

# The impact of the Future Focus work obligations for sole parents: Technical report

July 2013

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# 7 Executive summary

## Introduction

This report estimates the impact of the Future Focus work obligations for sole parents receiving the Domestic Purposes Benefit (DPB-SP) on the time affected clients remained on benefit.

Under Future Focus, part-time work obligations were introduced from 27 September 2010 for all clients receiving DPB-SP with youngest children aged six or over. Clients subject to work obligations were expected to look for work of 15 hours or more per week unless an approved temporary work exemption was applied. Clients who failed to meet their obligations without good and sufficient reason could be subject to a 'work test failure' and incur benefit sanctions.

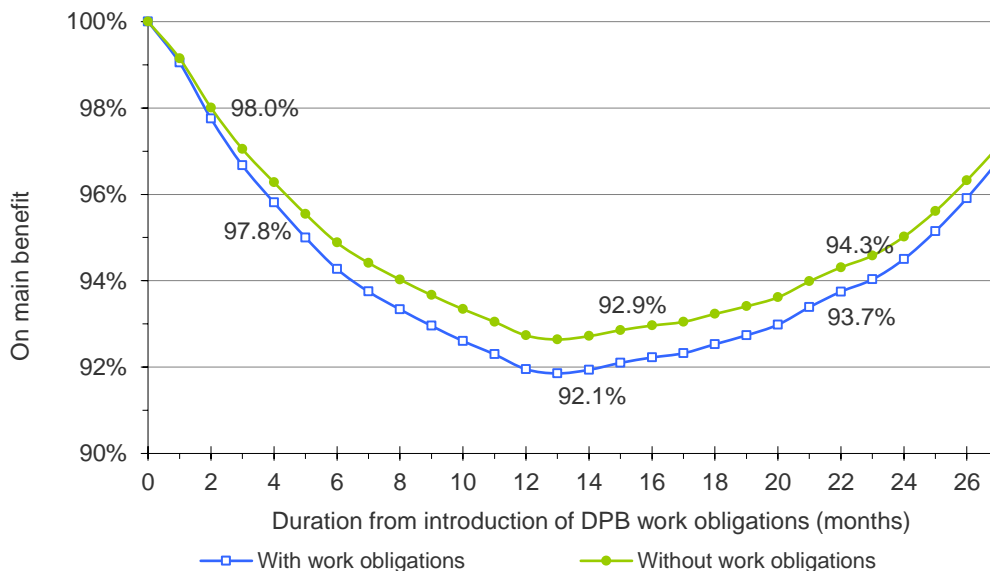
## Main findings

*The introduction of work obligations under Future Focus reduced the time affected DPB-SP clients spent on benefit*

- Between 27 September 2010 and the end of December 2012, the work obligations reduced the time affected DPB-SP clients spent on benefit by an average of five days.
- Based on the above result, we calculate that the work obligations resulted in an average reduction of 400 DPB-SP clients on main benefit each month in the same period.
- We estimate that this reduced main benefit expenditure by \$12.9 million<sup>1</sup> in the period.

Figure 1 shows the impact of the work obligations on the time affected DPB-SP clients spent on main benefit from the point when they were first subject to the policy.

**Figure 1:** Impact of the Future Focus work obligations on the probability that a DPB SP client will remain on main benefit



Note: These are not survival curves, since they account for clients returning to main benefit after exit.

Source: Information Analysis Platform (Benefit Dynamics Dataset [BDD]), Centre for Social Research and Evaluation (CSRE), Ministry of Social Development (MSD) (research data not official MSD statistics).

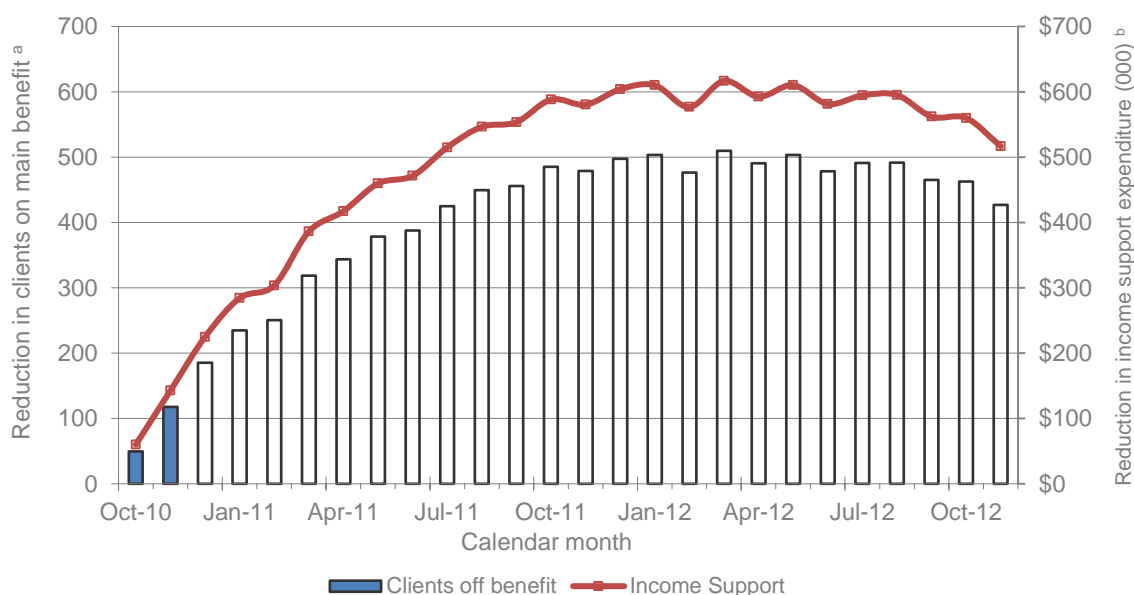
<sup>1</sup> This figure is in 2012 dollars.

In the 26-month follow-up period, the introduction of work obligations reduced the proportion of DPB-SP clients on benefit, especially in the period 12 to 15 months after they were first subject to the policy (Figure 1).

This reduction in the time spent on benefit reflects DPB-SP clients exiting main benefit after a shorter length of time than they would have in the absence of work obligations. The introduction of work obligations has not changed how soon these clients return to benefit after exit.

Figure 2 shows the estimated reduction in DPB-SP client numbers as a result of the Future Focus work obligations between October 2010 and November 2012, and the corresponding reduction in main benefit expenditure in the same period. The work obligations had the greatest impact on DPB-SP client numbers in March 2012, and continued to have a steady impact on DPB-SP client numbers and benefit expenditure following this point.

**Figure 2:** Estimated impact of work obligations on the average number of clients on benefit, and income support expenditure by calendar month



**Notes:**

a: Estimated reduction in the number of clients on main benefit during the month as a result of the work obligations.

b: Based on the reduction in clients on main benefit multiplied by the average main benefit rate (in 2012 dollars) for clients on DPB-SP (excludes supplementary and third-tier assistance).

Source: Information Analysis Platform (BDD), CSRE, MSD (research data not official MSD statistics).

