problems for Ireland today are very different from the problems of the last decade and, as a consequence, the priorities for fiscal policy in 2013 are very different. Instead of concerns about potential housing market bubbles, the issue today is how fiscal policy can best restore the public finances to sustainability and the wider economy to growth. The trajectory chosen for the restoration of sustainable public finances must take account of a range of factors, which will impact on the welfare of the Irish population. This paper considers the appropriate stance of fiscal policy for 2013 and subsequent years.

The economic crisis in Ireland is the most serious since the Second World War. While the fall in output has been greatly affected by the wider recession in the EU, the position of Ireland is particularly difficult because of multiple policy mistakes made over the past decade. A combination of inappropriate fiscal policy and a failure of financial regulation have resulted today in a legacy of huge government debts and a very large government borrowing requirement. While a substantial part of the increase in indebtedness since 2007 is directly attributable to the banking crisis (approximately 40 percentage points of GDP), a majority of the debt is the result of the dramatic deficit in the government's finances since 2007.

The challenge which has faced successive Irish governments since 2008 is how to return the public finances to a sustainable path by means of appropriate fiscal policy and how to bring the banking crisis under control. This imperative is not imposed from outside. Even before aid was sought from the EU Commission, the ECB and the IMF (the *Troika*)<sup>1</sup>, it was clear what needed to be done. While the broad parameters for fiscal policy are now enshrined in a series of agreements and laws, there still remain fiscal policy choices open to the government. This paper considers the appropriate stance of fiscal policy over the coming years within the context of the EU legal framework and the related agreement with Ireland's partners in the *Troika*. In making these fiscal policy choices, consideration must be given to how they will affect growth in Ireland in the medium term.

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<sup>1</sup> The UK, Swedish and Danish governments have also provided bilateral support.

Section 2 of this paper considers the EU rules on fiscal policy, which now form the essential backdrop for Irish policy making. In Section 3 the problems in measuring the fiscal stance are discussed and the magnitude of the adjustment made to date is assessed. Section 4 considers the lessons from the past experience with large scale fiscal adjustment in Ireland and elsewhere. Section 5 looks at the fiscal adjustment in Ireland to date and Section 6 draws conclusions on the appropriate approach to fiscal policy in Ireland over the next few years.

## 2 FISCAL RULES

Fiscal policy in Ireland must be framed within the context of a series of EU and domestic regulations. This framework includes the Stability and Growth Pact (SGP), as updated and enhanced by the Treaty on Stability, Coordination and Governance in the EMU. However, for Ireland, the key set of rules governing fiscal policy out to 2015 is contained within the agreement reached with the *Troika* in December 2010. Once the fiscal adjustment set out in this agreement has been completed by bringing the deficit within the limits placed by the Stability and Growth Pact (a deficit of no more than 3% of GDP), the Treaty rules will then apply to Irish fiscal policy.<sup>2</sup>

The agreement with the *Troika* on how the Irish fiscal position is to be brought into conformity with the Treaty, sets out the key parameters within which Irish fiscal policy is to be developed, including the broad path of adjustment of the deficit to be achieved over the period to 2015. This plan is designed to bring the government deficit under the SGP limit of 3 per cent of GDP by that date. In particular it specifies in billions of euro the amount of fiscal "effort" to be undertaken each year to 2015. It is this latter commitment on fiscal "effort" which is especially binding.<sup>3</sup>

The present plan sees the final stage of the adjustment being completed in 2016 or 2017. While this agreement on the fiscal "effort" each year is binding as a lower limit, it is open to the Irish government to undertake a more rapid adjustment than specified. It is also open to the Irish government to choose the fiscal instruments, taxes and expenditure, that it uses to meet the target in each year.<sup>4</sup>

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<sup>2</sup> The debt reduction benchmark in the Treaty comes into play from 2018 onwards.

<sup>3</sup> The IMF in their summer 2012 report said, "Staff continues to support the accommodation of revenue shortfalls in the event of significantly weaker growth out-turn in order to protect the fragile economic recovery, and spreading over subsequent years the closure of any emerging fiscal gap arising from this accommodation." IMF, 2012, paragraph 33. In other words, if the deficit target was missed because of a cyclical downturn, additional fiscal measures might not be appropriate. However, it is not clear how the EU Commission or the ECB would view such a shortfall.

<sup>4</sup> While the composition of the adjustment needs to be discussed with the *Troika*, it is clear that, in practise, they generally leave it to the Irish government to decide the precise mix of measures.

Once Ireland conforms to the Treaty requirements and what is called the EU "excessive deficits procedure" ends at the end of 2015 (because the deficit has been reduced below 3 per cent of GDP), the Treaty rules themselves will provide the framework for fiscal policy choices in subsequent years.

The fiscal rules which underpinned EMU since its foundation were enshrined in the *Stability and Growth Pact*. These rules placed a limit on the government deficit of 3 per cent of GDP and the government was meant to balance its budget over the cycle. However, over the last decade a number of countries, among them Germany and France, broke these rules without facing serious consequences. In the case of Ireland, up to the current crisis these rules were generally observed. However, as discussed later, this did not mean that fiscal policy was either wise or safe. The position in Spain was rather similar to that in Ireland, with the government running surpluses in 2005-7, Conefrey and FitzGerald, 2010.

However, the existence of the SGP rules and the fact that the government was observing them gave a false sense of security in both Ireland and Spain. It also meant that key external observers of the Irish economy tended to look first to the rules and their implementation rather than to the innate wisdom of domestic fiscal policy. O'Leary, 2009, has analysed the contemporary assessment made by the IMF and the EU of Irish fiscal policy and he shows that these external observers did not pick up the dangers inherent in the very rapid growth then under way. The presence of the fiscal rules, embodied in the SGP, provided a smoke screen distracting observers from what was really happening. This highlights the potential danger of relying too much on simple rules, whether the rules are those enshrined in the SGP or in the Treaty passed earlier this year. The wisdom of fiscal policy still needs to be tested against a broader range of indicators.

The origin of the recent Treaty establishing enhanced fiscal rules for the EU lies in the current crisis, which has demonstrated a serious failure in public policy in many EU members. The need for enhanced solidarity between EU members, arising from the crisis, has seen the provision of very substantial loans on generous terms by the bulk of EMU members to Ireland, Portugal and Greece. In turn, the lenders have understandable concerns that measures be taken to ensure that these loans will be repaid: hence the desire of the creditor countries to see all EMU members incorporate legal restrictions on fiscal policy in their states, which will ensure that loans will be capable of being repaid.

However, in developing the rules to ensure that lenders get their money back, the origins of the current crisis have been ignored. In the case of Ireland and Spain (and also in the case of some other EU members outside the EMU) the best indicator of

economic dangers was the rapidly rising imbalance on the current account of the balance of payments. This indicator does not figure in the treaty. Thus nothing in the Treaty would prevent a repetition of the current disasters in Ireland and Spain. However, the EU Commission is also empowered to start an "excessive imbalances procedure" in the future, should it feel that it is appropriate. While much weaker than the Treaty provisions, this does give scope for action at an EU level if fiscal policy mistakes were to be made in the future along the lines of the mistakes made in Ireland and Spain over the last decade.

### 3 MEASURING FISCAL STANCE

It is important to consider how fiscal policy – high level decisions on taxation and expenditure – actually impacts on the macro-economy. A frequently expressed view equates a government deficit with a stimulatory policy and a government surplus with a contractionary policy – this is an inappropriate simplification.<sup>5</sup> In fact, a surplus could actually reflect a stimulatory fiscal policy, where the government, through tax and spending policies, was raising the level of demand in the economy. A deficit could also reflect a contractionary policy, as it does today, where the government is implementing major cuts. While the government over much of the last decade observed the Stability and Growth Pact by running a surplus, it was actually pursuing a stimulatory policy, adding to demand in an inappropriate manner, Kearney, 2012. This was because the surplus arose from exceptional revenues that resulted from an abnormally high level of activity in the economy. By contrast, the fact that the government is today running a huge deficit does not mean that the government is stimulating the economy. In fact, the large deficit masks a fiscal policy which, of necessity, involves raising taxation and cutting expenditure – taking more money out of the economy - with a major negative impact on domestic demand.

To understand the impact that fiscal policy has on the economy using published data takes some unravelling.

Firstly the data that are most readily available on the public finances do not properly capture what is going on. Government accounting practises date back to the 19<sup>th</sup> century British administration. To understand what is going on, it is necessary to use data on a standard national accounting basis. These data are consistent and readily reconcilable with the approach used by the EU Commission. However, because the budgetary process is not based on these data, they appear with a significant lag. Among other things, these national accounting data avoid double counting as they net out transfers within the government sector and they include extra-budgetary

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<sup>5</sup> This was clearly explained in an Irish context almost forty years ago in a paper by Dowling, 1978.

funds, which are properly part of the government sector.<sup>6</sup> It would help the policy making process if the approach to government accounting in Ireland was changed so that the data published in a timely manner better reflected what was actually happening, FitzGerald, 1986 and 2012a. In particular, it would help inform debate on fiscal policy in the Oireachtas and in civil society generally.

Secondly, to estimate the macro-economic impact of fiscal policy it is important to separate the effects of the economy on the public finances from the effects of discretionary changes in fiscal policy on the wider economy – separate the chicken from the egg! The recent EU Treaty on fiscal responsibility acknowledges the importance of this task by casting targets for government borrowing in terms of the structural deficit<sup>7</sup>. However, while this is the correct approach to understanding what fiscal policy is doing, it is difficult to implement in practise.

One example of the approach used to calculate the structural deficit is that employed by the EU Commission. They derive the structural deficit by applying the same economic model to each member state; some of the key parameters in the model are identical for each country, in spite of clear differences in economic structure. They use this model to first calculate potential output – the level of output that is sustainable on a long-term basis. They then calculate the implications of this level of output for the public finances and show the difference compared to the actual outturn for a particular year (where the actual outturn is conditional on actual rather than potential output). The difference between the structural deficit and the actual deficit is then attributed to cyclical factors.

However, there are a number of problems with this approach when it is applied to the Irish economy, Bergin, *et al.*, 2010a and 2010b. The structure of the Irish economy is different from that of other economies in terms of the share of capital and labour in value added. Also, these shares are changing over time, rather than being constant. However, the most serious problem with the EU mandated methodology<sup>8</sup> is that it derives the "non-accelerating wage rate of unemployment" (NAWRU), a crucial element of the model, using a moving average of past unemployment rates. As the process gives a substantial weight to recent experience, it produced a very low NAWRU for Ireland up to the crisis, underestimating the inflationary pressures in the labour market. By contrast, it produces a very high

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<sup>6</sup> Last year the government national debt figure double counted one element of the debt because of a failure to take account of the complexities of the accounting approach being used. See <http://www.finance.gov.ie/documents/publications/reports/2012/externalrevdept.pdf>.

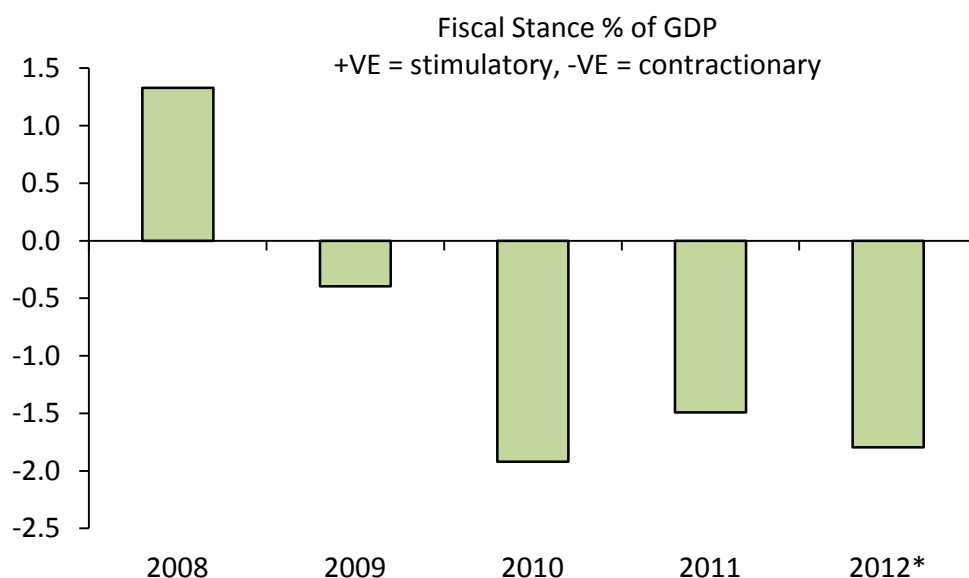
<sup>7</sup> The structural deficit is the deficit that would exist if the economy was producing at its potential. The difference between the actual deficit and the structural deficit is then attributed to cyclical factors, which result in the economy producing below potential.

<sup>8</sup> EU officials stress that this is the methodology they are mandated to use. In private they accept that it has limitations and they do not claim that it is appropriate for all countries and all circumstances.

structural (NAWRU) unemployment rate for Ireland after the crisis that takes no account of how the labour market actually operates. In turn, this produces very strange results for potential output.

As long ago as 2003, the Department of Finance drew attention to the problems with the methodology used by the EU Commission, Department of Finance, 2003. When the methodology was applied to Ireland it produced perverse results. For example, the *Stability Programme Updates* using this methodology published with the Budgets for 2005, 2006 and 2007 all suggested that budgetary policy in the relevant year was contractionary whereas, as Kearney 2012 shows, it was expansionary. *De facto* the Department of Finance, in repeatedly raising concerns with the methodology, recognised that this was an incorrect conclusion. If anyone had believed this interpretation of the economy they would have concluded that fiscal policy was appropriate whereas, even at the time, it was clear that it was too stimulatory, FitzGerald *et al.* 2005. This year, in the *Stability Programme Update* published with Budget 2012, the application of the EU methodology to Ireland suggested that that the Irish economy would show signs of overheating in 2014 and 2015. In the face of such a conclusion, the Department of Finance, in a rather deadpan way, said that such a conclusion "does not appear realistic".

**FIGURE 1** Estimate of Fiscal Stance



Source: Kearney, 2012.

There is a range of different approaches to estimating the impact of fiscal policy on the economy and Kearney *et al.*, 2000, discussed their advantages and disadvantages. Kearney, 2012, has applied one of these approaches, which appears robust and straightforward, to derive the results set out in Figure 1. In that paper she



used the indexation rules in the HERMES macro-economic model to compare what would have happened to government borrowing each year if the government had adopted a "neutral" budgetary stance – neither pumping money into the economy through discretionary changes nor taking it out – with the actual outturn. In this case a neutral policy is characterised as one where there is no change in tax rates (excepting indexation of specific excise taxes) and no change in real welfare rates<sup>9</sup> or in the volume of government expenditure.

The results, shown in Figure 1, indicate that the budgets of 2010-2012 were seriously contractionary, given the amount of money that the government, of necessity, had to take out of the economy. This come as no surprise. However, on the face of it, the rather limited contraction arising from the 2009 budget looks surprising. The fact that the 2009 budget was not seriously contractionary was due to the fact that prices were falling. This meant that, even with cuts in expenditure in nominal terms, the real value of that expenditure in some cases increased. This was particularly important in the case of transfers (welfare payments). While payment rates were held constant (or suffered a limited reduction), the real value of the transfers increased and this is reflected in the results in Callan *et al.*, 2012. The analysis in this latter paper indicates that the 2009-11 budgets, when taken together, were quite redistributive in their impact.

Kearney, 2012, also puts the current fiscal adjustment in the context of the previous major fiscal adjustment in Ireland in the 1980s. This shows that the current period of fiscal adjustment, while more severe than that of the average of the 1982-6 period, is actually less severe than the adjustment over the period 1987-9. While this does not make the current period of austerity feel any better, the fact that the economy recovered in the 1990s from the after effects of the cuts of the 1980s does provide some reassurance that austerity does not necessarily do serious lasting damage to the potential growth rate of the economy<sup>10</sup>.

Having identified the size of the "discretionary" change in fiscal stance in each of the years 2010-2012, it is useful to consider what has been the impact of this "austerity" on the wider macro-economy. In modelling the impact of a tightening of fiscal policy in any country there are four main channels through which it can affect output.

<sup>9</sup> Hermes uses a weighted average of the private consumption deflator and the average wage rate to index welfare payments.

<sup>10</sup> The economy in 1990 was significantly below EU average output levels leaving significant scope for catch up. This is not the case today.

Firstly, a contractionary fiscal policy, by taking money out of the economy, serves to reduce domestic demand. In turn, this has negative multiplier effects affecting output and employment. While in a small and very open economy these effects will be more limited than in closed economies, Barrell, *et al.*, 2009,, they are, nonetheless, quite significant. Such a contraction in domestic demand has other more complex effects on the economy. For example, it reduces inflationary pressures, especially in the labour market, improving competitiveness and raising potential output in the future. To estimate the final impact on an economy of a contractionary fiscal policy requires an economic model that captures these different mechanisms. Below we describe the results obtained using the HERMES model to undertake this analysis for Ireland.<sup>11</sup>

Secondly, where a country has a separate currency with an independent Central Bank and a separate monetary policy, a tightening of fiscal policy, *ceteris paribus*, will generally result in a loosening in monetary policy.<sup>12</sup> This is because a tightening of fiscal policy has a deflationary effect allowing the Central Bank to cut interest rates. Such a loosening can, to some extent, offset the negative impact on domestic demand of the fiscal tightening. However, this is not applicable to individual EMU members as the ECB sets monetary policy conditional on inflation expectations at the level of the Euro Area. Thus fiscal action in any individual member of the EMU will not result in offsetting monetary policy action by the ECB. In addition, when interest rates are already very low (as they are in EMU, the UK and the US), it is not possible to use standard monetary policy to offset a contractionary fiscal policy.

The third channel through which fiscal policy can affect the economy is by means of its effect on financial markets' perception of risk. Before EMU, the potential effects of exchange rate changes resulted in a substantial risk premium attaching to cross border lending. However, with the advent of EMU and the ending of exchange rate risk this channel was largely ignored within EMU until the crisis hit.<sup>13</sup> However, since 2008 we have seen how the bond markets have reacted in an extreme manner to the uncertain state of the public finances in countries such as Ireland. It is now clear that financial markets' perceptions concerning the sustainability of the public finances in Ireland have had a very big impact on interest rates. For example, the high risk premium charged on government borrowing in Ireland and Spain is also

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<sup>11</sup> The HERMES model was specifically designed for such a task, Bradley *et al.*, 1993 and Bergin *et al.*, 2003. The results discussed here are based on the work of Kearney, 2012.

<sup>12</sup> This depends on the objectives of the Central Bank.

<sup>13</sup> Honohan, 1999, considering the pre-EMU period, comments on how interest rates in Ireland rose in 1986 when it appeared that fiscal action to tackle the deficit might be abandoned by an incoming government. (In fact, the new government redoubled the efforts at fiscal adjustment and interest rates fell when this became clear.)

affecting domestic utilities and business in those economies.<sup>14</sup> What this means is that even within EMU, the interest rate charged to the government, and also to domestic agents, is affected by fiscal policy. A sustained reduction in borrowing will, over time, produce a reduction in interest rates. When this factor is taken into account, it significantly affects the interpretation of the more standard multiplier approach to assessing the impact of fiscal policy. The IMF in their *World Economic Outlook* provided a good discussion of the literature on the importance of this channel, IMF, 2010. This issue was addressed in Bergin *et al.*, 2010b in analysing the impact of the fiscal policy stance on the Irish economy.

The fourth channel by which fiscal policy affects the economy is through its effect on the stock of debt. While borrowing money to fund expenditure in the current year may raise demand and GDP, the interest paid on that debt in future years will reduce growth in the second and subsequent years. Whether the effect on national welfare of the cumulative cost of future interest payments offsets the benefits of the impact effect of the stimulus depends on the rate of interest paid and the rate of time discount of the public.

Here we analyse the possible impact of the fiscal policy stance for the years 2010-2012 taking account of only the first channel – the multiplier effects on domestic demand. The major drawback to this analysis is that, while it captures the negative impact effects of the austerity, it takes no account of the impact of the austerity on interest rates for government borrowing in the long term, where domestic government bond rates include a very substantial risk premium relative to German rates. However, this analysis is, nonetheless, useful in helping understand the recent performance of the Irish economy, in particular in the year in which the cuts were implemented.

Since Ireland entered into the agreement with the *Troika* in December 2010, interest rates for government borrowing have been set exogenously as part of that evolving agreement with the lenders. Thus government interest rates in the short run in Ireland have not been directly reduced as a result of the contractionary stance of fiscal policy.<sup>15</sup> This has meant that the full negative multiplier impact of the contractionary fiscal stance has been felt by the economy. However, we are seeing how fiscal policy action to bring the public finances under control is beginning to influence the market rate for government bonds. It is this latter rate which will be

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<sup>14</sup> The contrast between the experience of Irish companies and companies in stronger EMU member states is illustrated by what happened in the first week in September 2012 when the Irish Electricity Supply Board raised funds at 6.25% a year whereas Electricité de France paid 2.7%.

<sup>15</sup> However, it is clear that the Troika would not have funded the Irish adjustment without such a fiscal stance- the cut in interest rates came before much of the adjustment.

relevant if and when the Irish government returns to funding itself on the market from 2014 onwards.

Here we use the HERMES model to analyse the impact of the discretionary changes in fiscal policy, shown in Figure 1, over the period 2010 to 2012. The discretionary changes in different categories of taxation and different categories of expenditure were analysed in Kearney, 2012, and we use the model analysis underlying that paper to estimate the overall multiplier effect. When the effects of the different fiscal measures are aggregated for each year we arrive at the overall impact on the economy in that year. For simplicity we do not consider the effects in the second and subsequent years after each budget.

The results suggest that the effect of discretionary fiscal policy on the growth of GDP ranged from minus 0.6 per cent in 2010 to minus 1.0 per cent in 2012. Thus, in the absence of the necessary contractionary fiscal policy, there would have been no fall in output in 2010 and real growth in 2011. This year, 2012, the effect of the necessary tightening of fiscal policy is to reduce the rate of growth in GDP from around 3 per cent to the current forecast of 2 per cent. As indicated above, these estimates take no account of favourable effects of austerity on interest rates, future interest payments and, hence, future growth.