We have not yet seen the full impact of the work obligations, as the counterfactual and modelled outcomes have not yet converged for DPB-SP clients who entered benefit at the very end of the study period. Therefore the observed impact reported here is an underestimate of the full effect of the obligations.



# Introduction

## Purpose

The purpose of this technical report is to present the analysis used to estimate the impact of the Future Focus work obligations for sole parents receiving the Domestic Purposes Benefit (DPB-SP).

The evaluation focused on the impact of the work obligations on the time affected clients spent on main benefit and the corresponding impact on income support expenditure for these clients. This report sets out the methodology and modelling that underpinned the analysis, together with an outline of the key findings.

## Structure of the report

This report is divided into two parts. The first section provides a background to the analysis and a summary of trends in client numbers, the labour market and the demographic backdrop to the study. It also sets out the context for the Future Focus policy changes.

The second section sets out the evaluation approach to assessing the impact of the Future Focus work obligations for affected DPB-SP clients. It is followed by the findings of the analysis, and a discussion of these findings.



# Background

The Future Focus package of changes to New Zealand's welfare system was announced on 23 March 2010, and most changes came into effect on 27 September 2010. For DPB-SP clients the changes included:

- part-time work obligations for clients with youngest children aged six or over, with sanctions for those who did not comply
- some increased incentives and support to take up work and study
- new requirements for frequent users of hardship assistance.

This section outlines the context for the Future Focus reform and provides details of the changes for DPB-SP clients and the policy settings prior to their introduction. It concludes with a summary of the administrative settings for DPB-SP clients before and after the reform.

## The context for reform

The Future Focus package was implemented against a backdrop of growing DPB-SP client numbers. A weak economy, the arrival of a 'baby blip' cohort into child-bearing age, relatively high fertility and an increase in the proportion of parents who were sole parents were all combining to put upwards pressure on client numbers.

### Economic recession and reduced employment

After a period of strong economic growth and labour demand beginning in the late 1990s, the economy went into recession in March 2008. An impact of the recession was a reduced availability of part-time and full-time employment, and between 2008 and 2010 the unemployment rate almost doubled, resulting in increases to Work and Income client numbers.

Household Labour Force Survey (HLFS) data suggest that sole parents were disproportionately affected by the reduction in employment.<sup>2</sup> The proportion of sole mothers in employment fell from 53 percent in 2007 to 47 percent in 2010, while the unemployment rate for this group increased from 10 percent to 17 percent.<sup>3</sup>

In 2011 the labour market stabilised and began to show signs of a gradual recovery, although demand for low-skill labour was still low. For the last three quarters of 2011 the employment rate was at a constant 63.9 percent. The unemployment rate decreased slightly in the December 2011 quarter; however, this was attributed to a decrease in the participation rate rather than to any change in the employment rate. This trend was particularly noticeable for women, with a decreasing unemployment rate for women in 2011 mirrored by a decreasing participation rate, indicating that more women were leaving the labour market.

### High fertility rates

Fertility rates increased substantially between 2006 and 2007/2008 and remained higher in 2010 than in the early and mid-2000s, particularly among younger women.<sup>4</sup> This increased the number of

<sup>2</sup> Wilson, M., Johnston, S. and Macky, R. (2010). *The Potential for New Family Statistics from the Household Labour Force Survey*. Statistics New Zealand, Wellington.

<sup>3</sup> *Statistics New Zealand: Household Labour Force Survey, customised series, annual average calculated for the four quarters to December*. Statistics New Zealand. Wellington.

<sup>4</sup> Statistics New Zealand (2011). *Births and Deaths: Year ended December 2010, Hot off the Press*. Statistics New Zealand, Wellington.

families in the population caring for younger children, a stage in the family lifecycle when rates of benefit receipt are at their highest.<sup>5</sup>

### High numbers in younger child-bearing age groups

The number of women in younger child-bearing age groups increased between 2007 and 2010 as the 'baby blip' cohort born in the late 1980s and early 1990s moved through their late teens and into their early 20s. A high proportion of women who become mothers at these ages are sole mothers.<sup>6</sup>

### Increased rate of sole parenthood

HLFS data indicate that in the second halves of 2009 and 2010 the proportion of mothers who were sole mothers was trending upwards after a period of decline.<sup>7</sup> These shifts appear to be at least partly linked to economic conditions.<sup>8</sup>

## Policy and administration changes before Future Focus

The Future Focus package forms part of a two-decade-long series of reforms aimed at increasing sole parent employment and reducing receipt of DPB-SP.<sup>9</sup> These included:

- benefit reductions (in 1991)
- part-time work obligations for clients with youngest children aged 14 and over (1997–1999)
- full-time work obligations for clients with youngest children aged 14 and over (between 1999 and 2003, when work tests were removed)
- planning obligations for clients with younger children (between 1997 and 2003, for all clients from 2003 to 2008, and at the discretion of case managers from 2008)
- enhancements to the supply and subsidisation of childcare services
- improved financial incentives to work (most recently with the Working for Families reform implemented between 2004 and 2007).

### Financial incentives

The financial incentives introduced by Working for Families were left largely unchanged by the Future Focus changes.<sup>10</sup>

Sole parents can receive in-work tax credits if they are working at least 20 hours a week and not receiving benefit. In most cases these entitlements make DPB-SP clients in employment better off financially than those in receipt of benefit.<sup>11</sup> However, in some cases the financial gain could be

<sup>5</sup> The proportion of children included in main benefits falls with age. Wilson, M. and Soughtton, D. (2009). Children in families supported by main benefits: An update. *Social Policy Journal of New Zealand* (36) 142–153.

<sup>6</sup> Based on Family Tax Credit data, an estimated three-quarters of teenage mothers are sole mothers. Based on the HLFS, more than 40 percent of mothers aged 20–24 are sole mothers.

<sup>7</sup> Statistics New Zealand: Household Labour Force Survey, customised series, annual average calculated for the four quarters to December. Wellington. New Zealand.

<sup>8</sup> Ministry of Social Development (2010). *Sole Parenting in New Zealand: An update on key trends and what helps reduce disadvantage*.

<sup>9</sup> For overviews of previous changes, see Ministry of Social Development (2007). *The 2002 Domestic Purposes and Widow's Benefit Reform: Evaluation report*. Wellington, New Zealand and Appendix 1 in Dalgety, J., Dorsett, R., Johnston, S. and Spier, P. (2010). *Employment Incentives for Sole Parents: Labour market effects of changes to financial incentives and support. Technical report*. Ministry of Social Development and Inland Revenue. Wellington, New Zealand. For a longer historical perspective, see Goodger, K. (1998). Maintaining sole parent families in New Zealand: An historical review. *Social Policy Journal of New Zealand* (10) 122–153.

<sup>10</sup> Aside from the slight change to Childcare and Out-of-School Care and Recreation (OSCAR) Subsidy abatement thresholds.

<sup>11</sup> There is good evidence that improved financial incentives introduced with Working for Families between 2004 and 2007 accounted for a substantial part of the reduction in DPB-SP receipt and growth in sole parent employment that occurred in that period. Dalgety, J.,



limited as a result of transport and other costs of working, and increases in other outgoings that result from movement off benefit or an increase in income (for example income-related rents<sup>12</sup> or debt repayments). For those on low pay, any financial gain from any increase in hours of employment beyond 20 would be limited due to high effective marginal tax rates as in-work assistance abates.

Depending on the circumstances of the other parent, Child Support could make an important contribution to financial incentives to leave benefit for employment.<sup>13</sup> While in receipt of benefit, all Child Support payments up to the value of the benefit were retained by Government. After leaving benefit, these payments were received directly. These provisions remained unchanged in the period that Future Focus was implemented.

### Planning and activity obligations

When full-time work obligations were removed for DPB-SP clients with older children in 2003, a requirement to participate in Personal Development and Employment Planning was introduced for all DPB-SP clients. This requirement was accompanied by sanctions for non-compliance.<sup>14</sup>

The Social Security Amendment Act 2007 revised the requirements so that clients could be required to:

- undertake planning
- undertake work-related activities or programmes in their plans
- undertake any activity or rehabilitation<sup>15</sup> considered suitable for them to improve their prospects for employment.

From April 2008, the development of a formal Personal Development and Employment Plan was no longer administered as a blanket requirement, but was at the discretion of case managers. Case managers were instructed to continue having goal-setting conversations with clients, but to only develop formal plans where clients themselves sought this form of assistance. In the absence of a plan, sanctions for non-compliance could not apply.

Only a quarter of DPB-SP clients had Personal Development and Employment Plans in place when Future Focus was introduced. For the remainder, participation in planning and related activities was, in effect, voluntary.

### Assistance with training

From 28 May 2009 Training Incentive Allowance could be paid to assist clients to participate in approved courses below Level 4 on the National Qualifications Framework. (Previously Training Incentive Allowance could be paid in respect of undergraduate study at Level 4, and clients who were already receiving Training Incentive Allowance for Level 4 courses could continue to receive the allowance until they completed study for their current qualifications or, if the study remained uncompleted, until 31 December 2011.)

In 2010, Training Incentive Allowance paid for actual costs associated with attending a course up to a maximum of \$98.45 for each week of the course (a maximum of \$3,938 for a year).

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Dorsett, R., Johnston, S. and Spier, P. (2010). *Employment Incentives for Sole Parents: Labour market effects of changes to financial incentives and support. Technical report.* Ministry of Social Development and Inland Revenue. Wellington, New Zealand.

<sup>12</sup> Which limit rent for tenants of Housing New Zealand to 25 percent of income.

<sup>13</sup> Patterson, L. (2009). The limits of work-activation: New Zealand lone mothers' income adequacy, security, and sustainability over time. *Low Income Lone Mother Project Working Paper*, Fletcher, M. (forthcoming). Some policy issues for reforms of assistance to sole parents. *Policy Quarterly*, Institute of Policy Studies.

<sup>14</sup> Ministry of Social Development (2007). *The 2002 Domestic Purposes and Widow's Benefit Reform: Evaluation report.* Wellington, New Zealand.

<sup>15</sup> Other than activity or rehabilitation involving participation in work, voluntary work, or unpaid work experience or medical treatment.

In addition to Training Incentive Allowance, students could borrow from the Student Loan scheme for tuition fees and course-related costs not covered by Training Incentive Allowance. Students could not receive Student Allowance for tertiary study while still receiving DPB-SP.

### Case management and service delivery

As part of Work and Income's 'Lean Six Sigma'<sup>16</sup> service improvement strategy, clients no longer had dedicated case managers. Clients coming in for appointments in Work and Income sites generally saw the first available case manager, unless they requested otherwise. Where annual renewals of benefit had previously required face-to-face interviews, in some regions there was a shift in practice towards carrying out face-to-face annual renewals only with selected clients.

From 2007 onwards, an increasing number of Work and Income sites became Community Link sites. At these sites, a range of government and non-government service providers were located together. One of the aims was to deliver integrated case management, with seamless and co-ordinated packages of support and services from various agencies for clients and their families.

## What changed under Future Focus for DPB-SP clients?

### Work obligations

From 27 September 2010, part-time work obligations were introduced for DPB-SP clients with youngest dependent children aged six or older. These clients were required to:

- be available for, and take reasonable steps to obtain, suitable part-time employment
- accept any offer of suitable employment, including temporary part-time employment or part-time employment that was seasonal or subsidised
- attend and participate in interviews for any opportunity of suitable part-time employment to which the clients were referred
- attend any interview with Work and Income or on behalf of Work and Income
- undertake planning for employment
- report to Work and Income on progress in meeting their work obligations as often as required
- undertake any activity to improve their work readiness and employment prospects, including any work assessment, any programme or seminar, any work experience or work exploration activity, any employment-related training, and rehabilitation (but not medical treatment).

Under Future Focus, Work and Income could require work-obligated DPB-SP clients to accept offers of suitable employment of, on average, 15 hours a week or more. Clients could choose to accept jobs of less than 15 hours a week, although they would not be fully meeting their part-time work obligations and would still be required to seek more hours of work.

All 43,000 existing clients<sup>17</sup> affected by work obligations were notified of the change in letters sent out in a two-week period from 16 August 2010. After that date, DPB-SP clients with youngest children turning six were automatically sent letters four weeks prior to the children's birthdays, advising that they were subject to the work obligations and that they would be contacted at a later stage with appointments to discuss these obligations.

For clients with youngest children aged under six, Personal Development and Employment Plans were replaced with 'Employment Plans' to refocus obligations on employment-related activities.

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<sup>16</sup> Lean Six Sigma is a combination of two business methodologies aimed at improving service quality and efficiency. *Six Sigma* focuses on standardising processes to reduce variation, looking at what the client wants, and reducing mistakes and the costs of having to fix them. *Lean* focuses on eliminating wasted effort and time, including rework (doing the same action more than once because it was done incorrectly the first time), waiting (queues), and overproduction (unnecessary tasks). Lean Six Sigma brings these two methods together.

<sup>17</sup> Existing clients on benefit as at the end of 2009.

## Exemptions

Provision was made to exempt some clients from work obligations in cases where they were unable to work immediately; for example, where they had recently separated or were caring for children with special needs. Clients studying full-time at Level 4 or above could also be exempted.

## Sanctions for non-compliance

Clients who did not comply with their work obligations (for example, they failed to attend seminars aimed at improving their employment prospects) could have sanctions applied to their benefits. The sanction reduced their benefits by 50 percent until they complied. Clients continued to receive the full value of supplementary assistance and Family Tax Credits throughout.

The process for applying sanctions was streamlined. Following a work obligation failure, a client had five working days to dispute or comply. If the client did not comply within five working days, a sanction was imposed. To comply, the client had to participate in the same activity in which they had failed, or a similar activity.

## Sanctions for voluntary unemployment

New applicants for DPB-SP who had work obligations could face voluntary unemployment stand-downs if they left their employment without good and sufficient reason or became unemployed as a result of misconduct. This applied if they had been in employment for 15 hours or more per week and working for at least 13 weeks.

Similar provisions applied to existing clients with work obligations who left employment averaging 15 hours or more without good and sufficient reason or became unemployed as a result of misconduct.