#### 4 PAST EXPERIENCE OF FISCAL ADJUSTMENTS

In understanding how the current sustained period of fiscal adjustment may affect the economy, it is useful to look at previous Irish experience in the 1980s and also at the experience of one or two other countries that also had periods of sustained adjustment. The Irish experience of fiscal adjustment in the 1980s has been analysed in many papers (Honohan, 1999 and Honohan and Walsh, 2002, Perotti, 2011). Some of the conclusions drawn in early research in the 1990s (the "expansionary fiscal contraction") have not stood the test of time.<sup>16</sup>

A good summary of the literature on fiscal adjustment is provided in IMF, 2010. Among the more robust conclusions are that fiscal consolidation is, generally, contractionary, Guajardo, Leigh and Pescatori, 2011, and cutting expenditure is generally more successful than increasing taxes. If nothing else, because of the difficulty in implementing cuts in expenditure their implementation demonstrates greater commitment to reform than increases in taxation; this may prove more convincing to citizens and to markets. In practice, both cuts in expenditure and increases in taxation are generally necessary for a successful adjustment. Because of

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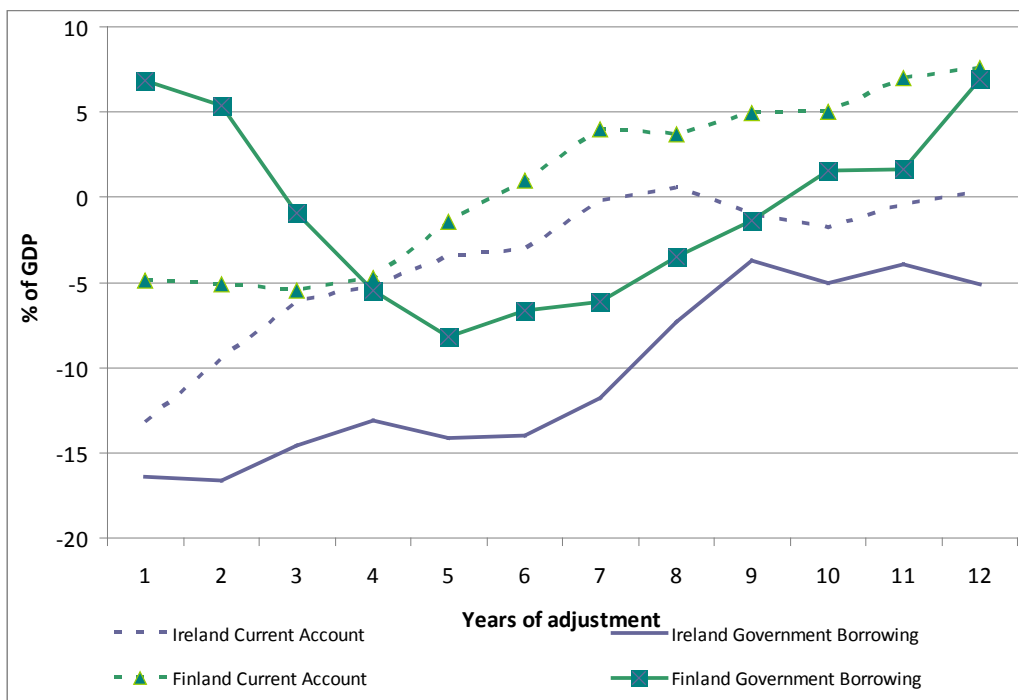
<sup>16</sup> See Bradley and Whelan, 1997.

the low tax take in Ireland at the beginning of the current crisis both Honohan, 2008, and Lane, 2008, recommended increasing taxation as well as cutting expenditure as part of the necessary fiscal adjustment this time out.

In the last major economic crisis in Ireland, the early 1983-4 period of that crisis saw increases in taxation and cuts in capital expenditure, but no major cuts in current expenditure. As Kearney, 2012, shows, there was then a premature easing off in the fiscal adjustment in 1986 and it had to be recommenced with renewed vigour in the 1987-9 period. In this latter period a major part of the adjustment involved cuts in current expenditure. With the benefit of hindsight it would have been better to have undertaken the 1980s adjustment in a tighter time scale, Honohan, 1999. Also, in the initial phase it should have prioritised cuts in current expenditure. Nonetheless, the adjustment of the 1980s also necessitated an increase in taxation, though this increase should have been implemented in a different manner than was actually the case, Honohan and Irvine, 1987.

The experience of Ireland in the 1980s and of Finland and the UK in the 1990s is interesting in the current context as they all had to undertake large fiscal and current account adjustments. This is similar to the situation in Ireland and Spain in 2008 and 2009. In each case the countries involved were living beyond their means and both the imbalance on the current account of the balance of payments and the imbalance in the government accounts needed to be addressed.

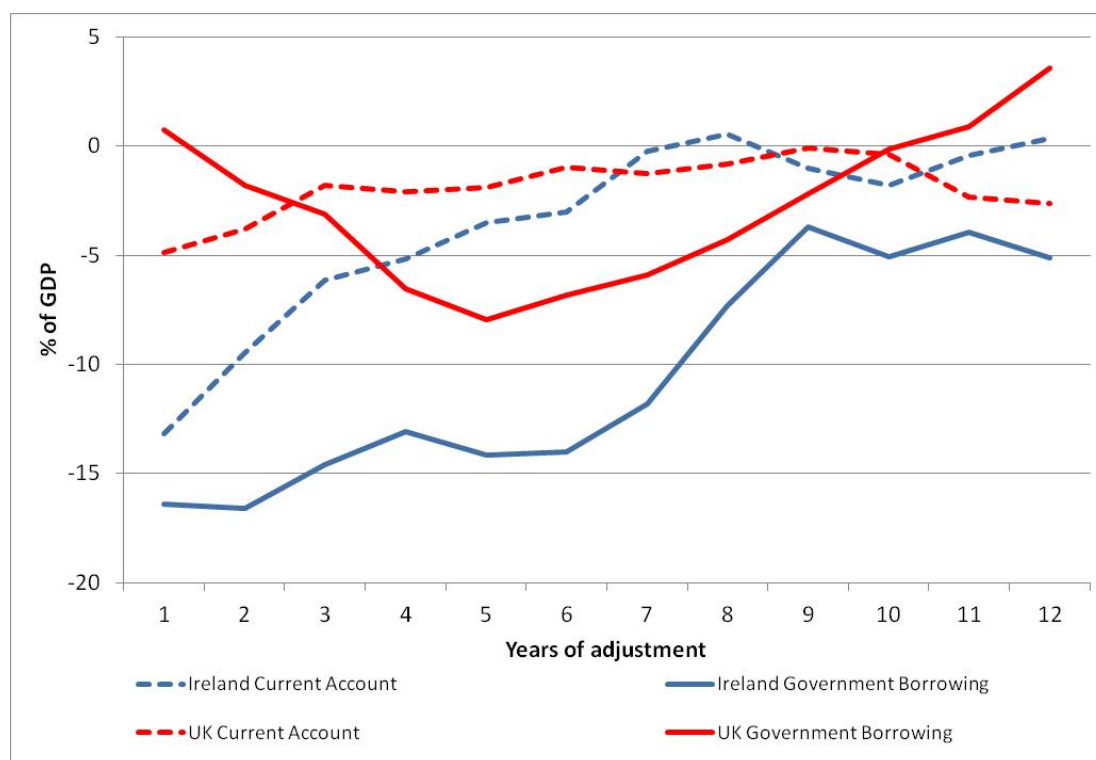
**FIGURE 2** Adjustment in Government Borrowing and in the Current Account, Ireland and Finland



On the x axis the years are numbered from the beginning of the adjustment in each country.  
Source: EU AMECO database.

The experience of Ireland in the 1980s, and Finland and the UK in the early 1990s all suggest a certain pattern to such adjustments. The tough fiscal adjustment, when commenced, results in a major fall in domestic demand affecting output (GDP). In turn, this results in a big improvement in the current account of the balance of payments (Figures 2 and 3). This initial improvement in the current account normally occurs as a result of the reduction in domestic demand and, hence, in imports. However, the improvement in the underlying government structural deficit is masked by the negative cyclical effects of the reduction in growth arising from the contraction in domestic demand. It is only when the necessary adjustment in the structural deficit nears completion, and the negative multiplier effects of the contractionary fiscal policy ease off, that the full reduction in government borrowing becomes apparent.

**FIGURE 3** Adjustment in Government Borrowing and in the Current Account, Ireland and the UK



On the x axis the years are numbered from the beginning of the adjustment in each country.

Source: EU AMECO database.

Figure 2 shows the path of government borrowing and the balance on current account for Ireland over the years 1981-1991 and compares it to the adjustment in Finland between the years 1989 and 1999. Figure 3 compares Irish adjustment in the 1980s with that in the UK between the years 1989 and 1999. In these three cases the adjustment first took place in the current account balance, as contractionary fiscal policy affected growth and domestic demand. This, in turn, affected the government accounts in a negative feedback loop. This meant that much of the reduction in the government structural deficit was initially offset by a rise in the cyclical deficit. It is

only once the contractionary fiscal policy neared completion that the cyclical effects on the deficit disappeared and the actual deficit then improved more rapidly.

In each case the adjustments took the best part of a decade and the improvement in the current account preceded the improvement in the government balance. When accompanied by world growth, as was the case for Ireland in the late 1980s, the adjustment was less painful. In the case of Finland the fact that there was also a financial crisis aggravated the initial loss in output. Also, in these three cases the exchange rates of the relevant economies were not fixed.

We are seeing a rather similar adjustment pattern in Ireland in recent years. There has already been a very substantial turnaround in the current account of the balance of payments in Ireland, with a substantial surplus in prospect this year, following on surpluses in 2010 and 2011. The progress on government borrowing, as measured by the actual deficit rather than the structural deficit, is much slower. However, if Ireland in the future follows the pattern of these three earlier adjustment episodes, once the structural deficit has been eliminated and austerity ends, a return to "normal" growth is likely to result in a further reduction in the cyclical component of the deficit.

## 5 FISCAL ADJUSTMENT TO DATE

From the summer of 2008 onwards the Irish fiscal position deteriorated very rapidly. Beginning in autumn 2008 with the Budget for 2009, the authorities responded to this deterioration with an austerity package designed to stabilise the deficit. However, the speed with which the deficit widened over the autumn and winter of 2008, even in the face of these measures, warranted a supplementary budget in the spring of 2009. It was not until 2010 that the measures undertaken were sufficient to see the deficit begin to stabilise (excluding once-off funding for the banking system). Table 1 summarises the *ex ante*<sup>17</sup> measures undertaken over the period 2008-2012; in total they were equivalent to almost €24 billion or 14.8 per cent of GDP<sup>18</sup>. By the end of 2010 the general government deficit had stabilised, albeit at the very high level of 11 per cent of GDP (excluding costs of bank recapitalisation).

In November 2010, the then Irish government published plans for a fiscal adjustment programme for the period 2011 to 2015. This was designed to bring the deficit below

<sup>17</sup> As discussed later, the effect of announced cuts on the government deficit is typically substantially less than the amount of the actual cut because of the negative multiplier effects. In addition, many "changes" in government expenditure and taxation are not meaningful changes in an economic sense as they are just compensating for the effects of inflation – they don't involve a volume change.

<sup>18</sup> The total fiscal adjustment is first expressed as a percentage of the nominal GDP for each year and the numbers for each individual year are then summed to give the period total.

3 per cent of GDP by the end of the adjustment period in 2015. This plan was then adopted without significant change in December 2010 as part of an agreement underpinning the package of loans from the EU/IMF designed to help fund Irish debt over the period 2011-2013. In this sense it is an Irish strategy for addressing the crisis, not one imposed from outside.

**TABLE 1** Summary of Actual and Planned Austerity Measures over Period 2008-2015, €bn.

	2008-2010	2011	2012	2013	2014	2015	2011-2015
Revenue	5.6	1.4	1.6	1.3	1.1	0.7	6.1
Expenditure	9.2	3.9	2.2	2.3	2.0	1.3	11.7
<i>of which Capital</i>	1.6	1.9	0.8	0.6	0.1	0.0	3.3
Total	14.7	5.3	3.8	3.5	3.1	2.0	17.7
Per cent of GDP	9.2%	3.3%	2.3%	2.1%	1.8%	1.1%	10.6%

Source: Department of Finance Budgets. GDP figures revised based on CSO: *National Income and Expenditure, 2011* and Duffy, *et al.*, 2012.

As shown in Table 1, roughly two-thirds of the actual and planned austerity package over the period 2011-15 relates to cuts in expenditure, both current and capital. In 2009 and 2010 significant cuts in public sector pay levels<sup>19</sup> were introduced, equivalent to up to 15 per cent of gross salary. There have also been very large cuts in expenditure on capital projects. On the revenue side, taxes on income have been raised substantially over the period 2009-11. In the next three years, 2013-2015, the planned consolidation measures total €8.6 billion, or 5 per cent of GDP. This means that approximately three quarters of the planned cuts over the period 2008-2015 of almost 20 per cent of GDP have already been implemented.

**TABLE 2** Official Target Deficit on General Government Balance (excluding banking transfers).

	2011	2012	2013	2014	2015
€ billion	14.7	13.1	12.4	8.1	5.0
% of GDP	9.2	8.0	7.3	4.6	2.7
Target deficit at end 2010:					
% of GDP	10.6	8.6	7.5	5.1	2.9

Source: Department of Finance *Stability Programme Update*. The figures for the GGB in € billion in that document have been expressed as a percentage of the rebased numbers for nominal GDP using the latest CSO *National Income and Expenditure, 2011*.

Table 2 takes the revised target General Government Balance (GGB) in € billion, announced by the previous government, and updated by the incoming government in Budget 2012, and expresses it as a percentage of the latest estimates for GDP. These GDP figures have been revised to take account of the latest CSO *National Income and Expenditure, 2011*. Table 2 shows that the outturn for the GGB for 2011 and the forecast outturn for 2012 are significantly ahead of the target set at the end of 2010. No account has been taken here of knock-on effects of the outperformance

<sup>19</sup> This includes the pension levy, which in national accounting terms is treated as a pay cut.



in 2012 on the deficit for later years. However, in Table 2 we have taken account of the upward revisions to the GDP figures by the CSO in the summer of 2012. Assuming that the fiscal effort remains as planned (defined in terms of € billion of cuts) and that there is no major change to the economic forecasts for 2013-15, this would suggest that a continued outperformance is possible. This leaves significant leeway to ensure that the deficit targets are met, even if there were a downward revision in GDP forecasts for the period 2013-15.

With the benefit of hindsight, the plan drawn up in November 2010 by the Department of Finance and the outgoing government did not over-promise, which was a wise decision. By making very conservative assumptions on the response of the public finances to economic performance, they built in very considerable scope for outperformance. However, while the economic forecasts at the time looked conservative, as it has turned out they were not conservative enough because of the unexpected continuation of the crisis at an EU level. Thus, even with a more disappointing background economic performance, the public finances have continued to outperform the targets set in the 2010 plan. This is reassuring to the financial markets.

A second aspect of the 2010 plan was that it did not promise to make the adjustment to the public finances more rapidly than was readily deliverable by the outgoing government or, even more important, by the incoming government. At the time, in autumn 2010, in order to minimise the long-term economic damage it might have been wise to make the fiscal adjustment more rapidly. However, if a more accelerated adjustment programme had been chosen and if it had proved undeliverable politically this would have served only to demoralise, damaging consumer and investor confidence.

**TABLE 3** Spanish Targets for Government Borrowing, % of GDP

Stability Programme Update of:	2010	2011	2012
2010	9.8	7.5	5.3
2011		6.0	4.4
2012	9.3	8.5	5.3

Source: Spain, Stability Programme Updates.

The relative success of this adjustment to date is highlighted by comparing the approach taken in Ireland with that taken in Spain. At the beginning of 2010 the then Spanish government, Spain, 2010, committed to cutting the GBB for Spain from 9.8 per cent of GDP in 2010 to 7.5 per cent in 2011 and 5.3 per cent of GDP in 2012 (Table 3). However, in April 2011 the then government revised this target for 2011 down to 6 per cent of GDP and the target for 2012 down to 4.4 per cent of GDP. As it

has turned out, partly because of the renewed slump in the EU economy, the deficit for 2011 proved to be 8.5 per cent of GDP, not 6 per cent. In addition, the target for 2012 has now had to be revised back up to 5.3 per cent of GDP, the same target that had originally been set in the Stability Programme Update in early 2010, Spain, 2011 and Spain, 2012.

The adjustment in the Spanish public finances planned in April 2011, Spain, 2011, was much more ambitious than was the case in Ireland. However, because of a failure to meet this more ambitious target, the financial markets have now lost faith in the ability of the new Spanish government to deliver and Spanish bond yields have risen above bond yields for Ireland. By contrast, in the case of Ireland, sure but steady progress has been rewarded.

## 6 STRATEGY FOR FISCAL POLICY 2013-2015

### 6.1 Budget 2013

As argued above, the fiscal strategy for tackling the current crisis, which was put in place at the end of 2010, was broadly appropriate. The chosen adjustment path was predicated on an assessment of the prospective growth in the potential output of the economy. Having agreed an appropriate strategy, and having successfully implemented it over nearly two years, it should only be changed if new information appears suggesting that the potential output of the economy is significantly lower than previously understood (and hence the structural deficit is higher than expected). To date the tradable sector<sup>20</sup> of the economy has behaved as one would expect – it has proved reasonably robust in the face of the huge shock to the rest of the economy<sup>21</sup> – indicating that the potential output of the economy is robust.

The overriding priority for fiscal policy next year will be to continue the process of restoring the public finances to sustainability. Because of the uncertainty inherent in any forecasts of the future it is important to try and frame policy on a "no regrets" basis: to ensure that whatever the outcome on economic growth, fiscal policy will not be inappropriate. As discussed above, with the current plan there was significant scope for outperformance. That means that, even if growth in the EU is disappointing next year, the target for the deficit may still be achievable. However, if the EU economy continues in recession, and if that were the reason that targets might not be met, a resulting higher than expected deficit would be attributable to cyclical factors, not a change in the structural deficit. Under these circumstances the fiscal stance should not be adjusted as the cyclical factors, of their nature, would

<sup>20</sup> The tradable sector includes manufacturing and a significant part of the market services sector that also exports extensively.

<sup>21</sup> FitzGerald, 2012b.

eventually be reversed. This is also the approach to policy taken by the IMF in their recent report on the Irish economy where they recommend sticking to the current adjustment plan, even if the targets were to be missed due to lower than expected EU growth, IMF, 2012.<sup>22</sup>

While the public finances have outperformed the plan to date, there is still a long way to go before sustainability is guaranteed. Thus it is much too early to start "coasting" and ease off on the adjustments required in 2013-15. Hence the cuts planned for 2013 should be implemented in full in the coming Budget, as is required by the agreement with the *Troika*. (This would be the correct policy to follow even if there were no agreement with the *Troika*.) This will involve cuts or tax increases amounting to €3.5 billion *ex ante* next year. There will be some carryover from the decisions announced in the Budget for 2012 which will reduce, to a limited extent, the new measures to be taken next year. Nonetheless, achieving the full planned cut in expenditure next year of €2.3 billion will be very difficult.

A rather different approach was proposed by the Irish Fiscal Advisory Council (IFAC, 2011 and IFAC 2012). They argued for a much more rapid adjustment in the public finances. In particular they sought cuts for 2012 of €4.4 billion rather than the €3.8 billion implemented in the Budget. They argued that such a change in policy was warranted because the government might not meet their target for the deficit, especially in 2012, and also because they felt that it was desirable to reduce the actual deficit more rapidly than planned to 1 per cent by 2015.

The arguments concerning the likely outturn for 2012 centred on the unexpected weakness in economic activity, not a reassessment of the potential output of the economy. As argued above and in IMF, 2012, fiscal strategy should not be altered where targets are not met because of purely cyclical factors. In any event, as discussed above, in spite of the unfavourable external economic environment, it now seems likely that the deficit for 2012 will still come in ahead of target, Duffy, Durkan and Casey, 2012.<sup>23</sup>

As discussed earlier, previous experience with fiscal adjustments suggested that there might have been advantages to targeting a more rapid adjustment than was eventually agreed in 2010. This is a view clearly shared by IFAC. However, having

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<sup>22</sup> Outside the range of "normal" forecasts there is still the unlikely possibility that the euro area could collapse over the next eighteen months. Today this seems very unlikely, not least because of the very adverse consequences for all EMU members. If it did happen the consequences for Ireland would be very serious. However, there is no way of "insuring" against these very serious consequences through the choice of an appropriate use of fiscal policy.

<sup>23</sup> The assessment by IFAC may also have been affected by the very unsatisfactory nature of the statistics available, which has meant that the full reduction in borrowing last year has only become apparent in recent months.

adopted a workable plan and having implemented it successfully for two years, a lot of credibility has been built up with financial markets and with the people of Ireland. To signal a change in policy now could discredit the policy. The question could then be asked of the planned fiscal adjustment "if it is not broke why fix it?". In addition, when comparing the Irish adjustment with that in Spain, there is a lot to be said for setting politically achievable targets which will actually deliver the planned fiscal adjustment. Hence there are good reasons why the "bar" should not be raised today by planning for even tougher measures in 2013.

In summary, having set out an appropriate medium-term fiscal plan, it is best to stick to it unless there is new information suggesting that the size of the structural deficit is substantially greater than previously estimated. This approach builds credibility with citizens and with financial markets. To date this has meant that the outperformance on the public finances has been reflected in lower deficits rather than in any modification in fiscal stance. However, should the effects of cyclical factors see the deficit exceed the target in a particular year, it would also be appropriate to leave the fiscal stance unchanged.