A client subject to a voluntary unemployment stand-down had their benefit reduced by 50 percent for 13 weeks from the date their employment ceased, or until they undertook an approved compliance activity for a continuous period of six weeks.

## Phased implementation of active case management

While all 43,000 DPB-SP clients with youngest children aged six or over who were subject to the new work obligations were notified by letter, the implementation of active case management (ACM) of the obligations was phased. This was to ensure that the implementation of the policy changes was matched to the capacity of the labour market to provide jobs and the capacity of Work and Income to deal with the additional workload.

Government agreed that Work and Income would work with a list of 4,500 DPB-SP clients at any one time. This group would receive ACM, during which case managers would apply and enforce the requirements of the work obligations. Clients on the list for ACM were contacted within a fortnight via phone, email or letter in order to arrange appointments to talk about moving towards part-time employment, and were engaged with at least fortnightly thereafter. After three months of continuous engagement, clients were removed from the list to allow for new clients to be added.<sup>18</sup> Where resources permitted, case managers were expected to continue to work with clients who had been removed from the list.

For remaining clients, the previous case management regime would apply until they were included in the client list for ACM. However, Work and Income would actively work with any client who asked to receive work-focused engagement and services (these clients were able to 'opt in' to the engagement process).

In the phased implementation, the order in which clients were scheduled to go onto the client list for ACM was determined by giving each client a random number. This was considered to be the fairest approach from a client perspective. It also provided the basis for a rigorous assessment of impacts.

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<sup>18</sup> Clients could be removed from the list sooner than three months if, for example, they cancelled benefit, were exempted from work obligations or were meeting their obligations, allowing other clients in Government's priority groups to be added. If the status of the clients removed from the list changed (for example, they were re-granted DPB-SP, their periods of exemption ended, or they were no longer meeting their work obligations) they were placed back on the list until they had received three months of continuous engagement.

An evaluation of the impact of ACM of the Future Focus work obligations is provided in a previous study, and is not examined in this report.<sup>19</sup>

### Voluntary active case management phase

Government agreed that ACM with clients in its priority groups would begin in July 2010, in advance of the 27 September 2010 introduction of work obligations.

Legislation covering planning and activity obligations for DPB-SP clients that was already in place prior to the introduction of the Future Focus policies meant that ACM could, in principle, have been made mandatory. However, practical problems associated with commencing sanction processes in the short period meant that, in practice, participation in this initial period was on a voluntary basis.

Clients on the list for voluntary ACM in July 2010 were among the first to be subject to the ACM of the new work obligations when they came into force in September.

In the voluntary phase, some clients elected to not participate or failed to attend scheduled interviews. No further effort was made to engage these clients until after work obligations came into effect.

### Other changes

Other parts of the Future Focus package affecting DPB-SP clients regardless of the age of their youngest children included:

- an increase in the thresholds for benefit abatement – the abatement-free threshold for income while in receipt of benefit increased from \$80 to \$100 per week, and the part-time work abatement threshold (over which benefit abated relatively quickly) was increased from \$180 to \$200 per week
- a new loan of \$500 per year introduced from the 2011 academic year to support DPB-SP clients to study at Level 4 or above – this loan would be available on top of the \$1,000 for course-related costs available through the Student Loan scheme
- two changes aimed at making it easier for out-of-school care providers to become approved providers for the purposes of funding grants and the OSCAR Subsidy:
  - OSCAR Standards for Approval were to be reviewed to allow home-based and small-scale providers to enter the market
  - OSCAR grant funding was to be targeted to encourage provision in the areas where it was most needed
- income thresholds for receiving OSCAR and Childcare Subsidies were reduced to levels in place in April 2008, prior to the most recent CPI (consumer price index) adjustment, and provision for indexation of these thresholds was removed<sup>20</sup> in order to fund some of the additional costs associated with the package
- a new model for hardship assistance, with:
  - streamlined administration to focus case management on those beneficiaries who were high users
  - greater support with budgeting for repeat applicants
  - restrictions on access to assistance for those who could not show they were working on budgeting skills and trying to improve their situations.

<sup>19</sup> Ministry of Social Development (2011). *The Impact of Proactive Engagement to Apply Future Focus DPB-SP Work Obligations, June 2011 Interim Report (Internal, unpublished Draft – A5447056)*. Wellington, New Zealand. Centre for Social Research and Evaluation, Ministry of Social Development.

<sup>20</sup> This reduced the gross weekly income level from which childcare assistance ceased to be payable from \$1,486 to \$1,400 for clients with one child, from \$1,698 to \$1,600 for clients with two children, and from \$1,910 to \$1,800 for clients with three or more children. Thresholds were grandfathered at their earlier levels for clients who had received assistance in the 12 months prior to 27 September 2010.

## Summary of policy settings before and after Future Focus

Table 1 summarises the policy and administrative settings for DPB-SP clients before and after Future Focus.

Table 1: Selected policy and administration settings before and after Future Focus		
	Before 27 September 2010	After 27 September 2010
<b>Work obligations</b>	None	Youngest child 0–5: none Youngest child 6+: part-time (averaging 15 hours or more per week)
<b>Planning and activity obligations</b>	Personal Development and Employment Plans at case manager discretion: <ul style="list-style-type: none"> <li>Undertake planning</li> <li>Undertake a work-related activity or programme in the plan</li> <li>Undertake any activity or rehabilitation (with exceptions) considered suitable for the person to improve their prospects for employment</li> </ul>	Youngest child 0–5 and youngest child 6+ exempt from work obligations – Employment Plan at case manager discretion: <ul style="list-style-type: none"> <li>Undertake planning</li> <li>Undertake a work-related activity or programme in the plan</li> <li>Undertake any activity or rehabilitation (with exceptions) considered suitable for the person to improve their prospects for employment</li> </ul>
<b>Sanctions for non-compliance</b>	Graduated sanctions that include cancellation of benefit with full backdated reinstatement upon re-compliance (rarely applied because very few plans in place)	50% reduction in benefit until re-comply Process streamlined
<b>Sanctions for voluntary unemployment</b>	None	Youngest child 6+: 50% reduction in benefit for up to 13 weeks or until participate in re-compliance activity
<b>Benefit abatement</b>	\$0–80 per week: no abatement \$81–180 per week: 30% abatement \$181+ per week: 70% abatement Benefit fully abated at \$535 per week gross	\$0–100 per week: no abatement \$101–200 per week: 30% abatement \$201+ per week: 70% abatement Benefit fully abated at \$555 per week gross
<b>In-work financial assistance</b>	Working for Families in-work tax credit for sole parents who work 20+ hours per week: <ul style="list-style-type: none"> <li>Minimum family tax credit topped up net earnings to \$408 per week</li> <li>In-work tax credit of \$60 per week (1–3 children, an additional \$15 for each additional child)</li> </ul>	
<b>Childcare assistance</b>	Children aged 0–5: Childcare Subsidy Children aged 6+: OSCAR Subsidy No entitlement beyond \$1,486 per week gross income for clients with one child	Children aged 0–5: Childcare Subsidy Children aged 6+: OSCAR Subsidy No entitlement beyond \$1,400 per week gross income for clients with one child
<b>Assistance with training</b>	Training Incentive Allowance of up to \$3,938 per year for study up to Level 3 Student loans for fees and course-related costs	Training Incentive Allowance of up to \$3,938 per year for study up to Level 3 Student loans for fees and course-related costs Loan of \$500 per year from the 2011 academic year to support study at Level 4 or above

## Expected impacts of work obligations

It was expected that the introduction of work obligations would be the aspect of the Future Focus reform that had the greatest effect on employment and benefit receipt for DPB-SP clients. There were several ways in which work obligations were expected to influence the behaviour of affected sole parents and their families:

- Increased job search effort leading to increased employment:** the explicit intention of the policy was to encourage those clients on DPB-SP to increase their efforts to look for either part- or full-time employment. As a consequence, increased earnings from work or higher exits from benefit for these clients were expected following the introduction of Future Focus.