## 6.2 Medium-Term Fiscal Strategy

The medium-term fiscal plan involves further fiscal tightening in 2014 and in 2015. As with 2013, in the absence of any new information about the structural deficit, it is appropriate to stick to this plan. It is possible that by 2015 the structural deficit might still be significant but it is also possible that it could have disappeared by that date. As argued in Bergin *et al.*, 2010b, much will depend on the timing of a return to growth in the EU economy. With reasonable EU growth in 2013, once the fiscal adjustment is largely completed, there is a likelihood that the Irish economy will also return to significant growth. Even if the response were somewhat less satisfactory, with a substantially delayed EU recovery, so that a small structural deficit (but a larger than planned actual deficit) remained in 2015, the task of eliminating it would be still be manageable. However, if events in the coming years suggest that the growth rate of potential output is much lower than that currently envisaged, then a further tightening in fiscal policy would be necessary. Until we get closer to the end date of the current adjustment (2015) and there is greater clarity about the potential output of the Irish economy (and hence the structural deficit) it is best to stick to the agreed package of cuts and tax increases.

It is important for the future of the economy that the structural deficit is eliminated by the middle of the decade. This imperative stems from the needs of Irish people, not from an external rule (or fiscal treaty) – high rates of interest affect the trade off between current consumption and future consumption. Eliminating the structural

deficit by the middle of the decade will produce higher growth in the long run and will be welfare improving in the long run.

Once the structural deficit has been eliminated, what should happen to fiscal policy? It will almost certainly be appropriate to run a surplus over the economic cycle post 2015. However, as discussed earlier, it should be stressed that a surplus does not constitute a contractionary fiscal stance. It is the change in the structural surplus or deficit which affects the economy. Once the desired surplus is achieved, maintaining a structural surplus unchanged over time would not involve contractionary (or stimulatory) effects on the economy: it would be neutral in its economic effects, contrasting with the strong negative impulse coming from fiscal policy today.

### 6.3 Reducing the Debt

As well as eliminating current borrowing, an important task of fiscal policy will be to reduce the burden of debt to a safe level over a period of years. A lot of attention has focused elsewhere at EU level on this need to reduce the indebtedness of states. This is undoubtedly important to ensure that states will in future be in a position to deal with new shocks. In the case of Ireland there is also the issue that, while it faces favourable demographics out to 2025 or 2030, it would be appropriate to rebuild a buffer of assets (reduce debt) to insulate against the economic costs of ageing post 2030.

The traditional approach taken by the EU and the IMF to the issue of debt reduction suggests that Ireland run a substantial surplus over the period to 2030 to get the debt/GDP ratio back down to 60% by that date. The objective of debt reduction is correct but much of this discussion on debt reduction has ignored the most appropriate and least costly way to bring about a substantial once off reduction in Ireland's indebtedness. This would involve returning the nationalised banks to profitability and eventually selling them off later this decade to recoup a substantial part of the state's forced investment in them.

As of July 2011, according to the stress tests, the book value of the not-so-bad banks<sup>24</sup> was around 20% of GDP. Nonetheless, if sold today they would not find a buyer and the valuation of the state's investment in the banks by the National Pension Reserve Fund is very low. This reflects the continuing uncertainty about the future of the economy and of the banks themselves. A key objective for the government must be to first return the economy to growth and then to return the banks it owns (or part owns) to profitability. Later in the decade these profitable banks should be sold. This could achieve a once off major reduction in the debt/GDP level.

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<sup>24</sup> AIB, Irish Life and Permanent and the Bank of Ireland.

The big danger to such a favourable outcome is, firstly, that the EU and Irish economies do not return to growth within a reasonable time scale. However, if growth is restored then the second policy danger is that the state, as shareholder, could fritter away its investment in these banks by forgiving debt that would otherwise be repaid, or selling assets at fire-sale prices. Such a mistake could be very costly for the people of Ireland and it would also necessitate running a significantly larger government surplus over the longer term than would otherwise be necessary.

A simple way of ensuring value for money from the surviving banks (excluding the IBRC) would be to swap the government's equity in the banks, valued as at July 2011, with the EU ESM, in return for debt. This would involve no further payment by the ESM to Ireland – it would merely swap debt owed by Ireland for equity (shares in Irish banks) currently owned by the government. Such a deal would ensure that the debt/GDP ratio fell dramatically at an early date, further facilitating the return to sustainability. The ESM would also have a stronger and clearer incentive to ensure that the banks are returned to profitability than does the Irish government. In the ownership of the EU (through the ESM) the banks could prove to be a more valuable long-term asset than if left in Irish hands.

As a result of developments at the European Council in June 2012 such a solution, which might previously have been unthinkable, is now being seriously discussed. Hopefully these discussions will reach a successful conclusion before the end of the year. However, a successful outcome must await a similar deal being implemented for Spain.

The reason for awaiting a Spanish deal is that such an agreement could involve all the capital needs of the Spanish banks being met by new EU investment. A significant part of such an investment in Spanish banks would be designed to cover as yet unrealised losses in those banks. In the case of Ireland much of these losses have already been realised and this is reflected in the reduced valuation of the banks today. If Ireland was negotiating on its own, it might be difficult to make the case for such an approach to valuing the Irish banks (at their 2011 value). However, were such a deal to be negotiated for Spain, there would be strong equity reasons for applying a symmetric approach to Irish banks, even though Ireland is much further down the road to restoring its banks to normal operations. In any event, once the Irish banks were restored to running order, with an economic recovery the EU would have a good chance of recovering all of its investment. From an EU point of view the downside to such a deal would be the risk of a failure to return the EU economy to normal running order within a reasonable time scale, resulting in both the Irish economy and the value of its banks underperforming in the future. However, the EU itself is best placed to take policy action to avoid such an outcome.

#### 6.4 Fiscal Policy – the Details

So far the focus of this paper has been on the overall stance of fiscal policy, not its composition. However, there is extensive evidence to guide us on how best to make the necessary cuts in expenditure and increases in taxation. Some of this evidence is provided by papers at this Budget Perspectives Conference, as well as at previous Conferences. In choosing the appropriate mix of instruments the priority for policy should be to maximise the future growth in employment. Reversing the dramatic rise in unemployment is clearly a primary goal for policy, with both economic and social benefits.

Conefrey *et al.*, 2012, provide a ranking of taxes in terms of their impact on employment. The results of this research are consistent with the conclusions of the Commission on Taxation, 2009. This research suggests that a tax on property would have less damaging effects on employment than carbon taxes (followed by other indirect taxes). Taxes on labour – income tax and social contributions – are likely to have the most negative impact on employment.

This suggests the importance of implementing a significant tax on property. Callan *et al.*, 2010 and Keane *et al.* 2012, show how a property tax can be designed to meet a range of objectives, including distributional objectives. Even with some links to ability to pay, a property tax would have little impact on marginal tax rates in employment and would have a minimum negative impact on employment.

Water charges, if implemented as part of the development of a new efficient water service, are also likely to bring efficiency gains, offsetting some of the negative effects of their cost for households, FitzGerald and Morgenroth, 2012. What will be important will be to structure the new utility to ensure that these efficiency gains are realised in practise.

Callan *et al.*, 2009a and 2009b, have considered a range of other issues. In particular, there appear to be significant advantages to bringing child benefit payments within the tax system. This would have a less negative impact on employment than would increases in other direct taxes; it would also have favourable distributional effects and could be implemented in a way that reduced potential poverty traps. The extent and causes of "unemployment traps" is examined in detail in another paper to this conference, Callan *et al.*, 2012.

Significant cuts in current expenditure for future years are already announced. Reductions in the cost of providing services would have a less damaging effect than cuts in the services themselves. It remains to be seen whether "Croke Park" and any successor will deliver the necessary further reductions in the cost of public services.

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## 2. Benefit Integration in the UK: An Ex Ante Analysis of Universal Credit<sup>1</sup>

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### ABSTRACT

The UK Government is currently preparing to implement a major reform to the welfare system by integrating (and simplifying) means-tested welfare benefits and in-work tax credits for working-age adults into a single programme, to be known as Universal Credit, and to be phased in from October 2013. The primary motivation is not to save money (although many other changes to welfare benefits have been announced since May 2010 which will save the government money). Instead, the aims are to make it easier for claimants to claim benefits, make the gains to work more transparent, and reduce the amount spent on administration and lost in fraud and error. The reform will increase entitlements to welfare payments in a way which, on average, helps low-income (working) families more than middle-income families, especially for couple families. But many details remain unclear, including how Universal Credit will interact with the new, localised Council Tax Rebate system, how tough the conditionality regime will be, particularly for working families, and whether Universal Credit can be made to respond automatically to claimants' earnings in real-time.

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## 1 INTRODUCTION

The UK Government is currently preparing to implement a major reform to the welfare and tax credit system by integrating means-tested welfare benefits and in-work tax credits for working-age adults into a single programme, to be known as Universal Credit. This paper reviews the arguments for its introduction, and updates or summarises previous work that uses microsimulation methods to examine the way that this reform will affect families' benefit entitlements and individuals' financial work incentives.

This analysis should be seen as preliminary for a number of reasons. First, full details of how entitlements to Universal Credit will be set were not available at the time of writing (August 2012). The most significant of these is that it is not yet clear how the localised Council Tax Rebate will interact with Universal Credit (and so, as we explain later, the microsimulation work analyses a world without Council Tax Rebate).<sup>2</sup> Second, Universal Credit is likely to have complicated impacts on benefit take-up and labour supply behaviour which we have abstracted from here; these are likely to result not only from the changes to financial work incentives we describe in this paper but also the conditionality regime for Universal Credit, which will be different from, and in general tougher than, that which currently applies.

This paper is structured as follows. Section 2 gives an overview of the current system of means-tested benefits and tax credits in the UK, and the stated rationale for Universal Credit. Section 3 explains some of the key issues the Government had to confront having decided to integrate several benefits and tax credits, and outlines how entitlements to Universal Credit will be set, comparing this with the current set of means-tested benefits and tax credits. Section 4 gives a quantitative assessment of the impact of Universal Credit on household incomes and on measures of financial work incentives. Section 5 summarises and concludes. We note that the current (since May 2010) coalition UK government has announced many other changes to the benefit and tax credit system, which together will reduce welfare spending by £18 billion/year by 2014-15, but in this paper, we take those other changes as given: our analysis assesses the impact of the Universal Credit reform alone, rather than the overall changes to benefit entitlements and work incentives as will be experienced by families and individuals over the next few years; Brewer, Browne and Joyce (2011) forecast measures of income poverty in the UK through to 2020, including the impact of all welfare changes.

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<sup>2</sup> See Adam and Browne, 2012, for extensive analysis of the decision to localise council tax rebate.

## 2 UNIVERSAL CREDIT: WHY IS IT NEEDED? AND FROM WHERE DID THE IDEA COME FROM?

In November 2010, the UK government set out plans to integrate and simplify all means-tested welfare benefits and in-work tax credits into a single programme, to be known as Universal Credit and to be phased in from October 2013.<sup>3</sup> The government hopes that this will make it easier for claimants to claim benefits, make the gains to work more transparent, and reduce the amount spent on administration and lost in fraud and error.

To understand how the reform works, and why it was thought necessary, one needs to understand a little about the current system of means-tested social security benefits for working-age adults in the UK. One way to characterise this is that the UK has:

- separate, mutually-exclusive benefits providing income replacement to non-working families, or income top-ups to working families<sup>4</sup>, and
- separate but not mutually-exclusive means-tested benefits providing help with a family's extra costs; these can overlap both with each other and the income-replacement benefits.<sup>5</sup>

This is illustrated for a specimen family in Figure 2.1.

The current UK government argues that this leads to the following faults:

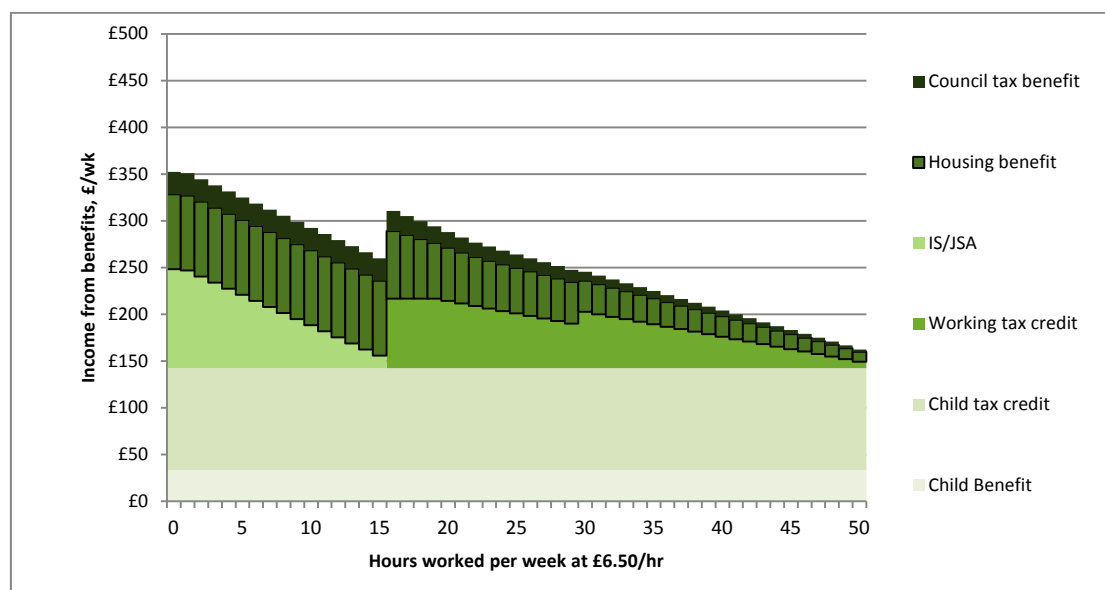
- Having separate, mutually-exclusive income-replacement benefits for families who are not in work is inefficient (for claimants and the government).
- Having separate benefits for those who are working fewer than 16 hours and for those who are working 16 or more hours adds an unwelcome barrier to those trying to move from not-in-work (or from "welfare") to work, and this particularly affects those with volatile working patterns.

<sup>3</sup> The original announcement was Department for Work and Pensions (2010a), with the thinking developed in Department for Work and Pensions (2010b).

<sup>4</sup> There are: Jobseeker's Allowance (JSA), intended for unemployed people, Employment and Support Allowance (ESA), intended for those too ill or disabled to work at the present; Income Support (IS), intended for other people, mostly lone parents with young children, who are not working and not expected to look for work; Working Tax Credit (WTC), intended for people who are in work but have a low family income.

<sup>5</sup> These are Child Tax Credit, Housing Benefit and Council Tax Benefit.

FIGURE 2.1 Current System of Welfare Entitlements for an Example Family



*Note:* The entitlements are based on an assumed couple with two children. Only one person in the couple is in work, and they can choose how many hours to work at a given wage rate, £6.50 per hour. The family has no disabled members and no unearned income. Their Local Housing Allowance (LHA) or eligible rent is £80/wk, and their council tax liability is £24 a week.

- Having overlapping benefits (i.e. instances where families are receiving more than one means-tested benefit) can be confusing for claimants, particularly when the rules for determining entitlements mean that the benefits interact.<sup>6</sup> Such interactions make the overall impact of the means-tested benefit system opaque, and create opportunities for claimants to be inconvenienced by delays in official bodies calculating entitlements.
- The inefficiency (for government) and confusion (for claimants) that arises by having overlapping benefits is particularly acute when they are administered by different authorities. In the UK, the Department for Work and Pensions administers JSA, ESA and IS, the revenue department (HM Revenue and Customs) administers tax credits, and local authorities administer HB and CTB; this means that claimants need to report their circumstances to more than one organisation (it also means that claimants could strategically report different information to different organisations).

These criticisms are, of course, not all new, but benefit integration seems not to have been a priority of the previous government. Some of the (many) changes between 1997 and 2010 did achieve some form of integration. For example, in 2003, the child tax credit brought together (and replaced) child-contingent support previously provided through add-ons to income-replacement and income top-up

<sup>6</sup> For example, entitlements to WTC currently depend in part upon a family's earnings, and entitlement to HB depends in part not only on a family's earnings but also directly on its entitlement to WTC; this complexity and confusion is compounded by the fact that entitlements to WTC and HB each depend upon a different measure of earnings.

benefits and a non-refundable tax credit: this, therefore, integrated the child-related components of different benefits, rather than integrating entire benefits. And in 2008, a single benefit (called Employment and Support Allowance, or ESA) was created designed for people who wished to claim an income-replacement benefit because they were too sick or disabled to work; before ESA, such people would receive one or more of two benefits depending on whether they had made sufficient past social insurance contributions. And the government did consider the idea of a comprehensive benefit integration: a Green Paper in 2006 came out in favour of a single working-age benefit, stating:

"We consider that there may be advantages in moving in the longer term towards a single system of benefits for all people of working age, with appropriate additions for those who have caring responsibilities and those with a long-term illness or disability."

And:

"The next step is to review the range of benefits to identify the challenges to creating a single system with fair and effective solutions."<sup>7</sup>

A year later, perhaps after identifying the challenges, it concluded that:

"developing a single, coherent system of benefits would take time – changes could be very disruptive if introduced in one go,"  
and that:

"a single system [i.e. an integrated benefit system] should be seen not as a fixed blueprint, but as a model which, along with our reform principles, informs the nature and direction of changes to the benefits system."<sup>8</sup>

Another year later, its ambitions had been both scaled down and slowed down:

"We want to explore whether, over the long-term, [a simpler system] can be achieved in a single benefit drawing on the best features of JSA, IS and the new ESA."<sup>9</sup>

We conclude that benefit integration was not an urgent policy priority for the previous government. If there was any consideration, then it was about a limited reform: the previous government expressed no desire to combine, say, ESA with JSA and IS, nor to integrate any of those with HB and CTB, or the tax credits. Indeed, one could go further and argue that the previous government's decision in 2001 to align its new tax credit system with the income tax system rather than the welfare system is an important reason why the current system feels so non-integrated and complex. Arguably, the main motivation behind that decision was to reduce the stigma

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<sup>7</sup> Both from chapter 7 of DWP (2006).

<sup>8</sup> All from chapter 7 of DWP (2007).

<sup>9</sup> Para 6.8 of DWP (2008).

associated with receiving cash transfers. It will be interesting to see whether the decision to have Universal Credit administered by the Department for Work and Pensions, and have it feel like a regular social security benefit, does anything to increase stigma.

Proposals to integrate benefits had been made by organisations outside government.<sup>10</sup> In particular, Sainsbury and Stanley (2007) proposed integrating the out-of-work income-replacement benefits described above into a single benefit, but with the extra benefits and working tax credit continuing to exist alongside. Some work exploring the attractions of such a model was even commissioned by the government of the time: see Sainsbury and Weston (2010). The attractions of such a reform were also noted by David Freud, then an adviser to the Labour government and now a Conservative peer and Minister for welfare reform in the current government. However, Freud (2007) considered integrated benefits which were much simpler than Universal Credit. But the main inspiration for the current Government's plan to integrate benefits, though, comes from a report produced by a think-tank called the Centre for Social Justice (see Centre for Social Justice, 2009): the Secretary of State now in charge of introducing Universal Credit, Iain Duncan Smith, was previously chairman of the CSJ, and the lead author of the report (Stephen Brien) became a paid adviser to the current UK government to help introduce Universal Credit. Some of the arguments made in Brien's report in turn drew upon those in Brewer, Saez and Shephard (2010), who in 2008, had sketched out a model for integrating all means-tested benefits and tax credits, and also for altering the way in which support was withdrawn as incomes rose to improve, hopefully, the implied pattern of financial work incentives.

### 3 UNIVERSAL CREDIT: HOW WILL IT WORK?

#### 3.1 Overview of the Key Features of Universal Credit<sup>11</sup>

The Government plans that Universal Credit will replace most means-tested welfare benefits and in-work tax credits designed for working-age adults. As already noted, the key exception is Council Tax Rebate (previous Council Tax Benefit, or CTB), which is being kept outside Universal Credit, and being devolved to local authorities to design and operate. The UK's main non-means-tested benefits will not be superseded by Universal Credit, and means-tested support for families where all adults are over the female state pension age (rising from 60 to 65 over this decade) is not directly affected by the reform.

<sup>10</sup> This short history is taken in part from Bennett and Sutherland (2011).

<sup>11</sup> The best single source at the time of writing on how Universal Credit might work is CPAG (2012). The text of the relevant Bill can be found at [http://www.publications.parliament.uk/pa/bills/cbill/2010-2012/0197/cbill\\_2010-20120197\\_en\\_1.htm](http://www.publications.parliament.uk/pa/bills/cbill/2010-2012/0197/cbill_2010-20120197_en_1.htm), and the DWP have put a series of policy notes and explanatory memoranda here <http://www.dwp.gov.uk/policy/welfare-reform/legislation-and-key-documents/welfare-reform-act-2012/welfare-reform-draft-regulations/>.



Universal Credit will be administered by the Department for Work and Pensions (DWP), in contrast to the current system where HM Revenue and Customs (HMRC) manages tax credits and DWP administers most means-tested benefits. It will be paid monthly as a single payment; this represents a significant change from the existing system, under which some benefits are paid fortnightly, and under which benefits and tax credits designed for children are paid to the main carer in a couple.

An important aspect of Universal Credit, which we largely ignore in our quantitative analysis, will be the conditionality regime. The government has said, in effect, that families who report low earnings, and which contain an adult who it considers is capable of working (or working longer hours), will be subject to conditionality. Although it is not clear how this will operate, presumably these families will be obliged to look for (longer hours) work, perhaps backed up with sanctions as in the current regime for JSA. It looks like the eventual system will extend some form of conditionality to more families than are currently affected. For example, under Universal Credit couples without responsibilities for young children will have to report joint earnings equivalent to two full-time minimum wage workers to escape any conditionality; under the current regime, such families could not be subject to conditionality provided one person worked 24 hours (if they had children) or 30 hours a week (if they did not have children).