An evaluation of the introduction of work obligations for DPB-SP clients between 1999 and 2003 found that it lowered benefit receipt among affected clients and contributed to increased full-time employment among sole parents.<sup>21</sup>

Overseas evidence also indicates that, on average, work obligations result in modest increases in employment and earnings, and modest reductions in benefit payments for sole parents.<sup>22</sup>

- **Reduction in inflow to DPB:** it was also expected that the introduction of work obligations will influence the decisions of people to apply for DPB. They would either seek alternative support through family or friends, or choose to remain in relationships.
- **Movement to non-work benefits:** increased work obligations may prompt people to transfer to benefits with lower work obligations (such as Invalid's Benefit). However, for sole parents there are financial costs in transferring to other benefits. Another response might be to have additional children and thereby delay work obligations by having a child under five. This option is limited following the changes to the treatment of subsequent children on benefit from October 2012 under the new Welfare Reforms. Under the reforms, the birth of any subsequent child would lead to the suspension of work obligations until the child was one year old, after which work obligations would be based on the next oldest child.
- **Child welfare:** increased employment among sole parents can affect children in several ways. The first is through potentially higher family incomes resulting in lower levels of poverty. In addition, by working, sole parents can set positive role models for their children. On the other hand, increased employment can mean less time with children, with younger children placed in after school care, while for older children a lack of supervision has been identified as a problem in evaluations of similar programmes.<sup>23</sup>

In the current analysis we focus on the first of these outcomes by looking at whether work obligations reduce the time clients take to exit benefit, and whether obligations change how long clients remain off main benefit. Based on these two indicators we can estimate whether work obligations reduce the overall time clients spend on benefit. What we will not know is whether work obligations will alter the time clients are in employment once they are off main benefit.

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<sup>21</sup> Ministry of Social Development. (2007). *The 2002 Domestic Purposes and Widow's Benefit reform: Evaluation report*. Wellington, New Zealand.

<sup>22</sup> See: Greenberg, D., Cebulla, A., and Bouchet, S. (2005). *Report on a Meta-Analysis of Welfare-to-Work Programs*. Institute for Research on Poverty, Discussion Paper No. 1312-05; Grogger, J., and Karoly, L. A. (2005). *Welfare Reform: Effects of a Decade of Change*. Cambridge MA: Harvard University Press; Gorey, K. M. (2009). Welfare-to-work programs in America, 1980 to 2005: Meta-analytic evidence of the importance of job and child care availability. *Journal of Policy Practice*, 8, 265–281; Hamilton, G. (2002). *Moving People from Welfare to Work: Lessons from the National Evaluation of Welfare to Work Strategies*. Washington D.C.: US Department of Health and Human Services and US Department of Education; and Mogstad, M. and Pronzato, C. (2009). Are lone mothers responsive to policy changes? Evidence from a workfare reform in a generous welfare state, *IZA Discussion Paper No. 4489*.

<sup>23</sup> Department of Labour and Ministry of Social Development (2002). *Evaluating the February 1999 Domestic Purposes Benefit and Widows Benefit Reforms: Summary of Key Findings*, Wellington, New Zealand.



# Evaluation approach

This evaluation estimates the impact of the Future Focus work obligations on clients receiving DPB-SP whose youngest children are aged six years or older. The analysis looks at the amount of time affected clients spend on benefit.

This data analysis is based on longitudinal data from the Ministry of Social Development Information Analysis Platform, which allow us to look at a client's individual benefit history.

The evaluation seeks to answer the question 'How would a client's benefit status have changed if work obligations did not exist?' This counterfactual analysis compares what actually happened under Future Focus with what would have happened in the absence of work obligations. We use a duration (or survival) model to estimate the probability that a client would exit and re-enter a benefit.

Benefit exit and re-entry hazard rates are estimated and used to calculate the distribution of time that DPB-SP clients were likely to spend on benefit in a period of approximately four years (spanning two years before the policy implementation and 27 months after implementation). In our model work obligations are treated as a 'dummy intervention', which enables us to simulate the total impact of work obligations on clients' durations on main benefit.<sup>24</sup>

## The approach

The approach used to estimate the impact of work obligations involved:

- selection of the study population
- creation of data for survival analysis
- definition of the relationship between benefit exit/re-entry, the work obligations, time, economic conditions and all other information around individual clients
- measurement of the probability of each outcome and the simulation of these outcomes for multiple exit and re-entry benefit spells
- simulation of the total time on main benefit
- assignment of costs based on monthly payments of main benefit multiplied by the total reduction in clients' duration on benefit to estimate the impact of the work obligations on benefit expenditure.

## Key assumptions

All evaluation methods are based on a number of assumptions. The important ones to be aware of in this study are outlined below.

### Omitted variable bias

A key assumption in the approach is that it accounts for all variables that should be in the model. Of course we cannot be sure of this. The danger is that important variables associated with benefit duration outcomes are not included in the model. The effect of such omitted variables is to bias the estimates of the parameters for the variables in the model (ie our parameter estimates for the model variables do not reflect their true influence on benefit outcomes).

We have undertaken an environmental scan and concluded that there were no other changes occurring in tandem with affected clients' children's sixth birthdays that could account for the impacts

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<sup>24</sup> Income support is divided into three levels: main benefit, supplementary, and ad hoc assistance.

observed. We have also taken care to reduce the risk of omitted variable bias more generally by including variables in the model to try to control for all theorised influences on benefit duration.

### No selection bias

Duration modelling is usually applied to policies and programmes in which clients have little or no control over their participation. In other words, people cannot easily select themselves out of the programme or policy. If clients are able to select whether they participate or not, it may mean that estimates of programme and policy impacts reflect these selection effects rather than the policy effects.

For this evaluation we do not expect any selection bias, since the clients who were subject to work obligations could not opt out of these other than through transferring to benefits other than DPB-SP. This response has not been included in the outcomes for this analysis, meaning that clients who transferred to other benefits are not allocated the status of 'exiting benefit', so the transfers do not influence the evaluation results.

## Data sources and variables

The analysis uses several sources of information, primarily data from the Ministry of Social Development's administrative systems housed on the Ministry's Information Analysis Platform. The main information source used from the Information Analysis Platform was the Benefit Dynamics Dataset (BDD), which is described in further detail below. We also included HLFS and other labour market information where necessary.