### *Maximum Entitlements*

Universal Credit will resemble a negative income tax administered at the family level, with entitlements depending on family circumstances and family resources, and no explicit dependence on whether a claimant family is in work or not. Each family who claims will be entitled to a personal amount with additional amounts for children and those with disabilities, and those in rented accommodation will receive an additional amount (to reflect their housing costs).<sup>12</sup> The government has said that it will set these additional elements in a way that means that most out-of-work welfare claimants with no other sources of income or savings will see their entitlements to benefits unaffected by the move to Universal Credit. This means that the personal amount will be higher for couples than for single people (though not twice as high), and lower for some young people. The housing component will be similar to HB, and the amounts for child additions will be based on the current rates of CTC. However, there will be changes to maximum benefit entitlements for some families. Some of these will arise because the government intends to simplify disability premiums when Universal Credit is introduced in a way that will be approximately revenue neutral overall, but will create winners and losers among those with disabilities. But there will also be substantial changes to (usually reductions in) welfare entitlements

<sup>12</sup> There will remain a form support for those with mortgages, but it is only available for those with no earnings at all, and only after a waiting period of 6 months and its receipt is normally limited to a maximum of two years.

among couples where one person is above and one below the female pension age (which is rising from 60 to 65 over this decade): such families can currently claim the generous pension credit, but will in future have to claim Universal Credit, where the adult aged below the pension age could in principle be subject to conditionality if he or she were not in work.

### *Treatment of Income*

Under Universal Credit, earned income will be subject to a taper rate of 65%, but this taper will apply to earned income having deducted income tax and National Insurance (social security) contributions (NICs). This means that the effective withdrawal rate will depend upon the tax and NIC rate faced. For example, an individual earning less than the income tax threshold who earns an additional pound will pay no more tax or NIC and lose 65p of Universal Credit, but an individual liable for National Insurance and paying income tax at the main rate of 20% who earns an additional pound will have to pay an additional 20p in income tax and 12p in NICs and will then lose 65% of the remaining 68p of additional net earnings (which comes to 44.2p) in Universal Credit, making a total marginal effective tax rate (METR) of just over 76%. (However, if the reformed CTB is withdrawn over the same range of income as Universal Credit, it is likely that METRs could be in excess of 80% for some individuals receiving Universal Credit). Characterising METRs under the current system is much more difficult (as the system has non-integrated overlapping tapers), but can rise to over 90% for those receiving multiple benefits or tax credits.

There will be an earnings disregard that depends on family circumstances.<sup>13</sup> The disregards will be reduced for families claiming help with rental costs, but subject to a floor; having lower earnings disregards for those receiving help with rental costs prevents Universal Credit entitlements from extending too high up the earnings distribution (this is achieved under the current system by having a higher effective withdrawal rate for those receiving help with rental costs through HB).

Most unearned income other than interest income (which has a special treatment, see below) will not be subject to a disregard at all, and will reduce entitlement to Universal Credit pound-for-pound. This is mostly identical to the current treatment of such income under the means-tested welfare benefits, but it is a stricter means-test than under tax credits where unearned income is currently subject to, at most, a 41% taper. As a result, current claimants of tax credits who rely on unearned income

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<sup>13</sup> These earnings disregards turn out to be important parameters in Universal Credit. Since the government has said it will set the basic entitlement to Universal Credit at levels that match entitlement to the current set of out-of-work benefits, and that there will be only one withdrawal rate for earnings in Universal Credit across all family types and all ranges of earnings, it follows that the only way in which the government can vary *in-work* incomes across different family types is through the earnings disregards.

(e.g. out-of-work lone parents receiving large amounts of maintenance payments for themselves) can potentially lose considerably from the Universal Credit reform.

Furthermore, special rules will apply to those with savings or investment income: instead of taking into account the actual amount of investment income, a claimant's savings will be used to calculate an imputed income.<sup>14</sup> Savings of less than £6,000 will be ignored, and if savings exceed £16,000, then a family will lose all entitlement to Universal Credit. This treatment of investment income is also identical to the way that means-tested benefits (IS, income-based JSA and ESA, HB and CTB) currently operate, but it is much more harsh than the current treatment of such income in tax credits, where investment income below £300 per year is ignored altogether, and investment income above £300 per year, as well as all other unearned income, is subject to, at most, a 41% taper.

### 3.2 Impact on Specimen Families

As described in Section 2, the current set of benefits and tax credits are not integrated, or even all aligned with each other. Moving from a system of independent, unaligned benefits and tax credits to a sensible integrated system is impossible without creating winners or losers.<sup>15</sup> Before we move on to show how Universal Credit affects incomes on average, we show here the impact on some specimen families.<sup>16</sup>

Figure 3.1 shows the budget constraint for a low-waged single adult aged over 25.

- Such a person will be better off (or unaffected) under Universal Credit if he works for less than 30 hours a week, because the withdrawal rate in Universal Credit will be lower than those in the current out-of-work means-tested benefits.
- They will be worse off under Universal Credit if they work between 30 and 39 hours a week.

<sup>14</sup> For savings between £6,000 and £16,000, an income of £1 a week will be imputed for every £250 of savings in excess of £6,000 (i.e. savings of £7,000 will lead to an imputed income of £4 per week).

<sup>15</sup> Some of the examples of the lack of integration or alignment are as follows:

- The relationship between the claimant's age, family type and maximum entitlement is different for the benefit system and the tax credit system
- The definitions of earned income is different in the benefit system and the tax credit system
- The treatment of financial capital differs within the benefit system, and between the benefit system and the tax credit system
- The number of hours a week that need to be worked to be entitled to in-work benefits varies between family types within the tax credit system
- The combined marginal effective tax rate faced by recipients of benefits or tax credits depends upon the combination of benefits and tax credits to which they are entitled.

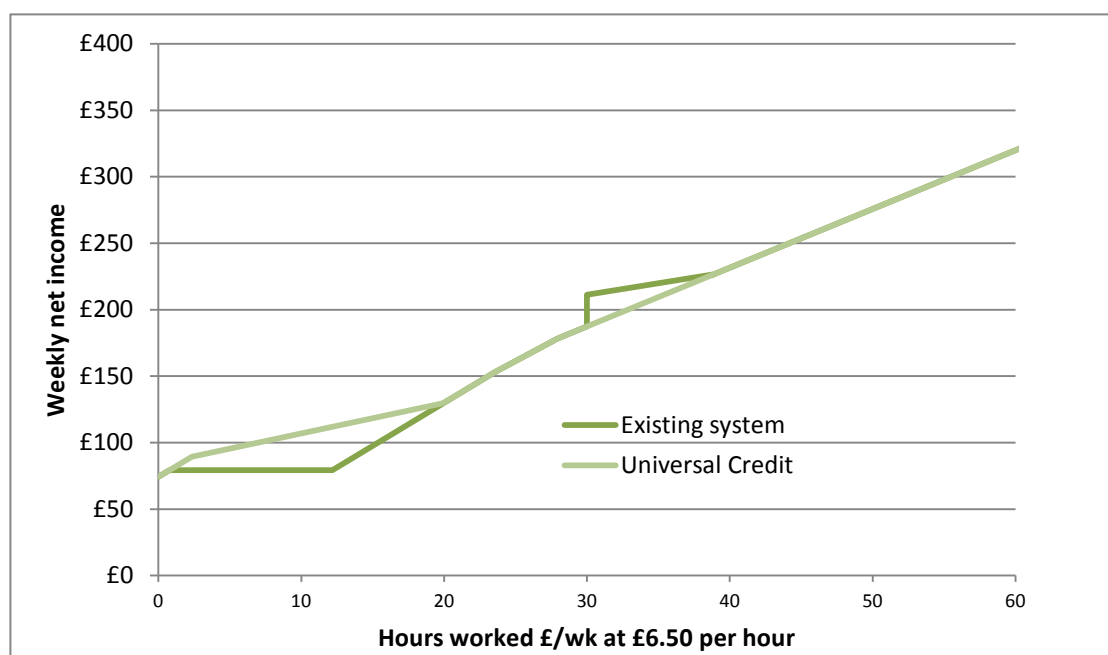
Many of the reasons that particular families win or lose under Universal Credit can be traced back to the way the government is resolving these inconsistencies.

<sup>16</sup> All of the figures ignore council tax, council tax rebate, and its (currently uncertain) replacement.

- They will be unaffected by the reform if they work for more than 39 hours a week (as their earnings will be too high for them to receive benefit payments in either system).

The "crossing point" at 30 hours work a week exists mostly because the current system gives rise to a sharp increase in benefit entitlement when weekly working hours reaches 30, the minimum needed to be eligible for Working Tax Credit for those without children.<sup>17</sup>

**FIGURE 3.1** Budget Constraint under Universal Credit for an Example Single Adult



*Notes:* Based on an assumed single adult: he can choose how many hours to work at a given wage rate, £6.50 per hour; and he has no disability and no unearned income.

Figure 3.2 shows the budget constraint for a lone parent with two children. The figure illustrates how Universal Credit removes many of the kinks in the existing system that result from the hours rules in WTC, the interaction between different benefits and the simultaneous withdrawal of benefits. As a result, the net impact of the reform varies by hours worked in a complicated way but, in general:

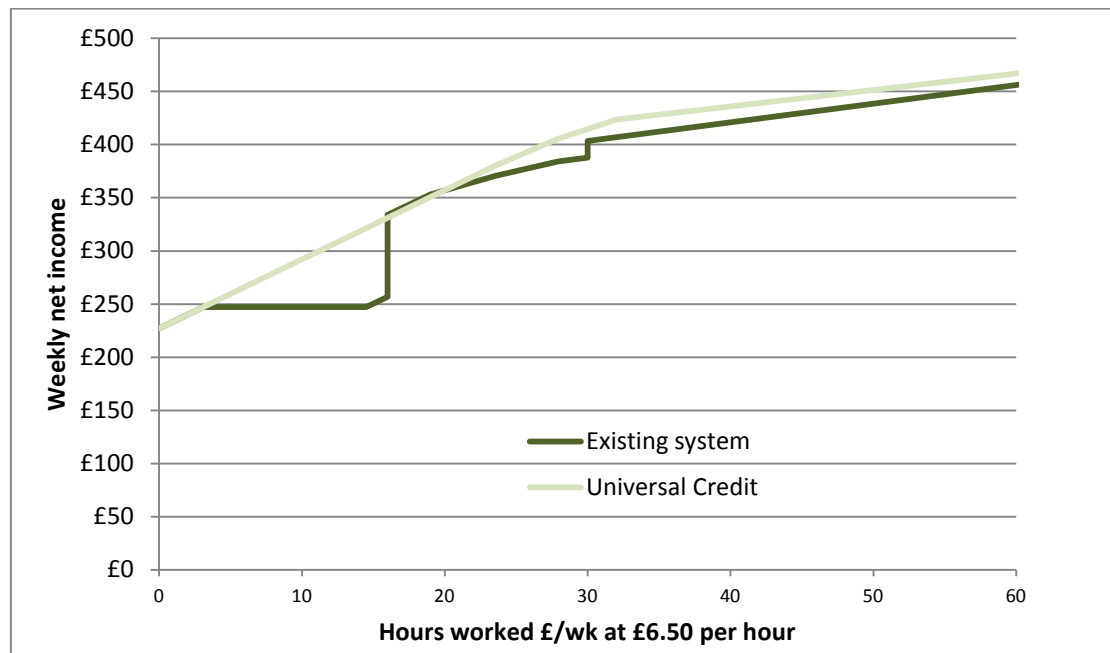
- If the lone parent works for less than 16 hours a week, they will be better off under Universal Credit than under the current system. This is mainly a result of the substantial earnings disregard in Universal Credit, at about £150 per week. In

<sup>17</sup> The figure suggests that Universal Credit may weaken the incentive for single adults with low potential wages to do full-time work, but the government has also announced that single people without children will be subject to conditionality until they are earning 35 times the minimum wage each week. See Department of Work and Pensions (2011a).

contrast, in the current system, they would face a 100% marginal effective tax rate if they worked for less than 16 hours a week, after a £20 a week disregard.

- If the lone parent works for between 16 and 29 hours a week (and thus be entitled to WTC under the current system), the differences between entitlements in the two systems is small.
- If the lone parent works for 30 or more hours a week, they will be slightly worse off under Universal Credit as the maximum entitlement to tax credits in the current system exceeds their entitlement to Universal Credit at these levels of earnings. Furthermore, the combination of withdrawal of Universal Credit, income tax and NICs gives rise to a marginal effective tax rate of 76.2%, which is higher than the combined rate of 73% in the current system, and so the losses for this lone parent increase the more hours they work above 30 hours per week.<sup>18</sup>

**FIGURE 3.2** Budget Constraint under Universal Credit for an Example Lone Parent with Two Children



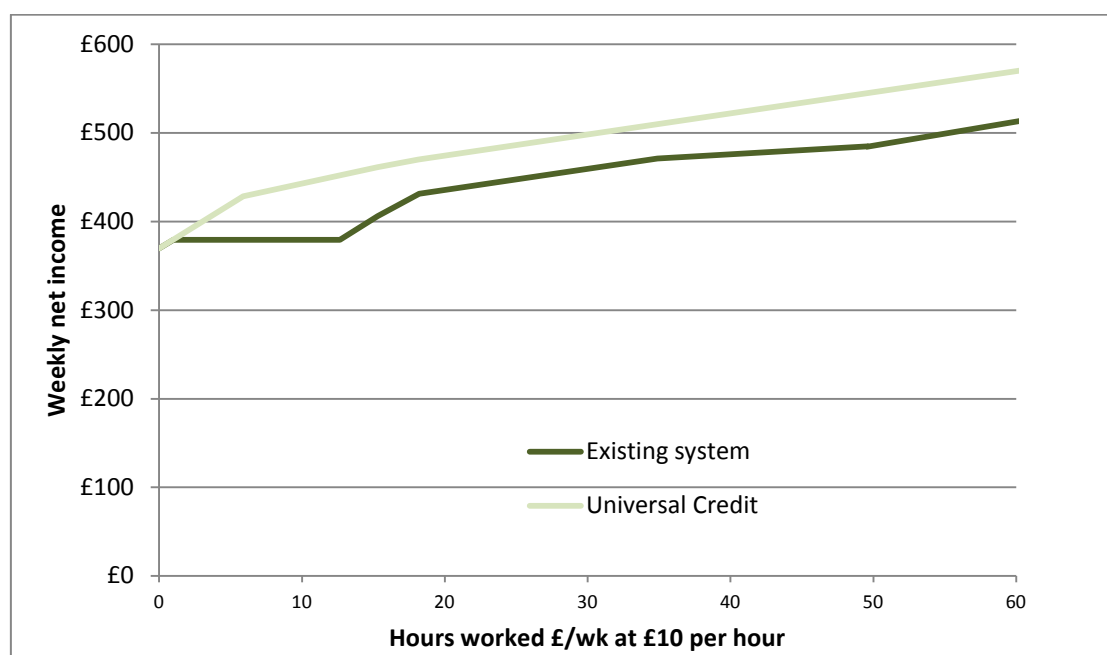
**Notes:** Based on an assumed lone parent with two children who can choose how many hours to work at a given wage rate, £6.50 per hour, and has no housing costs, no disability and no unearned income.

Figure 3.3 shows the budget constraint for an adult in a couple with two children. For any positive number of working hours, the family will be better off under Universal Credit than under the current system. These gains are attributable to the lower withdrawal rate of Universal Credit compared with the combined withdrawal rate of WTC and Housing Benefit in the current system. The Universal Credit system will create a marginal effective tax rate that is either 65% or 76.2% for most working

<sup>18</sup> We have assumed that the lone parent is not using formal childcare, but this does not affect the analysis materially as the effective subsidy for childcare under UC will be unchanged from the one under tax credits, but slightly less generous than that which applied to families receiving HB or CTB. See Department for Work and Pensions (2011b).

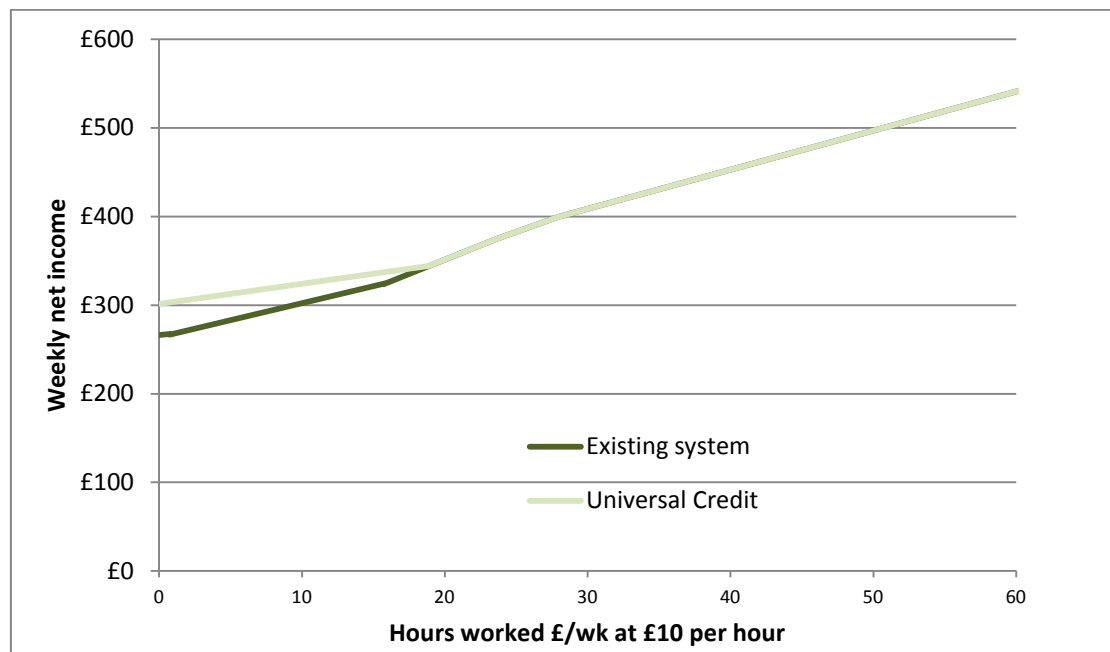
hours; the current system, though, involves a 100% rate as Income Support is withdrawn at low hours, and an approximately 90% rate due to the combination of WTC and HB withdrawal at higher levels of hours worked. The gap between the two budget constraints translates to significant differences in incentives to engage in paid work.

**FIGURE 3.3** Budget Constraint under Universal Credit for an Example Couple with Two Children



*Notes:* Based on an assumed couple with two children: one partner can choose how many hours to work at a given wage rate, £10 per hour; the other is out of work; their LHA is £100 per week; and they have no disability and no unearned income.

Figure 3.4 shows the budget constraint for the second earner in a couple. If the second earner works no more than about 10 hours a week, the family will be better off under Universal Credit than under the current system (for similar reasons to those outlined in the previous example): such a family's entitlement to Universal Credit will be higher than its entitlement to Working Tax Credit under the current system. As the second earner's working hours rise, the higher maximum entitlement to Universal Credit will be outweighed by its higher withdrawal rate (for jobs of between 1 to 14 hours a week, the marginal effective tax rate is 65% under Universal Credit, and 41% under the current system). Overall, the second earner's financial incentive to work is generally weaker under Universal Credit both because single earner couples are treated more favourably by Universal Credit than the current system, but also because the withdrawal rate in Universal Credit affecting second earners is higher than its equivalent in the current system.

**FIGURE 3.4** Budget Constraint under Universal Credit for an Example Couple without Children

**Notes:** Based on an assumed couple without children: one partner can choose how many hours to work at a given wage rate, £6.50 per hour; the other works 35 hours a week at £7 per hour; their LHA is £80 per week; and they have no disability and no unearned income.

#### 4 WINNERS AND LOSERS AND THE COST TO GOVERNMENT IN THE LONG RUN

In this section, we present an overview of a microsimulation analysis of which working-age families gain and lose from the introduction of Universal Credit.<sup>19</sup> We do this by imagining that it is implemented in full in 2014–15, and we compare that to a hypothetical 2014–15 benefit system where Universal Credit was not introduced.<sup>20</sup> Therefore, when we describe a certain type of family as winning (losing) from the reform, what we mean precisely is that this type of family would be entitled to more (less) benefits under Universal Credit in 2014–15 than it would have had it faced a hypothetical 2014–15 benefit system where Universal Credit was not introduced.<sup>21</sup> All of the analysis ignores council tax, council tax rebate, and its

<sup>19</sup> "Working-age families" include all families where everyone is below 60, and couples (with or without children) where one is below 60 and one is 60 or above. We omit families where all adults are above the female state pension age as they are not intended to be affected by the Universal Credit reform.

<sup>20</sup> We use the TAXBEN model based at the Institute for Fiscal Studies. The most recent, albeit dated, description of how TAXBEN works is Giles and McCrae (1995); most of its key features have remained unchanged since then. In what follows, we compare our estimate of what the tax and benefit system would look like in 2014–15 were Universal Credit not introduced, taking into account all announcements made in or before the 2011 Budget, and our estimate of the tax and benefit system in 2014–15 with Universal Credit in place. All cash amounts are expressed in 2014–15 prices. In a companion piece, Brewer, Browne and Joyce (2011) have forecast measures of income poverty through to 2020, including the impact of Universal Credit, and accounting as best they can for the phase-in and transitional protection of Universal Credit. The analysis here updates that in Brewer *et al* (2012) to reflect (small) policy announcements since then; we have also broadened the scope of the analysis to include all families which contain one adult aged under 60.

<sup>21</sup> The government has promised that no existing claimant will lose in cash terms when the Universal Credit comes in if their circumstances do not change. However, the transitional protection will not apply to new claimants, nor will it apply if a family experiences a change in circumstances (which has not yet been precisely defined). Furthermore, over time, the real value of the cash-term protection will fall due to inflation. We therefore ignore the transitional protection; this means our

(currently uncertain) replacement; this means we will under-estimate some families' in-work incomes, and underestimate some individuals' PTRs and METRs.

Overall, 2.9 million working-age families will gain from the introduction of Universal Credit, and 1.8 million will lose out (in the absence of transitional protection). 2.4 million families entitled to means-tested benefits or tax credits will see no change in their disposable income because their entitlements to Universal Credit will match their current entitlements to means-tested benefits and tax credits. A further 13.6 million working-age families will not be affected by the reform because their incomes are too high to qualify for any means-tested transfer payments in either system.

On average, working-age families that stand to gain will see a 9.1% increase in their disposable income, which amounts to an average £32.70 per week in 2014–15 prices for each family. The average family that loses will be worse off by 10.1% (or £40.15 per week). Overall, Universal Credit will lead to a 0.18% average increase (i.e. £0.98 per week) in income across all working-age families. Under our assumptions, the new system of Universal Credit will be more expensive than the existing regime by £1.2 billion per year.<sup>22</sup>

Figure 4.1 illustrates the proportions of winners and losers in the long run from the reform by decile group of the income distribution in Great Britain. In each of the bottom five income decile groups, there are more winners than losers, though there are substantial numbers of losers as well as winners. Many in the richer half of the distribution are unlikely to be affected because they do not receive any means-tested benefits or tax credits under the current regime; when they are affected, they are more likely to lose than gain. A substantial proportion of current welfare recipients in the bottom three deciles are not affected, because maximum entitlements to Universal Credit are based on maximum entitlements to the current system of means-tested benefits for workless families.

As a fraction of income, Universal Credit will benefit poorer families more than richer ones in the long run (see Figure 4.2). The poorest 10% of working-age families will see a 4.7% increase in their income, on average, a rise which declines to 0.2% in the

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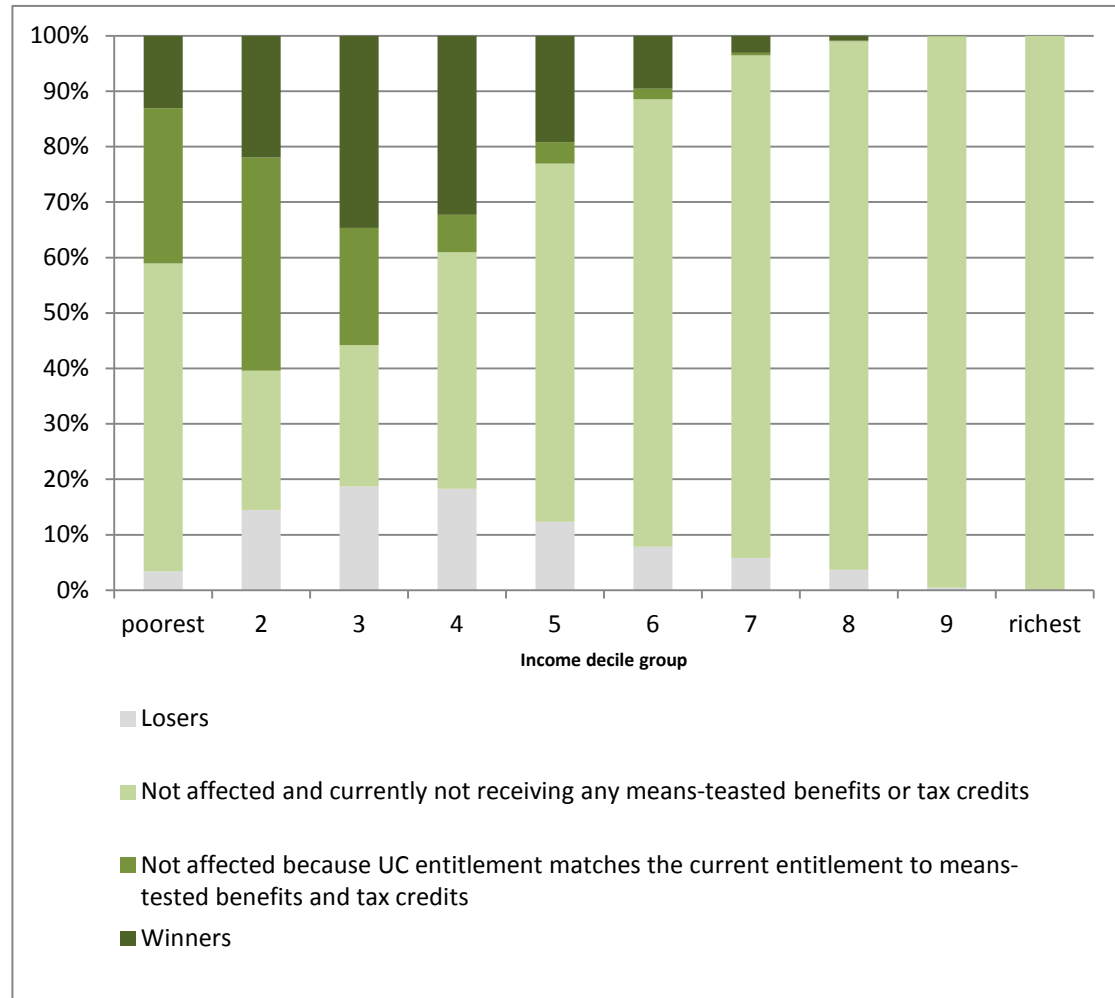
analysis could be thought of as the "long-run impact" of the reform (but assuming full take-up and no behavioural responses).

<sup>22</sup> Note that this assumes full take-up in both the existing and Universal Credit systems, and therefore does not include the cost of any increase in take-up arising from Universal Credit. The government estimates that expenditure on benefits will increase by £4 billion a year as a result of both higher entitlements to Universal Credit and higher take-up of Universal Credit but in the long run there will be savings of £2 billion a year as a result of reduced fraud, error and overpayments. The government's estimate of overall long-run cost of introducing Universal Credit is therefore £2 billion a year. See Department of Work and Pensions (2011c).



fifth decile group; the richer half of the population will see small losses on average (mostly arising from families losing entitlement to child tax credit).

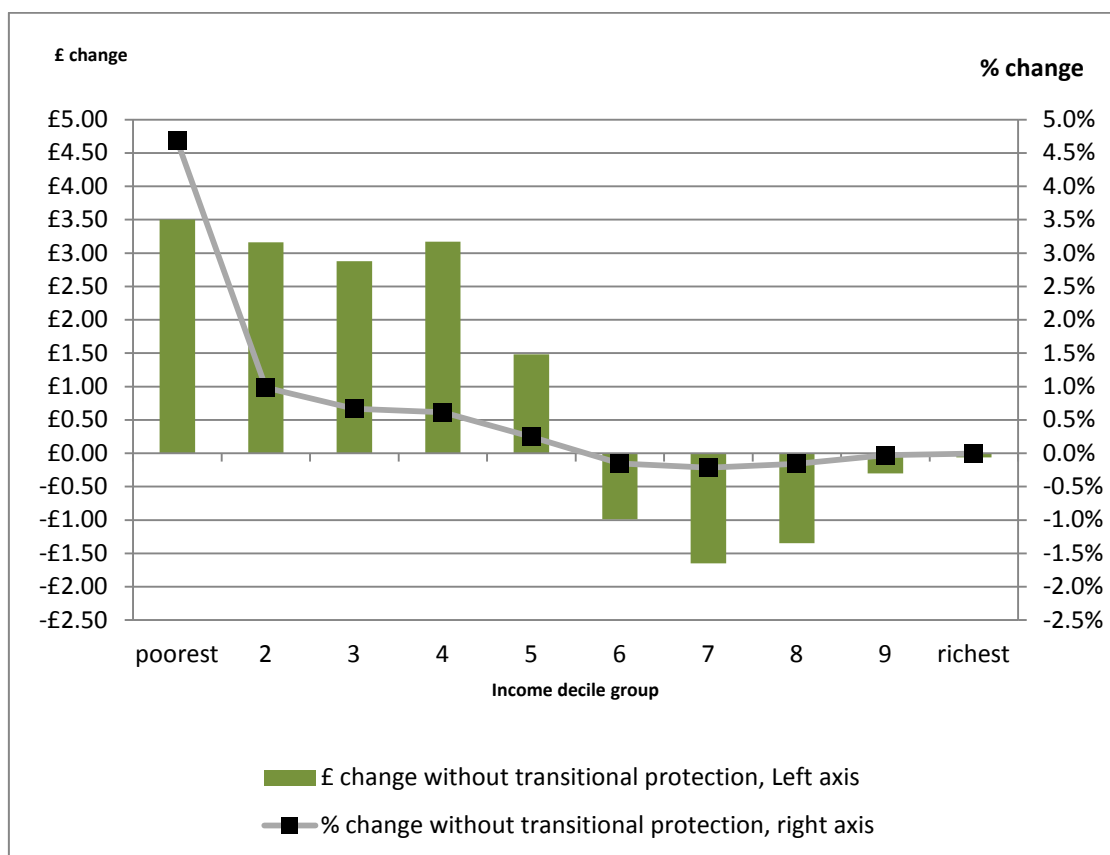
**FIGURE 4.1** Winners and losers by income decile group, without transitional protection



*Notes:* Assumes full take-up and ignores behavioural response. Income decile groups are based on equivalised family income using the McClements equivalence scale.

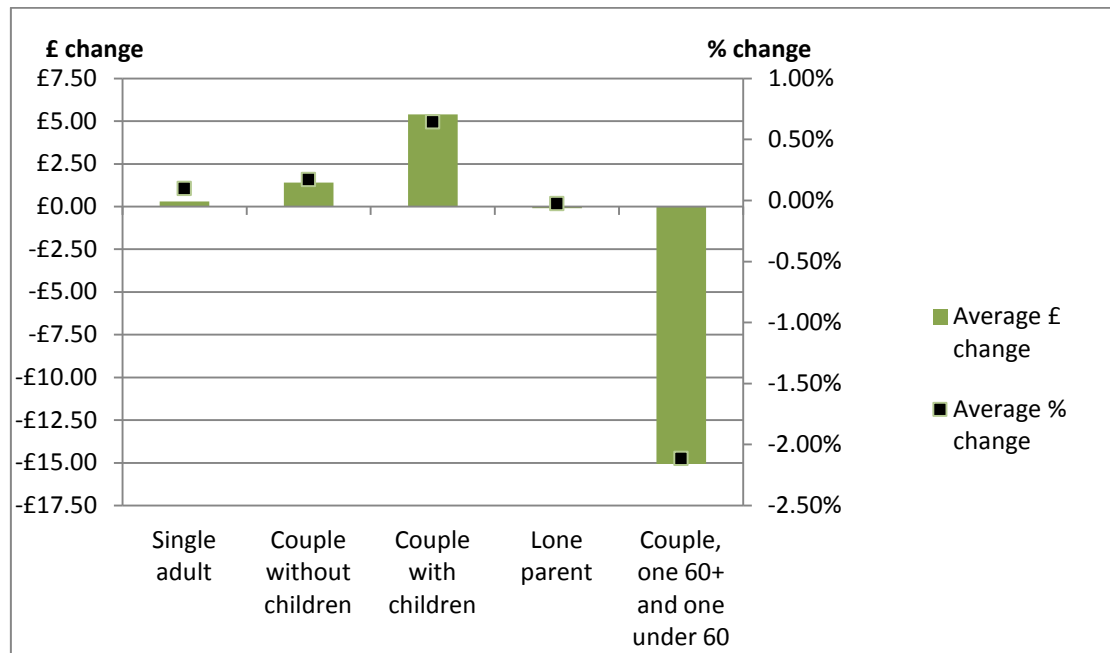
*Source:* Authors' calculations using the IFS tax and benefit microsimulation model, TAXBEN, run on updated data from the 2009–10 Family Resources Survey.

FIGURE 4.2 Average Impact on Disposable Income by Income Decile Group



Notes: As for Figure 4.1.  
 Source: As for Figure 4.1.

Figure 4.3 illustrates the changes in disposable income in both cash and percentage terms, averaged across all families for each type. Single adults will gain little on average: since (as shown in Figure 4.1) a small proportion of them will gain and a similar proportion will lose. Couples without children are also very unlikely to be affected with slightly more winners than losers (as shown in Figure 4.1), and the average impact on them will be a small gain. Couples with children will gain the most, on average, gaining an average of £5.40 per week (0.6% of their income). The average long-run impact on lone parents will be close to zero, at -£0.10. Finally, the average change for couples with one aged 60 or above is a substantial loss, at -£15.07 (-2.1% of their income); as described in Section 2, some of these couples lose substantially through having to claim Universal Credit rather than Pension Credit.

**FIGURE 4.3** Average Impact on Disposable Income by Family Type

Notes: As for Figure 4.1.

Source: As for Figure 4.1.

A more detailed analysis shows that, although the government has said that it will set maximum entitlements to Universal Credit to mirror the current set of welfare benefits, it is the case that some workless families will experience relatively substantial losses. This is mostly attributable to two factors. First, many workless families have unearned income, such as maintenance payments from former partners (particularly important for lone parents), and income from savings, investments and private pensions (which are common among those taking early retirement); as described in Section 3, most of these unearned income sources will be treated more harshly under Universal Credit than currently under tax credits, and this difference plays an important role for out-of-work families with children. Second, the reforms to disability premiums that will be introduced alongside Universal Credit create winners and losers (though are revenue-neutral overall under the assumptions used by both ourselves and the government). Many single adults and lone parents will lose the severe disability premium but will not benefit from the increase in the support group premium, but other disabled people will benefit from the higher support group premium.

## 5 THE IMPACT OF UNIVERSAL CREDIT ON WORK INCENTIVES

This section examines briefly the effect of Universal Credit on the incentive to be in paid work, and the incentive for workers to increase earnings. We measure the former with the participation tax rate (PTR), or the percentage of earnings lost in tax

or withdrawn benefits when an individual moves into work, and we measure the latter with the marginal effective tax rate (METR).<sup>23</sup>

Table 5.1 shows the distribution of PTRs before and after the introduction of Universal Credit amongst workers and non-workers combined.

**TABLE 5.1** Participation Tax Rates Amongst Working-Age Adults before and after Introduction of Universal Credit

PTR (Percent)	Before	After
0-10	2,800,000	2,700,000
10-20	4,000,000	3,900,000
20-30	7,100,000	7,000,000
30-40	8,000,000	7,500,000
40-50	4,200,000	4,000,000
50-60	2,600,000	3,500,000
60-70	1,500,000	2,600,000
70-80	1,000,000	300,000
80-90	200,000	<50,000
90+	300,000	<50,000

*Notes:* Figures rounded to nearest 100,000 adults. Excludes employer NICs and indirect taxes and most 'business taxes' (notably corporation tax and business rates) and capital taxes (notably inheritance tax, stamp duties and capital gains tax). In-work incomes for non-workers are estimated as described in box 2.1 of Adam and Browne (2010). Excludes full-time students and those in families where all adults are over State Pension Age.

*Source:* Authors' calculations using the IFS tax and benefit microsimulation model, TAXBEN, run on updated data from the 2009–10 Family Resources Survey.

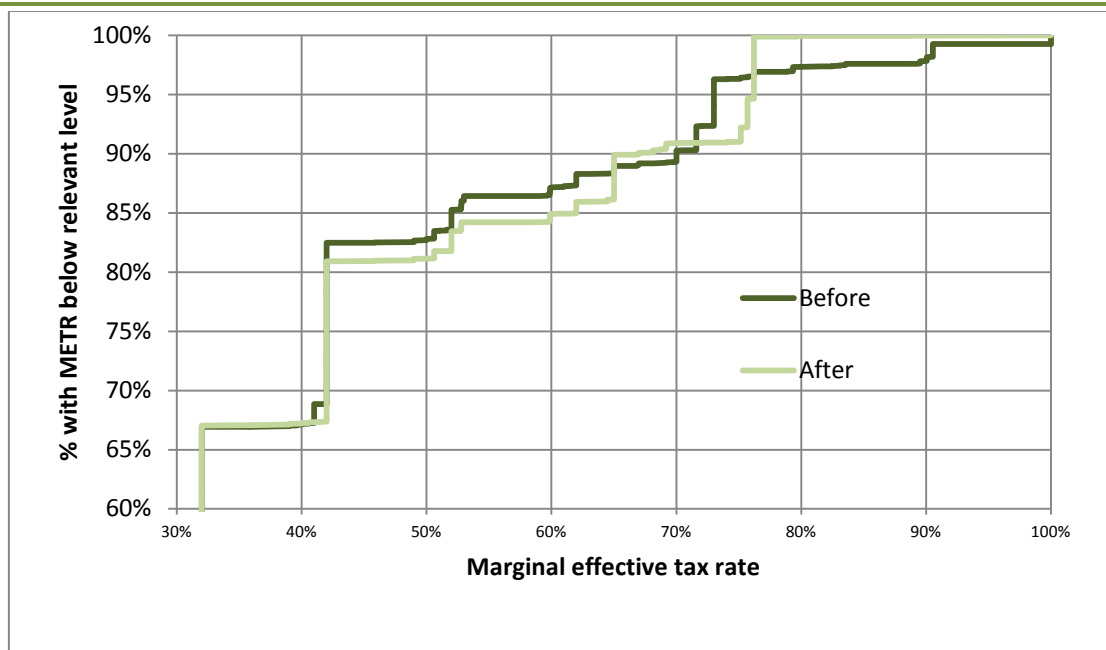
Universal Credit strengthens the incentives to work for those who have the very weakest incentives to work under the current system: there are very few individuals with a PTR of 70% or higher after Universal Credit is introduced and 1.4 million fewer than under the current system. At present, these very high PTRs arise because individuals can lose almost all of their earnings through withdrawn benefits and tax credits when they start earning a small amount. Under Universal Credit, though, there will be a higher level of disregarded earnings, followed by a combined tax and benefit withdrawal rate of no more than 76.2%. Together, these significantly strengthen the incentive to earn small amounts. On the other hand, there are some people who see their incentive to work weaken through this reform (for example, there is an increase in the number of individuals with a PTR of 50% or more by 900,000); these are mostly workers who would receive less Universal Credit than they currently receive in tax credits.

<sup>23</sup> We calculate PTRs for workers and non-workers. For non-workers, we use the age, sex, years of education, marriage and cohabitation status, number of dependent children, age of youngest child, ethnicity and housing tenure of those not in work in the data to predict weekly earnings conditional on being in each of four different hours bands (1–15, 16–23, 24–29 and 30+), and we use the same characteristics to estimate the likelihood of each individual being in each of these hours bands were they to work. This allows us to produce a weighted average PTR for each non-worker. See Adam and Browne (2010) for more details.

Brewer *et al.* (2012) show that the pattern of changes in work incentives varies significantly according to whether an individual has a partner in work, or not. Universal Credit reduces PTRs on average for those in couples whose partner does not work, particularly at the lower end of the earnings distribution, but Universal Credit will weaken the incentives for couples to have two people in work rather than one: this is mostly due to the change from a 41% gross income taper in tax credits to a 65% net income taper in Universal Credit; this means that a (potential) second earner who is entitled to Universal Credit when out of work will initially lose 65p of each pound earned when they move into work, rather than 41p as they do under the current tax credit system.

Figure 5.1 shows the distribution of those with high METRs (the top 40% ranked by METR) before and after the introduction of Universal Credit for those who are currently in work. Universal Credit will mean that there are no METRs above 76.2%, but it will increase the number of individuals with METRs higher than 73% and increase the number with METRs of 65% or more. However, the vast majority of workers will not have their METRs affected by the introduction of Universal Credit: they are not entitled to means-tested benefits or tax credits under the current system, and will not be entitled to Universal Credit either (and this is why we draw the Figure only for the top 40% of the distribution of METRs).

**FIGURE 5.1** Cumulative Distribution of METRs before and after Introduction of Universal Credit (workers Only; Top 40% of METRs only)



**Notes:** Excludes employer NICs and indirect taxes and most 'business taxes' (notably corporation tax and business rates) and capital taxes (notably inheritance tax, stamp duties and capital gains tax). Excludes full-time students and those in families with someone aged over State Pension Age.

**Source:** Authors' calculations using the IFS tax and benefit microsimulation model, TAXBEN, run on updated data from the 2008–09 Family Resources Survey.

The Figure hides what is actually a complicated pattern of changes. The most significant are as follows:

- Around 1.3 million workers will see their METR increase from 73% to 76.2%; these are basic-rate taxpayers who, if they increase their earnings slightly, currently face withdrawal of tax credits, and will face withdrawal of Universal Credit.
- Around 300,000 workers will see their METR increase from 32% to 76.2%; these are people who are currently not entitled to means-tested benefits or tax credits, but who will become entitled to Universal Credit, and therefore will face the withdrawal of Universal Credit if they increase their earnings slightly.
- Another 600,000 workers – mostly in two-earner couples – will see their METR increase from 0% or 41% to 65%; these are non-taxpayers who are entitled to Universal Credit, and who face it being withdrawn at a rate of 65p in the pound when they increase their income. At present, such workers see tax credits withdrawn at a rate of 41%, or keep all of a small increase in earnings if they are not entitled to tax credits under the current system.
- Around 600,000 workers will see METRs fall from above 77% to 76.2% or 65% when Universal Credit is introduced; these are workers who currently face a simultaneous withdrawal of several benefits or tax credits if they increase their earnings.
- Around 500,000 basic-rate taxpayers who will see their METR fall substantially from over 70% to 32% (or just under), and around 250,000 will see their METR fall from various values to zero: these are in families currently entitled to tax credits, but who will not be entitled to Universal Credit.

As with PTRs, the pattern of changes in METRs varies both by earnings and between different types of individuals, as shown in the on-line appendix ([http://www.ifs.org.uk/docs/fsmar12\\_breweretal\\_appendix.pdf](http://www.ifs.org.uk/docs/fsmar12_breweretal_appendix.pdf)) to Brewer *et al.* (2012).

## 6 CONCLUSION

The UK government's plan to replace most means-tested benefits and tax credits for working-age adults with a single Universal Credit from 2013 will be the largest reform to the UK welfare system in the last 25 years.

The impetus for the reform seems to come not from a desire to reduce entitlements to welfare benefits, but to produce a system under which it is easier for claimants to claim benefits, the gains to work are more transparent, and the amount spent on administration and lost in fraud and error is reduced. In our view, these hoped-for advantages of Universal Credit come not because it will be simpler: entitlements will depend on as wide a range of factors as do the current set of means-tested benefits,

and in principle Universal Credit will be able to differentiate between recipients to almost the same extent as the current system. Instead, Universal Credit should be simpler to understand and implement because it will be integrated: this will reduce the number of separate means-tested benefits that people will need to claim, it will reduce the number of authorities to which they need to report their personal details, and it should mean that claimants need to understand (for example) only one set of rules for what counts as income and how excess income reduces entitlements. But integrating what is currently a fragmented and non-aligned system is not straightforward, and our empirical analysis in Sections 3 and 4 illustrates well the constraints all governments face when contemplating major welfare reform. Despite the reform acting to increase benefit entitlements, on average, Universal Credit will strengthen financial work incentives for some, as intended, but weaken them for others, and the reform will create both winners and, in the long run, losers.