### Benefit Dynamics Dataset

The analysis is centred on the Benefit Dynamics Dataset (BDD), a longitudinal dataset assembled from historical benefit administration data. The BDD can be used to create individual benefit histories for each adult or child included on a main benefit from 1993 onwards. The BDD has a number of strengths, including:

- *a relatively long study period*: at the time of writing the BDD let us view and analyse 18 years of benefit history at the individual level
- *no sampling error, or response or attrition bias*: the dataset contains information on all benefit recipients, not a sample, so sampling error, response bias and bias resulting from attrition are not issues for this analysis
- *continuous longitudinal data*: the continuous nature of the dataset means we are not limited to monthly or quarterly snapshots of benefit status, which means we are able to observe benefit spells of relatively short durations. This makes our calculations of total time spent on benefit very precise, which means we can link the timing of events during a benefit spell to the hazard rate.

## The study population

For this analysis, the study population was all sole parents in receipt of DPB-SP from 1 October 2008.

As a first step, exploratory data analysis was carried out to identify if there had been any changes in benefit duration in the study population before and after the introduction of work obligations. This analysis confirmed that there had been a decrease in the survival of clients entering DPB-SP after October 2010 (when work obligations were introduced). The impact analysis covered in this report seeks to explore and confirm whether this can be attributed to the Future Focus work obligations.



## Selecting the analysis sample

From within the study population, we identified all sole parent clients who were already receiving DPB-SP in October 2008 or who started a DPB-SP spell after October 2008. We selected a 14 percent random sample from the population (30,000 clients). Continuous spells lasting longer than 15 years were censored.<sup>25</sup>

The sampling involved two steps. Step one was to randomly select one qualifying spell for each client. In doing so, we ensured each client was represented only once in each model. Step two involved sampling a fixed percentage of spell starts for each calendar month to ensure the sample was representative of clients in the analysis period.

## Creating a client-interval dataset

For each spell, we created a 'client-interval dataset'. To do this we divided each spell into evenly spaced intervals of 30 days. Each interval could have one of three statuses:

- *No exit*: the spell did not end within the interval and the interval end date is less than the censor date (if the spell is censored).
- *Exit*: the spell ended during the interval and the interval end date is less than the censor date.
- *Censored*: the spell end date is greater than the censor date. These clients were not included in the analysis.

Censoring occurred either because a spell was current to the end of the analysis period (December 2012) or the spell duration exceeded 15 years.

Time-varying client characteristics were calculated at the interval start date.

## Definition of spell start and end

In our analysis, the definitions of 'on-benefit' and 'off-benefit' spells were defined as follows.

- *On-benefit spell*: the start of the qualifying spell is the date the client became a sole parent on main benefit (ie was granted DPB-SP). The on-benefit spell ends when the client exits any main benefit for more than 7 days. Note that while clients qualify by being on benefit as sole parents, exits only occur when they leave main benefit completely. Therefore, transfers to other benefits, including New Zealand Superannuation, are not counted as exits in this analysis.
- *Off-benefit spell*: the off-benefit spell commences when a client achieves an exit from their on-benefit spell (as defined above). Their off-benefit spell ends when they return to any main benefit, including New Zealand Superannuation.

## Defining interval duration

The selection of the duration of the interval in the analysis is a trade-off between identifying detailed events and computational resources (primarily to calculate type 3 effects and to run the simulations to calculate confidence intervals). We selected 30 days as the duration of each interval in the model.

## Final structure of the client-interval dataset

Based on the above discussion, the client-interval dataset has the following variables:

- *Sole parents benefit spell start*: the date the client commenced a qualifying benefit spell.
- *Main benefit end date*: the date the main benefit spell ended – because we were evaluating the impact on clients' real benefit duration, we were interested in the time taken to exit benefit entirely,

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<sup>25</sup> By setting a 15-year limit on the follow-up window, we excluded very long-term Domestic Purposes Benefit clients from the analysis. However, this represented a very small proportion of all DPB-SP clients affected by the work obligations.

so clients who transferred from DPB-SP to benefits, including New Zealand Superannuation, were not treated as exits from benefit

- *Off-benefit return date*: if a client exited main benefit, this is the date they returned to main benefit, if it all.

## Explanatory variables

The client-interval dataset contains information on: demographic, educational and family characteristics; declared earnings; previous benefit status; seasonal business cycle; policy and programme interventions such as the work obligations; and labour market variables. Table 2 outlines the final explanatory variables included in the duration model.

**Table 2:** Explanatory variables included in the duration model

Baseline hazard	
Interval	
Benefit anniversary	
Individual characteristics	
Age group	30–<40 years 40–<60 years Over 60
<i>Reference</i>	Under 20 years
Ethnicity	20–<30 years Māori Other Pacific Island
<i>Reference</i>	<i>NZ European or Unspecified</i>
Education level	B: NQF 1: <80 credit C: NQF 1: 80+ credit D: NQF 2: 80+ credit E: NQF 3: 80+ credit F: NQF 4: 72+ credit G: Degree Profession
<i>Reference</i>	<i>Unspecified or No qualifications</i>
Training Incentive Allowance study	Yes/No
Age of youngest child	
Employment status	
Weekly earnings	2. Income \$100–200 3. Income \$200+
<i>Reference</i>	<i>No income or income \$0–100</i>
Benefit status	
Previous benefit duration	<3 months >3–6 months >6 months–1 year >1–2 years >2–3 years >3–4 years
<i>Reference</i>	<i>Over 4 years or Unspecified</i>
Current benefit status	New entrants
<i>Reference</i>	<i>Stock</i>
Seasonal business cycle	
Season	Sep-Dec
<i>Reference</i>	<i>Other month</i>
Labour market	
Regional unemployment rate	
Intervention	
Part-time work obligations	Oct 2010–Sep 2011 Oct 2011–Dec 2012
<i>Reference</i>	<i>Oct 2008–Sep 2010</i>

## Modelling duration on and off benefit

To estimate the impact of work obligations on the overall time clients spent on benefit, the analysis:

- first assessed whether the policy reduced the time it took for clients to exit benefit
- then examined whether the work obligations changed the length of time clients remained off benefit.

We used duration (survival) analysis to answer both these questions.

Duration (or survival) analysis is a method of analysing the time taken for an event of interest to occur (eg exit from benefit). Duration analysis helps us understand how the variations among individuals in the time taken for an event to occur are related to possible explanatory factors (eg characteristics of the individuals). This study extended the approach taken by Dalgety, Dorsett, Johnston, & Spier (2010)<sup>26</sup> in evaluating the impact of Working for Families on sole parents in receipt of DPB.

A multivariate approach was used to estimate benefit duration. Specifically, we examined clients' exits from main benefit and also re-entry to main benefit following exit. This approach more accurately reflected clients' actual situations and also increased understanding of the factors influencing benefit duration. A discrete-time hazard framework accounted for spells on and off benefit, and the framework was used to derive estimates of total time spent on benefit.

### Definition of the hazard function

For each individual  $i$  at interval  $t$  we have a status  $y_{it}$  0 or 1 for whether the individual ended their spell in the interval.