Of course, it is too early to decide whether Universal Credit will be a success. First, much will depend upon delivery: moving from the current system of benefits and tax credits to a single benefit will require major administrative and IT changes, and this is being attempted at a time when spending on benefit administration is being cut. Second, many aspects of the design are still preliminary: almost all financial parameters have yet to be confirmed, and some important details of design still remain unclear. For example, the conditionality regime that will operate under Universal Credit could well be more important in determining whether low-skilled people work more than the changes to financial work incentives documented in this paper.

However, one strong criticism of the design that we would make at this stage is the decision not just to keep the means-tested Council Tax Rebate (CTR) outside of Universal Credit but also to devolve its design and delivery to local authorities. There are good reasons to think that this will undermine many of the supposed advantages of Universal Credit: having CTR operating alongside Universal Credit may mean that families continue to have to claim more than one means-tested benefit, and continue to have to report circumstances to more than one agency; and having a different form of CTR operating in every English Local Authority risks introducing the sort of complexity and lack of transparency that the Government says it wants to reduce. The way in which this localised CTR is withdrawn as income rises will also affect claimants' financial incentives to work.

Finally, we must not forget that Universal Credit is only one of many changes to social security benefits and tax credits announced by the UK government that came to power in May 2010: these changes altogether will substantially reduce government spending on social security benefits and tax credits and will, as we show in a companion piece to this, act to increase relative and absolute measures of income poverty over the next decade (Brewer, Browne and Joyce, 2011).

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# 3. Work Incentives: New Evidence for Ireland<sup>1</sup>

*T. Callan, C. Keane, M. Savage, J.R. Walsh and K. Timoney*

## 1 INTRODUCTION

The influences of tax and welfare structures on financial incentives to work, and hence on labour market decisions, have been the subject of many studies.<sup>2</sup> In a recent review, Blundell (2011) emphasises that "To understand how taxes and benefits might affect labor supply choices, we need to measure the effective work incentives implicit in the tax and benefit system". This is the main task of this paper. We focus on incentives affecting decisions as to whether to engage in paid work or not<sup>3</sup>. The balance between incomes in and out of work has been a key focus of policy debate in Ireland for many years, and has attracted particular attention during the past year.

The measure of work incentives used in this study is the replacement rate – the ratio of out-of-work income to in-work income, explained in more detail in Section 2. This measure has been used extensively in OECD analyses (OECD, 2012) and has become central in debates about the Irish tax/transfer system. The financial assistance provided to Ireland by the IMF and EU institutions brings with it intensive scrutiny of Irish economic and social policy. Regular missions from the Troika of EU Commission, European Central Bank and the International Monetary Fund are concerned not just with top-level macroeconomic aggregates, but also with structural policies concerning, among other things, the implications of tax and welfare for financial incentives to work. In this context, it is vital that comparisons of Ireland's policies and situation with those of other EU and OECD countries should be accurate and representative. For this reason, Section 3 considers carefully the way in which the OECD measures of replacement rates are constructed, and how they should be interpreted. IMF Staff Reports, including the recent Article IV report, have been strongly influenced by the picture provided by the OECD. We argue that a much more careful interpretation of these figures is needed, and show that a more

<sup>1</sup> We are grateful to two anonymous referees for helpful comments and to Brian Nolan and Pete Lunn for comments and discussions which have greatly helped to improve the paper. Many helpful comments were also received from Corona Joyce, Philip O'Connell, Frances Ruane and Emer Smyth. The usual disclaimer applies.

<sup>2</sup> For overviews of empirical results on labour supply responses to tax reforms, see Meghir and Phillips (2010) and Blundell and MaCurdy (1999). OECD (2012) maintain an ongoing cross-country database with designed to "reveal general and country-specific trends of the generosity and incentive effects of tax and benefit regimes".

<sup>3</sup> Marginal effective tax rates, which measure the incentive to increase earnings by working longer hours or gaining skills, were examined in Callan *et al.* (2011) and will also be the subject of future work.

nuanced approach leads to quite different conclusions from those drawn by both OECD and IMF.

An alternative approach, used by researchers at the ESRI and the Institute of Fiscal Studies (IFS) among others<sup>4</sup> has several advantages over that used by the OECD. Instead of estimating replacement rates for a selection of hypothetical families, the analysis is based on large scale nationally representative survey data. Information on incomes, labour market status and family composition is used to simulate for each family in the survey the net income an individual would obtain if in employment, or if unemployed. This microsimulation approach takes better account of the diversity of individual circumstances, and how they affect taxes, benefits and net incomes. Crucially it is also able to take account of how common or uncommon particular family types are, so that the analysis can produce a truly representative picture of the replacement rates faced by the population. In Section 4 we examine results on the distribution of replacement rates in Ireland – for those at work and those not in the paid labour market as well as those who are unemployed. These findings are derived using the SWITCH tax-benefit model, based on data from the CSO's Survey on Income and Living Conditions for 2010. They take account of individual variation in earnings potential, depending on age, education and marital status. We draw on a body of work which has produced microsimulation-based estimates of the distribution of replacement rates for selected years from 1987 to the present day, to put current results in context. We also present a comparison, based on microsimulation estimates, of the extent to which high replacement rates occur in the UK and Ireland.

Costs which arise wholly from taking up employment (referred to as in-work costs) are widely recognised as relevant to labour market decisions. However, there have been few attempts to estimate such costs or incorporate them into measures of financial incentives to work. Internationally most attention has focused on childcare. Immervoll and Barber (2006) extended the OECD approach to incorporate the costs of sending a two-year old to centre-based care. In Section 5 we exploit the advantages of data from the CSO's 2010 Survey on Income and Living conditions, which provides a broader and more representative picture of childcare use and costs. This allows us to explore the potential impact of childcare costs on the net reward from employment. Commuting costs could act in a similar way to reduce the net financial reward from employment. Data from the Household Budget Survey 2009-10 and the National Travel Survey 2009 are used to examine the size of travel to work costs. These results are combined with the microsimulation model SWITCH, based on SILC 2010, to examine the potential impact of travel to work costs on net

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<sup>4</sup> For example, research by Adam, Brewer and Shephard (2006) and Adam and Browne (2010) at the IFS; and by Callan, Nolan and O'Donoghue (1996), Callan, Walsh and Coleman (2006) and Callan *et al.* (2011) at the ESRI.

rewards from employment. Our results, based on recent data and on internationally recognised microsimulation techniques, show that the impact of in-work costs on the net financial gain from employment is much less than was suggested by Crilly, Pentecost and Tol (2012).

## 2 MEASURING FINANCIAL INCENTIVES TO WORK

The replacement rate is the most commonly used single measure of work incentives. It measures the proportion of in-work income which would be retained or replaced (e.g., by jobseeker payments) when out of work. In the next subsection (Section 2.1) we outline some key points about the measure and choices made in its implementation. First, in order to give a broader understanding of the issues involved, we set out some examples to illustrate key issues.

Table 1 below shows out of work income (from Jobseeker Benefit or the maximum rate of Jobseeker Allowance) and in-work income, net of income tax, PRSI and the Universal Social Charge, for a range of family types and earnings levels. For a single person, replacement rates can be in the region of 35 per cent for an adult with an entitlement to the maximum rate of Jobseeker's Benefit and a potential job at the average wage. A young person aged 18 to 21 faces a similarly low replacement rate, with a potential job at the minimum wage, and an entitlement to the young person's rate of Jobseeker's Allowance. An adult on a low (2/3 of average earnings) or minimum wage would face a higher replacement rate of up to 56 per cent. Replacement rates for those who receive additions to their welfare payments in respect of a spouse and/or children tend to be higher. But there is still considerable variation in these groups, depending on the wage faced. In reality, there is also variation depending on the work status and income of the spouse, which may reduce or eliminate such additional payments.

**TABLE 1** Illustrations of In-Work Disposable Income, Out-of-Work Disposable Income and Replacement Rates: Ireland 2012

	Out-of-Work Income	In-Work Income	Replacement Rate
	€ p a	€ p a	
	Single person		
18-21 year old, minimum wage, Jobseeker's Allowance	5,214	14,059	37%
Adult, minimum wage, Jobseeker Benefit	9,802	17,402	56%
Adult, 2/3 of average wage, Jobseeker Benefit	9,802	21,066	47%
Adult, average wage, Jobseeker Benefit	9,802	28,944	34%
	Married, 1 earner, no children		
Adult, minimum wage, Jobseeker Benefit	16,283	18,291	89%
Adult, 2/3 of average wage, Jobseeker Benefit	16,283	23,361	70%
Adult, average wage, Jobseeker Benefit	16,283	32,828	50%

Note: Both in-work and out-of-work incomes refer to incomes after tax, PRSI and Universal Social Charge and Child Benefit. Average wage for 2012 Q2 is €687.84, as per CSO *Earnings and Labour Costs*.

Even with a small number of examples, and before addressing the complications associated with children, we can see considerable variation in the level of replacement rates, from a low of 34 per cent to a high of 89 per cent. No one of these can represent the true situation for all of those who are unemployed – ranging from those who are single to those who are married with children, and from those with low educational qualifications to university graduates. Adding more examples does not help to establish what is typical – instead we have to perform calculations for a nationally representative sample. This is the approach taken in a series of papers by researchers at the Institute of Fiscal Studies in the UK (Adam *et al.*, 2006; Adam and Browne, 2010) and by researchers at the ESRI (Callan *et al.*, 1995; Callan *et al.*, 2007; Callan *et al.*, 2011). Sections 4 and 5 present new results based on SWITCH, the ESRI tax-benefit model, which provide an up-to-date representative picture of replacement rates in Ireland.

There is no general agreement as to a particular cut-off above which high replacement rates have strong effects on labour supply decisions. It may be helpful to clarify what different levels of replacement rate imply for the income gain that an individual would experience in moving from unemployment to employment.

- A replacement rate of 50% means that an individual's net income would double when moving from unemployment to employment
- A replacement rate of 67% means that an individual's net income would rise by 50% when moving from unemployment to employment.

- A replacement rate of more than 100% or more means that the individual would lose net income when moving from unemployment to employment.

Earlier work in this area (Callan *et al.*, 2007) has found that there are significant numbers of individuals *in employment* who have replacement rates of over 100 per cent. Why might individuals choose to stay in employment in such circumstances, when it seems that they would be financially better off on the dole? Several reasons can be suggested, such as:

1. Replacement rates measure the financial gain from employment in static terms; but staying in work tends to lead to higher wages in future, so there are also dynamic gains which are not taken into account here or in other work on replacement rates.
2. Individuals may choose to work in such circumstances for reasons such as self-respect, providing an example to their children, or the non-financial rewards from working life.

In looking at replacement rates it is useful to distinguish two different perspectives. Viewed from one perspective, high replacement rates can be seen as potentially damaging the financial incentive to work. But from another perspective, replacement rates need to be "high enough" to provide an adequate floor to income for those who become unemployed. In striking a balance between these perspectives, policy must grapple with the fact that there is considerable variation both in needs (related to family size, for example) and in potential wages (which vary, but mainly in response to factors such as productivity rather than needs). If policy in this area had only one goal – either maximising the financial incentive to work, or attaining an income target for the unemployed – then setting the level and structure of welfare payments would be relatively straightforward. It is the need to balance the potentially conflicting concerns of income support and work incentive goals which means that careful monitoring of both the income support and work incentive outcomes is needed.

## 2.1 Replacement Rates<sup>5</sup>

We examine the financial work incentives facing both single persons and couples<sup>6</sup>, taking account of the ways in which tax and welfare entitlements are affected by the number and ages of dependent children. For a single person who is unemployed or not at work, we simulate the welfare payments they get when not in work, and the

<sup>5</sup> The basic rationale underlying the replacement rate was described by Callan *et al.* (2011), while Callan *et al.* (2007) contains a more detailed discussion.

<sup>6</sup> The small numbers of cohabiting couples in the SILC survey mean that a separate analysis of their situation is not yet possible, but their broad treatment by the tax and welfare systems is incorporated in the model.

resulting net income. This is compared with an estimate of the net income they would obtain if they were employed – something which would depend on the wage they are likely to be able to obtain in the labour market. Potential wages are influenced by such factors as educational qualifications and age or experience. For example, other things being equal, someone with a university degree is likely to obtain a higher wage than someone whose highest qualification is a Junior Certificate.

We examine the incentives facing both partners in a couple, taking each person in turn. When examining incentives facing one spouse, we hold the labour market participation of the partner constant. In so doing, we take into account the overall impact of the change on family income. Adult children are regarded as separate decision making units, but the impact of the household means test ("benefit and privilege") applying to young adults living with their parents is taken into account, as are the new, lower rates of payment for Jobseeker's Allowance for those aged under 25.

The financial incentive for an individual to move from unemployment into employment depends on the family's disposable income<sup>7</sup> when the individual is unemployed and the family's disposable income when the individual is employed. A narrow focus on the individual's own net income would fail to take account of the possible impact of an individual's taking up employment on the social welfare entitlements and/or income tax liabilities of his or her spouse or partner.

The replacement rate summarises this information by taking out-of-work income as a proportion of in-work income at the level of the family unit:

$$RR = \frac{\textit{Out of work family disposable income}}{\textit{In work family disposable income}}$$

For example, an individual might find that his or her family income when unemployed is €180 per week, but that on taking up a job that disposable income would rise to €300 per week. The replacement rate in this situation would be 60 per cent.

Standard microeconomic theory suggests that an increase in the hourly wage rate faced by an individual has two distinct effects (Duncan and Giles, 1997)<sup>8</sup> :

<sup>7</sup> Disposable income is cash income from all sources – including wages and salaries, profits, pensions, interest, dividends and welfare payments – net of taxes, levies and social insurance contributions.

<sup>8</sup> See Duncan and Giles (*ibid*) for a graphical illustration of the argument.



- a higher net wage means that the individual would have more to gain from an additional hour of employment (This is referred to as a positive substitution effect).
- the wage increase also means that individual needs to work fewer hours to obtain the same net income (This is labelled a negative income effect).

In general, the balance between these opposing effects is ambiguous. In the case where the individual is unemployed (or not employed) there is no income effect, as there is initially no wage income. Thus theory predicts a positive incentive effect associated with a higher wage – and this is captured by the replacement rate measure, as a higher wage means that in-work income rises while out-of-work income is constant. However, if non-employment income rises (e.g., an increase in child benefit), theory predicts that the impact on labour supply will be negative. The replacement rate measure increases if non-employment income rises, in line with the theoretical prediction.

In addition to these theoretical considerations, replacement rates have been in widespread use in policy debate (see, most recently, NES, 2011). In an international context, they are extensively used by the OECD. Thus, for both theoretical and practical reasons, the replacement rate measure is the one we focus on in this paper.

## 2.2 Estimating Replacement Rates Using Nationally Representative Survey Data

Microsimulation modelling provides a means of analysing the replacement rates facing individuals<sup>9</sup> on the basis of detailed micro-level data gathered in a large-scale household sample. Essentially, the tax-benefit model is first used to simulate the disposable income of the nuclear family unit (sometimes termed the tax unit) when the individual is unemployed. This involves simulation of the relevant social welfare unemployment compensation and of income tax liabilities, as well as the universal child benefit. The counterfactual situation, where the individual is employed, is then modelled. Again, the tax-benefit model is used to estimate the disposable income the tax unit would have in that situation, taking into account changes in social welfare entitlements and tax liabilities, and, where relevant, entitlement to Family Income Supplement (FIS) – the social welfare benefit targeted at low income families depending on wage earnings. In these calculations the gross earnings of the spouse are held constant, but their net earnings or benefit receipt may be affected by their

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<sup>9</sup> As noted earlier, the calculations for each individual incorporate the net impact on the income of the nuclear family e.g., if one spouse/partner earns more, this may have an impact on the benefit or tax payable by the other spouse.

partner's employment status<sup>10</sup>. The replacement rate is then calculated as the ratio of family income when out-of-work to family income when in work.

For people who are not currently in paid work,<sup>11</sup> a key issue is how much they could expect to earn if they were employed. One approach is to use a particular gross earnings level – such as (some proportion of) average industrial earnings or the minimum wage – as the prospective earnings for all those not currently in work. This approach is typically used in the context of "example household" calculations. For example, the OECD produces estimates of replacement rates at average wages and at 67 per cent of average earnings. However, this takes no account of the variation between individuals in the wages that they can reasonably expect to earn in the labour market. Under this approach the same wage would be used for someone who has dropped out of school with no qualifications and for a graduate, for example. Others might argue for an examination of replacement rates at the minimum wage – which is below the usual OECD low wage scenario of 67% of average earnings. But this would ignore the fact that only a small proportion of jobs are at the minimum wage; and that a scenario in which jobs are created only at the minimum wage is unrealistic.<sup>12</sup>

There is a more persuasive approach. Empirical studies employing micro-data to examine incentive effects typically use a predicted wage which takes into account such individual characteristics. For example, this is the approach used in Adam *et al.* (2010) in the Mirrlees Review (Institute for Fiscal Studies, 2010). – now a major landmark in tax policy analysis. This is the concept used in our microsimulation approach (following earlier work by Callan *et al.* 1996) and in Adam *et al.* (2006) and Adam and Browne (2010). The key point is that jobseekers vary in the wage that they can reasonably expect to attain in the labour market, and that a method which allows for this is more realistic than a "one wage fits all" approach.

Wage equations are estimated separately for four categories: single women, single men, married women and married men.<sup>13</sup> The key variables used to predict hourly wages are age (and its square, to allow for a positive but decreasing impact) and five levels of educational qualification (none beyond primary is the base case, followed

<sup>10</sup> For example, net earnings may be affected because if a partner moves out of employment, the partner remaining in employment may face a lower tax bill. Conversely, if one spouse enters employment, this may lead to a reduction in social welfare benefit for the other spouse.

<sup>11</sup> This includes those who are unemployed – whether or not they receive any jobseeker payment – and those who classify themselves as not in the paid labour market.

<sup>12</sup> Our approach includes examination of replacement rates at the minimum wage for individuals who are likely to face such low wages.

<sup>13</sup> The difference between this approach and one which uses separate dummy variables for each gender/marital status combination is that the approach taken here allows for coefficients on other variables, such as educational qualifications or age, to vary by gender and marital status.

by Junior Certificate or equivalent, Leaving Certificate, non-degree third level, and third-level degree or higher). Adam and Browne (2010) use a similar approach to estimate wages for non-workers in the UK, including also characteristics such as ethnicity and housing status to explain expected wages. Those who are in employment may differ from those who are not in employment not only in measured characteristics (such as age or education) but also in terms of unmeasured characteristics (for example, health or ability). We allow for this possibility, using the Heckman method to allow for self-selection into employment. The number of children, as well as the variables in the wage equation, also influencing selection into paid employment. The minimum wage for those under 18 years of age, which at €6.06 is 30 per cent below the general minimum wage, is used as a floor for predicted wages.<sup>14</sup> Weekly earnings are generated on the basis of a job with a 40 hour week – this is the modal value reported by full-time workers in SILC 2010. As these reported hours data are used in the generation of hourly wages for those in work, which are the basis for the wage equation, the full-time hours figure used here must be consistent with that data.

For those who are in employment, estimating a replacement rate requires a simulation of the income they would obtain if they were unemployed. The main issue to be decided here is whether the replacement rate should be calculated on the basis of an entitlement to Jobseeker's Benefit (JB), or to Jobseeker's Allowance (JA). The qualification conditions for Jobseeker's Benefit mean that not all of those in employment would qualify for it. Those who did qualify would receive it for a maximum of one year, then transferring to the JA rate if they remained unemployed and satisfied the search for work criterion. In many instances, the payments received on JA and JB would be the same; but where differences occur, the rate on JB would be higher, meaning that some of those who are employed would have a higher replacement rate for up to a year, if the calculation were done in terms of an entitlement to JB. Two considerations point towards the use of the JA rate. First, if the in-work/out of work decision is thought of as a long-term one, then the JA rate would be the more relevant one. Second, much of the focus in recent debate (IMF, 2012; OECD, 2011) has been on long-term replacement rates. For these reasons, we focus here on calculations which are based on the JA rate. It should be noted that only the replacement rates of those who are currently *employed* would be affected by an alternative treatment seeking to apply JB rates instead of JA rates. Changing this assumption would have no impact on replacement rates for those who are currently unemployed or not in the paid labour market. Shifting to allow JB where individuals qualify for it would make replacement rates for employees somewhat higher – but the individuals concerned are still observed to be in employment.

<sup>14</sup> We allow for the fact that wages cannot be perfectly predicted – an error term, drawn from the normal distribution, is added to the predictions to ensure that the "spread" of predicted wages is in line with what is indicated by the estimated wage equation.

The appropriate treatment of Family Income Supplement (FIS) is also an issue. Entitlement to FIS is modelled by SWITCH on the basis of the parameters of the scheme, and FIS entitlements can be included as part of in-work income in the calculation of replacement rates. However, some research suggests that the take-up of this scheme appears to be particularly low, with perhaps only one-third of those entitled actually in receipt of the payment (Callan *et al.*, 2005).<sup>15</sup> For this reason we present detailed results on the basis of a low take-up assumption, under which one in three of those entitled to FIS is attributed that benefit.<sup>16</sup> If take-up of FIS is higher than 1 in 3, then the incidence of high replacement rates would be lower than estimated here, because FIS is well targeted on those facing high replacement rate.

### 3 INTERNATIONAL COMPARISONS BASED ON EXAMPLE HOUSEHOLDS

Irish policy needs to be based, among other things, on accurate information on how the Irish system compares with other countries. This has become all the more important with the influence of the Troika on Irish economic policy. The most extensive international database on work incentives is that developed and maintained by the OECD. ([www.oecd.org/els/social/workincentives](http://www.oecd.org/els/social/workincentives)) This large and complex database involves calculations of in-work incomes and out-of-work incomes for a range of family types and income levels. OECD (2012) states that:

"Net replacement rates, calculated taking tax-benefit regimes into account and considering the family as a whole, show the proportion of in-work income that is maintained when someone is unemployed, and provide important insights when considering both benefit generosity and incentives to work."