The hazard function ( $h_{it}$ ) for an individual at each interval is:

$$h_{it} = \Pr(y_{it} = 1 \mid y_{ik} = 0, \text{ for all } k \in \{1, \dots, t-1\}) \text{ (equation 1)}$$

That is the probability an individual will end their spell at interval  $t$  given their spell has lasted for  $t-1$  intervals. Related to the hazard function is the survival function  $S_{it}$ , which is the probability that the individual  $i$  was still on benefit at the end of interval  $t$ .

$$S_{it} = \Pr(y_{ik} = 0, \text{ for all } k \in \{1, \dots, t\}) \text{ (equation 2)}$$

The survival function is the product of terms involving the hazard.

In our model, the hazard function is assumed to relate to the explanatory variables through a logit transformation:

$$\log\left(\frac{h_{it}}{1-h_{it}}\right) = \alpha(t) + \beta'X_{it} \text{ (equation 3)}$$

where  $\alpha(t)$  is the baseline hazard and  $X_{it}$  is a vector of covariates representing the values for an individual  $i$  at interval  $t$ . The variables for  $X_{it}$  are summarised below in the section on explanatory variables.

As the previous equation shows, each model has two parts: the baseline hazard, and fixed and time varying individual characteristics. The baseline hazard characterises the overall pattern of exits over spell durations. Individual characteristics, on the other hand, identify how an individual's probability of ending a spell varies according to their fixed characteristics (eg age or education) as well as those that vary over time (eg labour market demand or policy changes).

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<sup>26</sup> Dalgety, J., Dorsett, R., Johnston, S. and Spier, P. (2010). *Employment Incentives for Sole Parents: Labour market effects of changes to financial incentives and support. Technical report.* Ministry of Social Development and Inland Revenue. Wellington, New Zealand.

## Estimation of model parameters

The parameters of the discrete-time hazard model in equation 3 can be estimated using standard logistic regression procedures, after restructuring the data so there is one record for each time period that each client is at risk of experiencing the event of interest (ie constructing a ‘client-interval dataset’).

Parameter estimates from fitting the hazard model for exit from benefit are presented in Table 3. Compared with each reference group, positive coefficients in Table 3 imply that the explanatory variable increases the probability of exit from benefit, while negative coefficients imply a decrease in the probability of exit.

In general, the magnitude of the coefficient reflects the size of the effect of the explanatory variable on the probability of exit, relative to the effect of the other variables in the model. This is because almost all of the explanatory variables were binary variables, taking the values 1 or 0 to indicate the presence or absence of some characteristic. The exceptions were the two numeric variables: age of youngest and regional unemployment rate.

Consider a categorical predictor that is included in the hazard model via a set of dummy variables – one dummy variable for each category except a ‘reference category’. Then the parameter estimate for the dummy variable representing a particular category is the log (natural logarithm) of the estimated odds ratio for exiting benefit for a person in that category compared to a person in the reference category, controlling for the other explanatory variables in the model.

For each variable, we have converted the beta estimate into an odds ratio. The odds ratio is designed to show the change in probability of an event, in hazard exit benefit spell. A value above 1 indicates an increase in the probability, and below 1 a decrease in the probability. For categorical variables such as previous benefit duration, the odds ratio is relative to the reference group (these have an odds ratio of 1.00 in the tables). For continuous variables, we divided the beta estimate by two times the standard deviation of the variable to enable comparisons of the relative importance of categorical and continuous variables. Interpreting precisely what the numeric values of the parameter estimates in Table 3 mean is not so straightforward, but will be more accessible to readers with some experience of logistic regression models.

## Hazard model for exit from benefit

**Table 3:** Hazard model for exit from benefit

Explanatory variable		Parameter estimate	Estimate odds	Estimate PValue	StdErr
Intercept		-6.6647	0.0013	0.0000	0.1805
Baseline hazard					
Interval	Month 01 of spell	1.9159	6.7930	0.0000	0.1012
	Month 02 of spell	2.2992	9.9660	0.0000	0.0925
	Month 03 of spell	2.2072	9.0904	0.0000	0.0958
	Month 04–06	2.0702	7.9262	0.0000	0.0787
	Month 07–13	1.8569	6.4041	0.0000	0.0762
	Month 14–25	1.4166	4.1230	0.0000	0.0746
	Month 26–39	1.1129	3.0431	0.0000	0.0791
	Month 40–47	0.9165	2.5006	0.0000	0.0931
	Month 48–58	0.7467	2.1101	0.0000	0.0979
	Month 59–61	1.0285	2.7968	0.0000	0.1571
	Month 62–72	0.7336	2.0826	0.0000	0.0994
	Month 73–84	0.6124	1.8448	0.0000	0.0942
	Month 85–96	0.4335	1.5426	0.0000	0.1042
	Month 97–104	0.2927	1.3400	0.0275	0.1328
	Month 105–110	0.6270	1.8721	0.0000	0.1275
	Month 111–122	0.4320	1.5404	0.0001	0.1125

<i>Reference</i>	<i>Month 123 +</i>	<i>0.0000</i>	<i>1.0000</i>		<i>0.0000</i>
Explanatory variable		Parameter estimate	Estimate odds	Estimate PValue	StdErr
Anniversary	Anniversary1	0.4646	1.5914	0.0000	0.0877
	Anniversary1 next month	-0.2535	0.7761	0.0313	0.1177
	Anniversary2	0.4014	1.4938	0.0005	0.1161
	Anniversary3	0.4241	1.5282	0.0035	0.1450
	Anniversary3 next month	0.3678	1.4446	0.0142	0.1499
	Anniversary4	0.7442	2.1047	0.0000	0.1693
	Anniversary4 next month	0.3599	1.4332	0.0713	0.1995
	Anniversary5 next month	0.2060	1.2287	0.3850	0.2371
	Anniversary6	0.5508	1.7346	0.0069	0.2038
	Anniversary7 next month	0.7930	2.2099	0.0001	0.2064
	Anniversary8 next month	0.8612	2.3661	0.0002	0.2347
Anniversary10 next month	0.5870	1.7986	0.0258	0.2634	
<i>Reference</i>	<i>None</i>	<i>0.0000</i>	<i>1.0000</i>		<i>0.0000</i>
Age group	30–<40 years	-0.2789	0.7566	0.0000	0.0435
	40–<60 years	-0.4088	0.6645	0.0000	0.0488
	Over 60	-0.7812	0.4578	0.0165	0.3257
	Under 20 years	0.1908	1.2102	0.0659	0.1037
<i>Reference</i>	<i>20–&lt;30 years</i>	<i>0.0000</i>	<i>1.0000</i>		<i>0.0000</i>
Ethnicity	Māori	-0.0470	0.9541	0.1679	0.0341
	Other	-0.1534	0.8578	0.0012	0.0473
	Pacific Island	-0.1081	0.8975	0.0652	0.0586
<i>Reference</i>	<i>NZ European or Unspecified</i>	<i>0.0000</i>	<i>1.0000</i>		<i>0.0000</i>
Education level	B: NQF 1: <80 credit	0.0609	1.0628	0.1433	0.0416
	C: NQF 1: 80+ credit	0.1694	1.1846	0.0007	0.0497
	D: NQF 2: 80+ credit	0.2113	1.2353	0.0002	0.0569
	E: NQF 3: 80+ credit	0.2343	1.2640	0.0002	0.0637
	F: NQF 4: 72+ credit	0.3497	1.4187	0.0000	0.0751
	G: Degree profession	0.3663	1.4424	0.0000	0.0757
	<i>Reference</i>	<i>Unspecified or no qualifications</i>	<i>0.0000</i>	<i>1.0000</i>	
<b>Individual characteristics</b>					
Training Incentive Allowance study	No	0.7624	2.1433	0.0000	0.1360
	Yes	0.0000	1.0000		0.0000
Family status					
Age of youngest child		0.0808	1.0842	0.0000	0.0058
<b>Employment status</b>					
Weekly earnings	2. Income \$100–200	0.1057	1.1115	0.0553	0.0551
	3. Income \$200+	0.8439	2.3254	0.0000	0.0379
	<i>Reference</i>	<i>No income or Income \$0–100</i>	<i>0.0000</i>	<i>1.0000</i>	
<b>Benefit status</b>					
Previous benefit duration	<3 months	0.3748	1.4547	0.0000	0.0508
	>3–6 months	0.3850	1.4696	0.0000	0.0557
	>6 months–1 yrs.	0.3567	1.4287	0.0000	0.0547
	>1–2 years	0.3238	1.3823	0.0000	0.0561
	>2–3 years	0.2168	1.2420	0.0017	0.0690
	>3–4 years	0.1593	1.1727	0.0431	0.0788
<i>Reference</i>	<i>Over 4 years or Unspecified</i>	<i>0.0000</i>	<i>1.0000</i>		<i>0.0000</i>
Current benefit status	New entrants	0.3736	1.4530	0.0000	0.0587