Much effort is devoted to ensuring that the underlying calculations are accurate, and very comprehensive documentation and web resources are provided to allow users to understand how the statistics are derived. The OECD statistics on financial incentives to work include standardised calculations for a wide range of different situations e.g., for different family types, different wage levels and differing access to benefits. While the calculations regarding the individual cases are accurate, some interpretations of the results do not take into account the composition of actual unemployment, and the extent to which "add-on" payments are or are not received by the unemployed population. These factors, as will be shown, can have a substantial impact on how benefit regimes compare in practice.

<sup>15</sup> A study by Millward Brown IMS (2008) concludes that take-up of FIS is high. The contrast between the results seems to reflect differences in the time period over which income is assessed, when trying to establish whether cases are eligible for FIS or not. The Millward Brown study was based on an annual income, while the Callan *et al.* (2005) study was based on current income at the time of the survey. The time period actually used for assessment of FIS eligibility lies between these two.

<sup>16</sup> Because FIS is a small scheme, the numbers in receipt of FIS in surveys such as the Survey on Income and Living Conditions (SILC) are rather small. This means that detailed analysis of the determinants of non-take-up, such as can be undertaken with the UK's large-scale Family Resources Survey, is not possible here. So although take-up is likely to be higher for larger entitlements, our analysis is based on a simple random assignment to the take-up and non-take-up categories.

OECD's most recent Economic Survey of Ireland (OECD, 2011) claims that "After very substantial increases up to 2009, long-term unemployment benefit replacement rates in Ireland stand among the highest in the OECD". The IMF echoes this conclusion "The flat structure of unemployment payments results in replacement rates for the long-term unemployed that are high by international standards, contributing to low exit rates from the Live Register." (IMF, 2012). Pina (2011), in an OECD Working Paper claims "NRRs [net replacement rates] after a long unemployment spell become very high in international comparison." (Pina, 2011, p. 9). When a more careful interpretation is undertaken, we find that for most of Ireland's unemployed the financial incentive to work, as measured by the OECD's net replacement rate, is similar to that for many EU-15 countries.

Two factors need to be borne in mind when interpreting OECD numbers regarding the Irish situation:

1. About 70 per cent of Ireland's unemployed receive only the personal rate of Jobseeker's Benefit or Allowance. They are either single and childless, or if married do not qualify for additional payments in respect of a spouse and/or children: they are ruled out because of income or means-tests. (National Economic and Social Council, 2011)
2. Latest available figures (Department of Social Protection, 2012) indicate that about 88 per cent of those who are unemployed did *not* receive a Rent and Mortgage Supplement.

This means that international comparisons based on the entitlements of single, childless people who do not qualify for Rent and Mortgage Supplement are the most relevant for a substantial majority of Ireland's unemployed. In Table 2 below, we present the OECD figures for short-run replacement rates for the EU15, and for the USA and Japan; figures for long-run replacement rates are presented later in this section.

It is clear from the table that very different pictures emerge depending on whether or not it is assumed that the individual, when unemployed, receives Rent and Mortgage Supplement (RMS). Statistics from the Department of Social Protection (2012) indicate that less than 12 per cent of the unemployed receive Rent or Mortgage Supplement. While those who do receive it undoubtedly face high replacement rates, more than 7 out of 8 unemployed people do not receive this supplement, and the replacement rate they face is much lower. Table 2, based on OECD figures, suggests that single people and lone parents in Ireland face short-run replacement rates which are among the lowest in the OECD. For a one-earner couple with two children, the replacement rate in Ireland is close to the European average. Only in the case of a one-earner couple without children is the Irish rate, without RMS, above the European average.

These results are based on a low-wage scenario, at two-thirds of the average wage. As Irish unemployment compensation is flat-rate, replacement rates for Ireland are lower when using the average wage as a benchmark. As many European countries have earnings-linked benefits Irish replacement rates at average wages are lower relative to other countries.

Some similar considerations apply to the UK with respect to Housing Benefit. Replacement rates are very different depending on whether or not it is assumed that the individual receives Housing Benefit. Here, however, the balance between those receiving and not receiving Housing Benefit is rather even, with about half in each category. This points, among other things, to the dangers involved in simply comparing "headline numbers" such as the payment rates for Jobseeker payments in Ireland and the UK. To do so would miss the fact that about half of the UK unemployed also receive Housing Benefit, which can be substantial. Rather than attempting to "average away" this problem, microsimulation estimates in the next section will take account of who does, and does not, receive Housing Benefit in the UK and who does, or does not, receive Rent and Mortgage Supplement in Ireland. The microsimulation estimate will also take account of policy features such as the lower rates of unemployment payment for younger people.

**TABLE 2** Short-Run Replacement Rates at 67% of the Average Wage: Ireland, with (88% Of Cases) and Without (12% Of Cases) Rent and Mortgage Supplement (RMS), in International Context

Single		One-earner couple, No children		One-earner couple, 2 children		One-parent family, 2 children	
UK without HB	19	UK without HB	30	UK without HB	54	UK without HB	45
<b>IRELAND without RMS</b>	<b>51</b>	USA	61	USA	61	USA	60
UK with HB	54	Germany	61	France	73	<b>IRELAND without RMS</b>	<b>66</b>
Austria	55	Greece	63	Italy	73	Greece	71
Greece	58	UK+ HB	65	Greece	75	UK with HB	72
USA	60	France	66	Spain	75	Austria	72
Germany	61	Austria	69	Germany	77	Italy	76
Finland	64	Italy	74	Portugal	77	Germany	76
Sweden	68	Portugal	75	Belgium	77	Netherlands	76
Japan	68	Spain	75	UK with HB	78	Spain	77
France	69	Sweden	76	<b>IRELAND without RMS</b>	<b>78</b>	France	78
Italy	71	Belgium	76	Austria	82	Portugal	79
Portugal	75	Finland	80	Netherlands	84	Sweden	81
Netherlands	76	<b>IRELAND without RMS</b>	<b>82</b>	Sweden	86	<i>Ireland with RMS</i>	82
<i>Ireland with RMS</i>	76	Japan	86	Japan	90	Finland	85
Spain	80	Netherlands	87	Finland	93	Belgium	88
Luxembourg	82	Denmark	90	<i>Ireland with RMS</i>	94	Japan	89
Denmark	84	Luxembourg	98	Denmark	95	Luxembourg	89
Belgium	89	<i>Ireland with RMS</i>	108	Luxembourg	100	Denmark	90

*Note:* These are short-run rates assuming that the individual qualifies for insurance-based unemployment benefit, and without social assistance top-ups. For most countries few "top-ups" are available, with the UK Housing Benefit and Ireland's Rent and Mortgage Supplement being among the few exceptions: these are explicitly identified as alternatives here.

*Sources:* OECD (2012) and EU Tax and benefits indicators database  
[http://ec.europa.eu/economy\\_finance/db\\_indicators/tax\\_benefits\\_indicators/documents/tbi\\_database.xlsm](http://ec.europa.eu/economy_finance/db_indicators/tax_benefits_indicators/documents/tbi_database.xlsm)

**TABLE 3** OECD long-run replacement rates at 67% of the average wage:  
Ireland without (88% of cases) and with (12% of cases) Rent and Mortgage Supplement RMS

Single		One-earner couple, no children		One-earner couple, 2 children		One-parent family, 2 children	
Greece	0	Greece	0	Italy	0	Italy	0
Italy	0	Italy	0	Greece	4	Greece	12
USA	10	USA	17	Spain	45	UK without HB	30
UK without HB	19	UK without HB	30	USA	45	USA	40
Portugal	23	Spain	40	UK without HB	54	Spain	46
Spain	33	Portugal	45	Denmark	64	Portugal	52
Germany	47	Denmark	53	France	66	Sweden	61
France	48	France	56	Portugal	70	France	63
<b>IRELAND without RMS</b>	<b>51</b>	Germany	61	Belgium	74	<b>IRELAND without RMS</b>	<b>66</b>
Austria	53	UK	65	Germany	77	Austria	68
UK	54	Belgium	66	<b>IRELAND without RMS</b>	<b>78</b>	Netherlands	68
Finland	59	Austria	69	UK	78	Finland	71
Sweden	61	Sweden	76	Netherlands	80	Luxembourg	72
Luxembourg	62	Finland	80	Austria	82	UK	72
Japan	64	<b>IRELAND without RMS</b>	<b>82</b>	Sweden	86	Germany	76
Belgium	70	Luxembourg	84	Luxembourg	88	<i>Ireland with RMS</i>	82
Netherlands	73	Japan	86	Japan	90	Belgium	83
<i>Ireland with RMS</i>	77	Netherlands	86	Finland	93	Denmark	84
Denmark	79	<i>Ireland with RMS</i>	108	<i>Ireland with RMS</i>	94	Japan	89

*Note:* These are long-run replacement rates after insurance-based unemployment benefits are exhausted. While OECD's published tables show Ireland with Rent and Mortgage Supplement included, this table shows figures both with and without the supplement, given that about 7 out of 8 unemployed people do not receive it.

*Sources:* OECD (2012) and EU Tax and benefits indicators database  
[http://ec.europa.eu/economy\\_finance/db\\_indicators/tax\\_benefits\\_indicators/documents/tbi\\_database.xlsm](http://ec.europa.eu/economy_finance/db_indicators/tax_benefits_indicators/documents/tbi_database.xlsm)

Table 3 shows corresponding figures for long-run replacement rates (at the end of 5 years of unemployment). For single people, one-earner couples with two children and lone parents with two children Irish replacement rates without Rent and Mortgage Supplement (i.e., the rate relevant to 7 out of 8 of the unemployed) are towards the middle of the international ranking. Countries with similar replacement rates for these family types include France, Austria and Germany. The main change in terms of rankings is that Greece, Italy, Spain and the US have very low (sometimes zero) figures for long-term replacement rates. For one-earner couples without children, the Irish replacement rate is above average, with only three countries having higher figures (Luxembourg, Japan and the Netherlands). Irish replacement rates with Rent and Mortgage Supplement are over 100 per cent for a one-earner couple without children – but this supplement is received by only 1 in 8 of the unemployed.



OECD (2011) continues the practice of comparing countries using an unweighted average of the replacement rates for a number of family types (four in this case) and earnings levels (67% and 100% of average wages). This practice means that each of the family type/earnings level combinations receives equal weight, as if they were equally common. In fact, the structure of Irish unemployment is, as discussed above, quite different – strongly weighted towards single people, where Irish replacement rates are lower than European averages in the short-run, and close to average in the long-run. This compounds the problem of treating the long-term unemployed in Ireland as if they all receive Rent and Mortgage Supplement, when in fact this is received only by a small minority.

The failure of selected examples to adequately represent real populations was one of the motivating forces behind the construction and use of microsimulation models based on nationally representative survey data. It is to such models that we turn in the next section, to obtain a more accurate profile of the replacement rates facing the Irish population – and a comparison with a similar profile for the UK.

#### **4 ESTIMATES BASED ON NATIONALLY REPRESENTATIVE HOUSEHOLD SURVEYS**

We focus initially on new results for 2012. These are based on SILC data for 2010. The income data are uprated in line with (small) income growth over the 2010-2012 period, and are also adjusted to give a better representation of the income tax base, using Income Distribution Statistics published by the Revenue Commissioners. (See Callan *et al.*, 2012 for further details). Our initial focus is on replacement rates facing those who are unemployed, as these are a focus of particular concern and can be compared with results for some earlier years. (When turning to comparisons with the UK we focus on all persons, those in employment, and those who are either unemployed or not participating in the paid labour market – a group consisting mainly of those caring for children or the elderly). Table 4 shows the distribution of replacement rates for unemployed people who are in receipt of Jobseekers Benefit or Jobseeker's Allowance. (There are also unemployed people who for various reasons, including means-testing, are not in receipt of any payment. Typically their replacement rates tend to be lower as there is no loss of welfare benefit when entering employment.)

**TABLE 4** Estimated Distribution of *Unemployed Persons in Receipt of Jobseeker's Benefit or Allowance* by Replacement Rate Category, 2012

Replacement rate	%
Less than 20%	4.1
20%-30%	10.2
30%-40%	16.5
40%-50%	15.7
50%-60%	14.1
60%-70%	10.8
70%-80%	8.4
80%-90%	6.1
90%-100%	6.4
Over 100%	7.8
	<b>100.0</b>

The average (mean) replacement rate facing unemployed people in receipt of Jobseeker payments is 56 per cent (with the median replacement rate at 53 per cent). But it is clear that there is wide variation in the level of replacement rate faced. Close to 73 per cent of the unemployed face a replacement rate of less than 70 per cent – implying that income would rise by at least 40 per cent for those moving into employment. There are, however, significant numbers of unemployed people – about 8 per cent – facing replacement rates of over 100 per cent, indicating that they would experience a cash loss from moving into employment. Our analysis indicates that in more than 6 out of 10 cases where the replacement rate is over 100 per cent, the unemployed person is in receipt of Rent and Mortgage Supplement. The reason that this payment creates particularly high replacement rates is that it is available to those who are not in employment, but, in effect, it is not available to those who are in employment. The impact of the Rent and Mortgage Supplement scheme on replacement rate was highlighted in Callan *et al.* (2006). Our analysis indicates that about 7 out of 10 of the unemployed recipients of RMS face replacement rates of over 80 per cent.

Some individuals have been identified as having longer-term housing needs and have been moved from the RMS scheme to the Rental Accommodation Scheme (RAS). Support on this scheme is available to those in employment, with the level of support being reduced as income rises: this is less inimical to work incentives than the all-or-nothing, employment status based approach of the RMS. A new "housing assistance payment" is being considered (Department of Finance, 2012). This payment would not depend on employment/unemployment status, and would replace the Rent and Mortgage Supplement scheme. The design of such a scheme, balancing levels of support, the rate of withdrawal (which affects work incentives) and overall cost is a very challenging task. Housing Benefit in the UK has become a major part of overall income support, costing almost £20 billion, or over 10 per cent of government spending on social security benefits (Jin *et al.*, 2012). The damaging impact of RMS on incentives is, in part, related to its intention to keep overall cost

low – this was done by excluding those in employment from eligibility, when a scheme which tapered entitlements based on income rather than employment status would have cost more. Resolving this problem will require careful advance planning. Microsimulation modelling of possible options could play a useful role in this regard.

The complexities surrounding entitlements to medical cards mean that this non-cash benefit is not taken into account in the present paper. We can note that there are some parallels between the impact of RMS on replacement rates and the role of the General Medical Services card. (Callan *et al.*, 2006) While medical cards are not directly conditioned on employment status, the structure of the means test governing eligibility for the medical card means that most of those relying wholly on welfare payments qualify, while relatively few of those in work will do so. This issue was considered by Callan *et al.* (2006), who found that when the value of the medical card was taken into account, the incidence of high replacement rates rose. Since then, the introduction of a GP visit card will have softened the "all or nothing" nature of medical card withdrawal into a stepped withdrawal. However, there is still some adverse impact on the financial incentive to work. The policy goal of free primary health care for all – driven by reasons to do with health promotion, equity and more efficient use of scarce resources – would, if attained, help to improve incentives to work. It is noteworthy that for the UK and for most of the EU-15, the nature of the health care systems means that work incentives are not adversely affected as they are in Ireland.

Table 5 takes a closer look at the higher end of the replacement rate distribution for 2012, and compares it with findings for 2005 and 2010. Direct comparisons with years prior to 2005 are not possible because 2005 was the first year in which the SWITCH model captured the impact of the RMS scheme. The results now show the percentage of the unemployed with replacement rates above various cut offs from 70 per cent to 100 per cent. The proportions of high (over 70% or 80%) and very high (over 90% or 100%) replacement rates have fallen between 2005 and 2012. At the 70% cut off the fall was about 3 percentage points, while at the 80% cut off the fall has been sharper, from 25% to 20%. At the upper levels (replacement rates above 90 or 100 per cent) the incidence was approximately stable or fell slightly.<sup>17</sup>

Unemployment rose from 4 per cent in 2005 to about 14 per cent in 2010 and 2012, while the incidence of high replacement rates fell somewhat. These results suggest,

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<sup>17</sup> The figures for 2010 and 2012, which are now based on SILC data for 2010, are higher than estimates based on 2008 data in Callan *et al.* (2011). While updating and reweighting techniques have proved very useful over the years, this is an instance where new data, to reflect the huge rise in unemployment, and changes in its composition, are essential. The new figures reflect changes in the scale and composition of unemployment between 2008 and 2010, rather than any "on the ground" change over the past year.

as might be expected, that the rise in unemployment was largely a macroeconomic phenomenon rather than something driven by a rise in replacement rates.

**TABLE 5** Distribution of High Replacement Rates, 2005, 2010 and 2012 Unemployed on Jobseeker's Benefit or Jobseeker's Allowance

Policy Year	2005	2010	2012
Above 70%	31.7	30.7	28.6
Above 80%	25.2	21.5	20.3
Above 90%	14.5	14.9	14.2
Above 100%	9.0	8.9	7.8

Note: 1. 2005 and 2010 estimates based on SWITCH analyses of data for the respective years. 2012 estimate based on SWITCH analysis of SILC 2010 with policy updated to 2012.

Some factors contributing to high replacement rates are outside the direct control of policy. For example, an individual with a high-earning spouse may face a high replacement rate because his or her additional earnings would represent a small proportion of total family income. Let us focus for the moment on what policy factors contribute to the incidence of very high replacement rates.

- We have already identified Rent and Mortgage Supplement as being a major contributory factor to the highest replacement rates. About 7 out of 10 of those receiving RMS are estimated to have high replacement rate (above 70%) and 4 out of 10 of those receiving RMS are found to have very high (above 90%) replacement rates.
- The Irish welfare system's payment of an Increase for a Qualified Adult (IQA) also tends to raise replacement rates.<sup>18</sup>
- Similarly, increases in respect of qualified children (IQC), which are paid to welfare recipients, but not to those in employment, tend to raise replacement rates.

A closer examination of actual families having high replacement rates will help to identify the roles played by these different factors. Proposals for the reform of child income support, such as the integrated child benefit option developed by the Department of Social Protection (2010) can also be evaluated in terms of their distributional and incentive impacts – but this is beyond the scope of the current paper.

Table 6 compares recent UK estimates of the incidence of high replacement rates with our estimates for Ireland. The comparison should be regarded as an approximate one: while the broad approach adopted in the two studies is similar.

<sup>18</sup> An increase is paid in respect of a qualified adult if his or her income falls below certain limits. An increase is payable to welfare beneficiaries in respect of children, with full payment being made if there is no non-welfare income; a half payment is made if the income of the claimants spouse exceeds a given limit.

There may be some differences in definitions of the relevant populations.<sup>19</sup> For both workers and non-workers, the incidence of high replacement rates (over 70% or over 80%) is higher in the UK than in Ireland. For rates above 90%, Ireland has a higher incidence, particularly for non-workers. For rates above 100%, the UK appears to have a very low incidence, while the incidence in Ireland is close to 4 per cent for both workers and non-workers.

**TABLE 6** Incidence of High Replacement Rates, Ireland and the UK

% with replacement rate above	Workers		Non Workers		All	
	UK 2009-10	Ireland 2012	UK 2009-10	Ireland 2012	UK 2009-10	Ireland 2012
70%	21.8	19.6	37.2	32.7	26.1	23.5
80%	11.4	11.4	20.0	17.2	13.8	13.1
90%	3.8	6.5	5.0	9.5	4.1	7.4
100%	0.3	4.5	0.2	4.4	0.3	4.4

Sources: UK: Adam and Browne (2010), Figure 2.5: as the figures are derived by reading from a graph they should not be regarded as exact. Ireland: Authors' estimates using SWITCH model based on SILC 2010.

These results point towards the Irish system as giving rise to some very high replacement rates, more frequently than is observed in the UK. But this does not seem to be a generalised problem of high replacement rates, as the incidence of rates above 70 per cent and 80 per cent is lower than that in the UK. From a policy perspective, this reinforces the importance of identifying the causes of very high replacement rates, rather than seeing the issue as one which requires generalised measures affecting all those who are unemployed.

## 5 IN-WORK COSTS

While many studies (e.g., OECD 2011; Adam and Browne, 2010) mention the existence of costs which arise from being in employment, most notably childcare costs and travel to work costs, very few studies actually attempt to estimate such costs. In part this is due to the difficulties involved in correctly identifying costs which are attributable being in work. These difficulties mean that there is inevitably a degree of uncertainty as to the exact size of these costs. Nevertheless, it is possible to draw on recent data to provide indications of the size of two of the main costs arising from work, travel to work and childcare costs. A recent working paper on in-work costs in Ireland by Crilly, Pentecost and Tol (2012, henceforth CPT) attracted considerable public and media attention. We find, using more recent data and best practice methods, that the claims made in that paper are not borne out by the evidence. Key differences in our approaches include the following:

<sup>19</sup> A closer harmonisation of the estimates would be a valuable task for future research.

- Our methods for estimating the balance between incomes in and out of work follow best practice, as in previous work at the Institute for Fiscal Studies and the ESRI i.e., gross wages are predicted on the basis of the characteristics of the individual worker, and the implications for net income are examined using a detailed model of the tax and benefit system
- We use data on childcare costs from the Survey on Income and Living Conditions 2010, rather than the Household Budget Survey of 2004/5
- Income data are drawn from SILC 2010 rather than SILC 2005
- Our estimates of travel to work costs are based on the Household Budget Survey 2009/10 rather than 2004/5; and we also make use of evidence from the National Travel Survey 2009

In Section 5.1 we discuss the evidence on travel to work costs, using a number of approaches. Section 5.2 examines childcare costs, arriving at new estimates of the additional costs of childcare for those in full-time employment, based on recent data. Section 5.3 compares estimates of replacement rates as conventionally calculated (based on cash incomes and benefits) with estimates extended to take into account travel to work and childcare costs.

### 5.1 Travel to Work Costs

We draw on two main sources in seeking to identify the additional travel cost arising from an individual taking up employment (or the reduction in travel costs if an individual were to withdraw from employment). The National Travel Survey 2009 (CSO, 2010) contains detailed information on journeys for different purposes and the distances travelled by those who are in work as against those who are unemployed. This can be combined with information on the costs of travel from the Household Budget Survey 2009/10 (CSO, 2012) to derive estimates of the costs of work-related travel. The National Travel Survey gathered detailed information on travel during a given reference day from a randomly selected individual within each household. The data gathered include:

- the number of journeys made
- the reason for making each journey (e.g., work, shopping, visiting friends or family)
- the mode of transport used; and
- the distance travelled

Results from Census 2011 (CSO, 2012, Table 21) show that close to 7 out of 10 work-related journeys are made by car, whether as a driver or as a passenger. Other modes include walking, cycling, public transport, use of a van provided by the employer. Typically these other modes of transport would cost less than travelling by

car. In what follows, we focus on arriving at commuting costs based on car journeys, as the most prevalent mode of transport.

**Method 1:** The National Travel Survey 2009 (CSO, 2011, Table 5) found that average distance travelled by those in employment was 94 kilometres per week more than the average distance for those who were unemployed. At the operating cost indicated by the AA (17.66 cent per kilometre for a car in Band A valued at around €12,000) this would come to an additional cost of €16.60 per week.<sup>20</sup>

**Method 2:** An annual commuter ticket for Dublin bus services would cost just under €14 per week, if purchased using the "taxsaver" facility. A "short-hop" commuter rail ticket, combined with DART, LUAS and Dublin bus services would cost in the region of €17.50 after tax savings. A longer range commuter rail ticket, combined with DART, LUAS and Dublin bus services would cost about €25 per week after tax savings.

**Method 3:** Griffin's (2011) analysis of the National Travel Survey data shows that work-related travel accounted for 1 in 4 of all journeys and for one-third of the total distance travelled. This includes both business travel and commuting, so the proportion of total distance travelled accounted for by travel to and from the place of work is less than 1 in 3.

**TABLE 7** Allocating Household Expenditure on Travel to Work-related Travel

	Excludes vehicle purchases	Excludes vehicle purchases, car tax and car insurance
	€ per week	€ per week
Expenditure on travel*	77.5	55.0
Attributable to work (1/3 of distance)	25.8	18.3
Per worker (1.02 workers per household)	25.3	18.0

\*Excludes air travel, sea travel, taxis and car hire

Prospective travel to work costs for a person who is unemployed or not at work should be the additional cost arising from the commuting. In some cases, an individual may not have access to a car, and might need to purchase a car in order to make the journey to work. However, the evidence suggests that this is not a typical situation. SILC data show that in about 60 per cent of cases, households containing

<sup>20</sup> Those who are in employment travel are likely to travel greater distances because of an income effect. This means that the true work-related cost would be lower than that used here.

an unemployed person have more cars than the number of persons at work. Furthermore, the Census records that 30 per cent of journeys are made by other modes of transport (including public transport, walking, cycling and employer provided vehicles). On this basis, Table 7 presents calculations of the relevant expenditure per worker, arriving at figures of €18 to €25 per week.

Taking all three methods, with different sources of data, into account it is clear that a range of approximately €15 to €25 is a reasonable one for the costs of commuting. In our analysis we examine three options, referred to as low, medium and high travel costs: these correspond to €15, €20 and €25 per week. These well-grounded estimates, based on recent data, contrast with the figure of €80 per week used by CPT.

Appendix 1 shows that travel to work costs at any of these 3 levels have quite limited impact on the incidence of high replacement rates. Further work in this area might look into geographic variations in work-related costs. Household Budget Survey data show clearly that higher overall costs are incurred in rural areas; but the extent to which work-related costs may be higher in rural areas is a question for further research. In what follows we use the central estimate of €20 per week as the basis for analysis of the combined impact of travel to work costs and childcare costs, to which we now turn.

## 5.2 Childcare

A study by Immervoll and Barber (2006) extended the OECD's illustrative examples of net financial rewards from employment to take a specific form of childcare cost into account: the fees charged by childcare centres for a two-year old child. Data on costs were from 2001. Our study improves on this in three respects:

1. Data on actual costs paid by parents are used rather than supposedly typical costs
2. The costs of childcare for all children aged 0 to 12 are taken into account
3. The data we use are for 2010, so that recent changes in policy and patterns of childcare use are taken into account, including the provision of free pre-school places to more than 60,000 children under the Early Childhood Care and Education scheme.

In order to understand the potential impact of childcare costs on the net reward from employment, we first consider evidence on the pattern of childcare use in Ireland. There are two main sources of information on childcare use and childcare costs: the Quarterly National Household Survey, which conducted a module on



Childcare in the 4<sup>th</sup> quarter of 2007, and the Survey on Income and Living Conditions for 2010. The QNHS has the most detailed information and a much larger sample of families with children, but the SILC has more recent information and allows us to explore issues related to rewards from employment in greater depth.

Both QNHS and SILC find that substantial numbers of children are cared for by family members other than their parents, without payment. Appendix 2 shows that SILC and QNHS figures are close, both in terms of the proportion of children who are cared for using paid childcare, and the average household expenditure on childcare by those using paid childcare: about 1 child in 5 is cared for by paid childcare, and average household expenditure on childcare is in the region of €140 per week. This reinforces confidence in the use of the SILC figures for a closer examination of how childcare expenditures vary with work status.

Adam and Browne (2010) note that

*"Deducting [childcare] expenditure from the measure of net income while working makes a considerable difference to the estimated work incentives of parents, but we do not follow this approach. This is partly because some parents spend money on childcare for non-work-related reasons, meaning that it would be wrong to assume that childcare expenditure would not be incurred were parents not to work."*

Here we take account of the fact that parents are observed to spend money on childcare even when one or both are available to care for the child(ren) themselves. For couples, we compare those where both partners are in full-time work, with situations in which one partner is at work, while the other is not. Correspondingly, when it comes to attributing a childcare cost, we attribute a zero childcare cost when one partner is not in employment and the other takes up a job.

The dataset currently constructed for SWITCH includes information on working hours only for employees. There is also a small number of cases where respondents appear not to have provided data on hours, a not uncommon phenomenon in such surveys. We therefore use two strategies to identify couples where both are in full-time work.

- First, we use the hours information to exclude part-time workers, implicitly assuming that all those – mainly self-employed – for whom working hours are not available in our current dataset are in full-time work. (Group A)
- Second, we focus on the smaller group of couples where both are employees where there is definite information that both partners are working 30 hours per week or more. (Group B)

With Group A (full-time employees plus self-employed) there are sufficient numbers to distinguish between 5 different family types for the couples: those with one young child (aged 0 to 4), two or more young children, one primary school age child (aged 5 to 12), two primary school aged children, and those with a mixture of at least one young child and at least one primary school age child.<sup>21</sup> With Group B (full-time employees), some of these cells would contain fewer than 30 cases and could not be reported for reasons of statistical confidentiality. We therefore provide a more aggregate picture (any child aged 5-12, one young child, and all other cases) for the smaller group.

Table 8 shows the costs of childcare for different family types, as estimated by taking the difference in childcare expenditure by one-earner and two-earner couples. Individuals may move from zero to a high cost, but on average, a move from a mid-ranking cost for a one earner couple to a mid-ranking cost for a two-earner couple is more representative. Both the median and the mean have a claim on our attention for this role. The median costs for all one-earner couples is zero, so that all of the median childcare costs are then being attributed to work-related childcare.

**TABLE 8** Childcare scenarios: Cost difference between 1-earner and 2-earner Couple

	Group A: Full-time employees and all self-employed		Group B: Full-time employees	
	Mean	Median	Mean	Median
	€ per week			
One child 5-12	17	0	36	0
Two children 5-12	66	0	36	0
One child 0-4	94	135	97	135
Two children 0-4	133	150	204	200
Children of 0-4 & 5-12	143	100	204	200

These estimates of the cost of childcare are substantially higher than those used by CPT. Despite the differences in the size and structure of childcare costs under these different approaches, the broad results are very similar across all four cases.

The numbers of lone parents recording positive childcare expenditures in SILC are rather low. The levels of childcare expenditure, for those who do use paid childcare, are similar to those in the much larger Quarterly National Household Survey (CSO, 2009). Average childcare costs for those lone parents using paid childcare in that survey (QNHS 2007, Childcare module) were between €100 and €128 per week. But while the SILC data for 2010 show similar expenditure levels, they suggest that a majority of lone parents, even if in paid employment, obtain childcare without a

<sup>21</sup> Because of patterns of family formation, the numbers in this latter category are low – about 10 per cent of families have both a young child and an older child.

payment. This may be from family or friends. If lone parents in employment are ranked by the size of their childcare payment, the middle-ranking person is found to make a zero payment. In the same way, the middle-ranked or "median" childcare payment for lone parents not in employment is also zero. If instead, the average or "mean" payments are compared, the average payment for those in employment is about €23 per week higher than the small average payment made by those out of employment.

In our current analysis, we use the same, higher cost of childcare for lone parents as for couples e.g., €94 to €135 for a child aged under 5. This is to take account of the fact that those lone parents who are in employment may be a group which is partly selected on the basis of availability of family care. Those who are not in employment may therefore face higher cost options on average. We use the rate estimated for couples as a way of taking account of this potential factor.

For those who are in employment, more precise information on childcare costs actually incurred is available in the survey. We use this information to broaden our analysis in two ways:

1. We test out the implications of assuming that *all* childcare expenditures are work-related
2. We compare this approach, using actual expenditures which vary greatly across families, to an approach based on assuming average additional costs, as outlined above. This helps to understand whether findings as regards the impact of childcare costs on the incidence of high replacement rates are much affected by whether an average cost or an actual costs are used.

As shown in Appendix 2 results for the two approaches – actual cost and average additional cost – are very close. While not definitive, this suggests that the results based on average additional costs for those not at work may also be a good guide to the results which would obtain from more individualised predictions of childcare costs. Appendix 3 summarises the main differences between our approach and that of CPT. In the next sub-section, we examine the results based on our approach and contrast them with those of CPT.

### 5.3 Impact of In-Work Costs on Replacement Rates

In this subsection we look closely at the impact of the in-work costs on replacement rates. First, we examine impacts on the whole population – employees, unemployed and those who are not participating in the paid labour market. These results provide new and more reliable evidence on the questions posed by CPT. Then we return to

the unemployed group to examine the impact of the inclusion of in-work costs on the extent of high replacement rates among this group.

**TABLE 9** Estimates of the impact of in-work costs on the incidence of replacement rates above 100%

	CPT(2012)	Estimates from SWITCH, the ESRI tax-benefit model
% with a young child, better off not in work	44%	12-13%
% without a young child, better off not in work	15%	4%
All	not reported	6%

Note: In work costs include travel to work (€20 per week) and childcare (as per Table 8)

Table 9 summarises the key results from the CPT paper, and the corresponding findings from our work. Our results show clearly that the CPT approach substantially overestimated the numbers affected by the most extreme disincentives (a replacement rate of over 100%). We find that even among those with young children, the incidence of these extreme replacement rate is in the region of 12 to 13 per cent, depending on the combination of assumptions used. This is less than one-third of the incidence as estimated by CPT. Almost 7 out of 8 of those with young children would see a gain from being in employment, even after allowing for childcare costs and travel to work.

For those without young children, we estimate the incidence at 4 per cent, again less than one-third of the rate estimated by CPT. Looking at the whole population – those in employment, the unemployed, and those who are not seeking paid employment – we find that close to 95 per cent would gain financially from employment. Only 6 per cent would not be financially better off in work, using calculations which take into account childcare costs and travel to work. This is much closer to the "without children" figure because those with young children are a minority of the overall population.

### *Who faces high or very high replacement rates?*

Who are the individuals facing high or very high replacement rates? Discussion of this topic often focuses on the idea that individuals who are financially better off not working will therefore be found "on the dole". This is not the case, as shown by Table 10. About 7 out of 8 of those with high (over 70%) replacement rates are not in receipt of any Jobseeker payment. Six out of 10 of those in this situation are actually *in* employment. Only 1 in 8 of those who are estimated to be financially worse off in employment<sup>22</sup> is found to be in receipt of unemployment benefits. Almost 3 out of 4 of those who are financially "worse off" in employment, are actually at work, with

<sup>22</sup> The net current reward from employment is zero, when account is taken of childcare and travel costs.

the balance (again about 1 in 8) found to be outside the paid labour market. One of the reasons for staying in work in such situations is that this protects and/or enhances future earnings, which could be damaged by withdrawing from employment.

**TABLE 10** Working or Receiving Benefit? Profiling those with High/Very High Replacement Rates

Replacement rate over 70%		Replacement Rate over 100%	
Employee	60	Employee	74
JA/Job Recipient	13	JA/Job Recipient	17
"Home duties"	28	"Home duties"	9

**TABLE 11** Impact of alternative childcare costs, and travel to work cost (€20 pw) on replacement rates for those who are unemployed and receiving Jobseeker's Benefit or Allowance

Replacement rate above:	No in-work costs	€20 travel to work cost and childcare costs based on full-time employees	
		Mean	Median
	% of unemployed persons with replacement rate above cut-off		
>70%	28.5	34.6	34.6
>80%	20.3	23.7	23.7
>90%	14.3	17.5	17.6
>100%	7.8	12.0	12.2

Table 11 identifies the impact of childcare costs and travel to work costs on replacement rates facing those who are unemployed. The inclusion of both travel to work costs and childcare costs in the mix leads to a greater incidence of high replacement rates. The proportion facing replacement rates over 70 per cent rises by with a 6 percentage points, with a rise of up to 4½ percentage point rise in the proportion facing replacement rates above 100 per cent. While these results are much more limited in scale than was suggested by CPT, they show that for a minority of the unemployed, childcare costs can contribute to a significant disincentive to work. The policy issues arising from this deserve further investigation, now that the scale of the issue has been accurately assessed.

## 6 CONCLUSION

More than 3 out of 4 individuals in Ireland have replacement rates below 70%, meaning that income in work is more than 40% higher than out of work income. About one-third of those who are unemployed or not at work have replacement

rates above 70% - fewer than a similar study found for the UK.<sup>23</sup> High replacement rates were more common in 2005, when the unemployment rate was 4 per cent, than in 2012, when unemployment had reached 14 per cent. Ireland does not have a generalised problem of high replacement rates damaging incentives to work. There are however, significant numbers of individuals facing very high replacement rates (over 90 or 100 per cent). Many of these arise because of the Rent and Mortgage Supplement Scheme, which pays a housing cost supplement to those who are not in work, but rarely provides support to those who are in employment. The IMF concludes that "The highest replacement rates affect those also receiving housing benefits. To avoid unemployment and inactivity traps for this cohort, it is important to integrate the systems of social housing provision and rent supplement for those with long-term housing needs into a new means-tested Housing Assistance Payment." We agree with this analysis. The design of an integrated housing support is a matter of urgency.

It is our contention that results from the OECD database have been misinterpreted by both the OECD and the IMF, each of which maintains that Ireland's long-run replacement rates are high by international standards. We find, using the OECD's own statistics, that replacement rates for Ireland are close to typical values for EU15 countries, and document the factors which make the simpler comparisons unrepresentative.

What impact do in-work costs, such as childcare and travel to work costs, have on the net financial reward from employment? We examined this issue using recent data and "best practice" methods. We found that the paper on "costs of working" (Crilly, Pentecost and Tol, 2012 – CPT) greatly overestimated the impact of these costs on financial incentives to work. CPT stated that 44 per cent of those with young children would be better off out of work, but our analysis, based on more recent data and best practice methods, shows a figure of 12 to 13 per cent. Furthermore, we find that a majority of those who are potentially better off out of employment are actually *in* employment. Only about 1 in 4 of those facing high disincentives is receiving a Jobseeker payment.

Policy debate in the area of work incentives can easily be misled by concentrating on particular examples. Policy making needs to pay careful attention to evidence which is nationally representative, such as that provided in this study.

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<sup>23</sup> Adam and Browne (2010) found that 37 per cent of those who were unemployed or not at work faced replacement rates of 70 per cent or more in the UK.

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## APPENDIX 1 Exploring the Impact of Commuting Costs

Table A1.1 examines the impact of alternative travel to work costs on replacement rates.

**TABLE A1.1** Impact of alternative travel to work costs on replacement rates for all employees and those not at work

	Cash replacement rate	Replacement rates including travel to work cost		
		€15	€20	€25
>70%	23	25	26	26
>80%	13	14	15	15
>90%	7	8	8	9
>100%	4	5	5	5

Table 12 shows that the net impact of travel costs on the incidence of high replacement rate is quite small. This is true even at the higher end of the range (€25 per week). While for some individuals travel costs may be an important consideration, survey evidence shows that the overall impact on replacement rates is not large.

## APPENDIX 2 Childcare Costs: Evidence from QNHS 2007 and SILC 2010

**TABLE A2.1** Childcare Costs, QNHS 2007 and SILC 2010

	Childcare module, QNHS 2007, 4 <sup>th</sup> Quarter	SILC 2010
% of all children aged 0-12 using paid childcare	22%	20%
Average expenditure per household per week for those using paid childcare	€144	€139

Both QNHS and SILC find that close to 4 out of 5 children are cared for without the use of paid childcare – either directly by parents, or by family members without payment. Estimates of average expenditure per household are also very similar, at about €140 per week.

In terms of paid childcare, there is great diversity in levels of payments both within and between modes of care. Very many children are cared for by childminders, in their own homes or in the minders' homes. Table A2.1 documents, for those parents who are purchasing paid childcare, the proportions at various levels of cost:

**TABLE A2.2** Variation in childcare payments across households

Childcare expenditure per week	% of households
Under €40	21%
€40 to €85	29%
€85 to €150	20%
€150 to 200	14%
Over€ 200	16%

There is wide variation in cost levels, with about half paying less than €85 per week, and 7 out of 10 paying less than €150 per week. About 1 in 6 paid more than €200 per week.

### APPENDIX 3 Comparison of Methods and Data Sources

Table A3.1 summarises how our approach to the identification of in-work costs and their impact differs from that of CPT. The differences in data sources used are relatively straightforward: we use more recent data, with better quality information on work-related transport and childcare. CPT estimated the additional childcare cost of one child under 4 as €43 per week. Our findings, based on more recent evidence than CPT, suggest an additional cost of childcare for a child under 5 of close to €95 per week. At the same time the CPT estimates of travel to work cost appear implausible, with more recent data suggesting a figure of €15 to €25 per week as compared with the €80 used in CPT. Thus, the approach adopted by CPT to identifying work-related costs (regression with income and other controls, and a change in the status of the Chief Economic Supporter from out of work to in work) arrives at estimates of travel costs that are too high, and childcare costs which are too low. These errors do not "cancel out" because travel costs affect everyone, while the costs of young children affect a much smaller number of families. There is no reason to believe that the method used by CPT is any more reliable in estimating costs associated with clothing and with takeaway food. As regards clothing, it is arguable that some jobs need uniforms; some need smart clothes; many others need ordinary clothes which do not impose a work-related cost. We do not attempt to make adjustments for these items, as the strength of the case for them is much weaker, and international discussion of these issues does not focus on them.

An additional advantage of this paper's approach is that it is grounded in best practice internationally in the measurement of work incentives. Each family's situation in and out of work is simulated in detail – allowing for the impact of in-work welfare benefits such as Family Income Supplement as well as out of work benefits such as Jobseeker's Allowance and Jobseeker's Benefit. The careful construction of counterfactual scenarios under this approach gives a more accurate picture of the gaps between income in-work and out-of-work than the "reduced form" regression of net incomes used by CPT.

**TABLE A3.1** Data and methods used to identify in-work costs and their impact: CPT (2012) approach and our approach

		CPT approach <sup>1</sup>	Our approach
Travel to work costs	Data source(s)	HBS 2004/5	National Travel Survey 2009 and HBS 2009/10
	Identification of additional costs associated with an additional job	Regression coefficient for in-work status of "Chief Economic Supporter" of household	Three alternatives, based on mileage, public transport options and one-third share of relevant household transport costs (equal to share of work-related travel in total travel distance)
Childcare costs	Data source	HBS 2004/5	SILC 2010
	Identification of costs of childcare	Regression coefficient for in-work status of "Chief Economic Supporter" of household	Actual costs of childcare for those in employment. Average additional costs of childcare for 2-earner couple (full-time) over 1-earner couple for others.
In- and out-of-work incomes	Data source	SILC 2005	SILC 2010
	Prediction of out-of-work income of those in work Prediction of in-work income for those not at work	Reduced form equation for net income. Variables do not include age. Change in income based on coefficient for in-work status of "Chief Economic Supporter".	Prediction based on SWITCH tax-benefit model, taking individual and family circumstances into account Gross wage predicted using age, highest educational qualification, gender, marital status. Tax and welfare implications traced through using detailed tax-benefit model (SWITCH).
Childcare cost attribution		Childcare costs attributed (Figure 2) to all those with children of relevant age.	Childcare costs attributed only to those with children of relevant age, and in the case of couples, only when there are two earners (full-time or part-time).

<sup>1</sup> Crilly, Pentecost, Tol (2012)

## APPENDIX A4 Impact of Actual and Average Childcare Costs on Replacement Rates

**TABLE A4.1** Impact of alternative childcare costs, and travel to work cost (€20 pw) on replacement rates for all employees

	Childcare costs		
	Cash replacement rate	Actual	Average, Full-time employees and self-employed
>70%	20	25	25
>80%	11	15	16
>90%	7	8	10
>100%	4	5	7

Table A4.1 shows that childcare costs, combined with travel to work costs, do make a difference to the replacement rate distribution for employees. The proportion facing replacement rates of over 70 per cent rises from 18 per cent to 23 per cent, and the proportion facing the highest replacement rate rises from 4 to 6 per cent. Nonetheless, more than 3 out of 4 employees face replacement rates below 70 per cent.

There is, however, little difference between proportions with replacement rate above 70 or 80 per cent when estimated using actual childcare costs or average costs (for Group A, those who are definitely not part timers). For the highest cut offs (90 and 100 per cent), the proportions are higher when using the average additional cost approach. These results is of particular significance when it comes to interpreting results for those unemployed or not at work.



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