<i>Reference</i>	<i>Stock</i>	<i>0.0000</i>	<i>1.0000</i>		<i>0.0000</i>
Explanatory variable		Parameter estimate	Estimate odds	Estimate PValue	StdErr
Seasonal business cycle					
Season	Sep-Dec	-0.1454	0.8647	0.0000	0.0311
<i>Reference</i>	<i>Other month</i>	<i>0.0000</i>	<i>1.0000</i>		<i>0.0000</i>
Labour market					
Regional unemployment rate		-3.7958	0.0225	0.0003	1.0425
Intervention: Work obligations					
Part-time youngest 6-13	Oct 2010–Sep 2011	0.0440	1.0449	0.3030	0.0427
	Oct 2011–Dec 2012	0.1644	1.1786	0.0000	0.0392
Part-time youngest 14+	Oct 2010–Sep 2012	0.1760	1.1925	0.0004	0.0494
Full-time youngest 14+ <sup>27</sup>	Oct 2012–Dec 2012	0.0330	1.0335	0.7645	0.1101
<i>Reference</i>	<i>Oct 2008–Sep 2010</i>	<i>0.0000</i>	<i>1.0000</i>		<i>0.0000</i>

Source: Information Analysis Platform (BDD), CSRE, MSD (research data not official MSD statistics).

Overall, the work obligations had a positive impact on the main benefit exit rate. There was some demonstrated interaction between the age of a client's youngest child and the impact of the work obligations. For clients with youngest children aged 14 or over, the new obligations appeared to have had an immediate impact, whereas the parameter estimates associated with the obligations for clients with youngest children aged six to 13 became more significant in the second year of their introduction. A client's likelihood of exiting benefit increased as their youngest child aged.

Other main findings include the following:

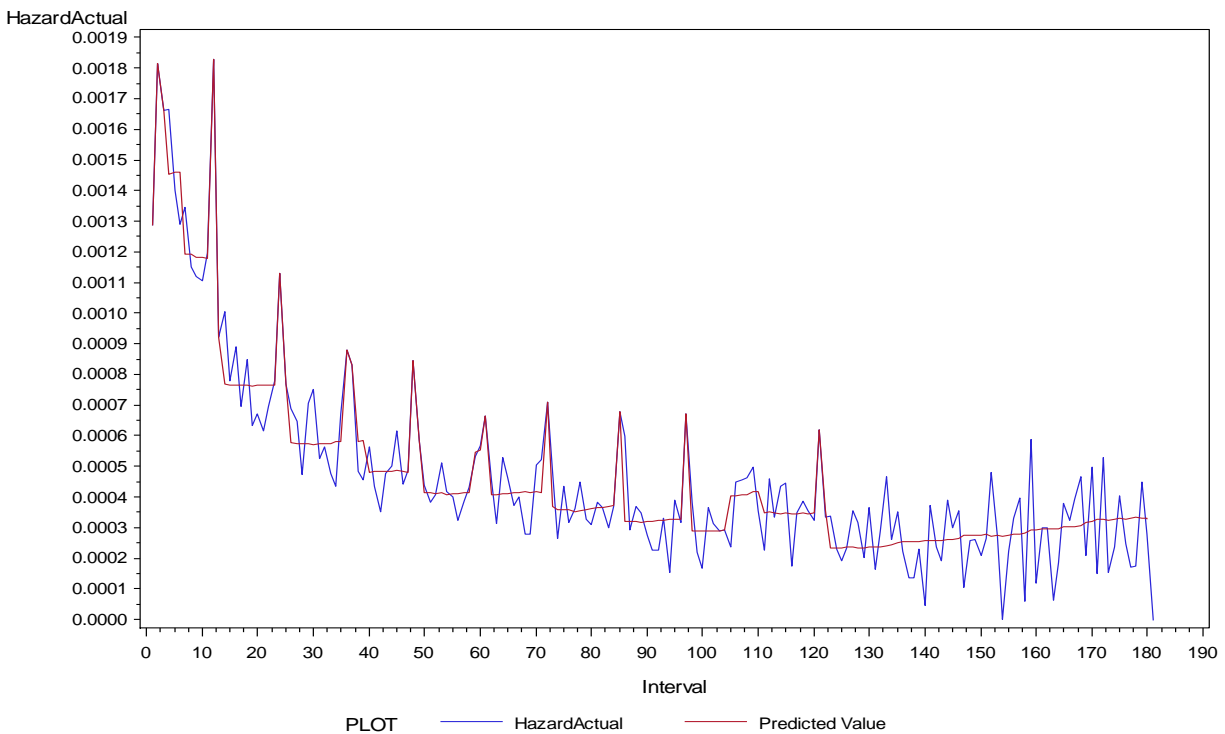
- The parameter estimate for the regional unemployment rate was negative and statistically significant in the overall trend, indicating that the probability of benefit exit was lower when the economy was poor.
- In general, the likelihood of exiting benefit decreased with age. The exit benefit rate for the age group 'Under 20' was 1.2 times higher than that for the reference age group of '20–<30 years'. In contrast, the benefit exit rate for clients in the age group '30–<40 years' was about 24 percent lower than that for the reference age group.
- New Zealand European clients were more likely to exit benefit compared to clients of Māori, Pacific Island and 'Other' ethnicity.
- The likelihood of exiting benefit increased with education level, especially those with tertiary qualifications or above.
- Clients currently receiving Training Incentive Allowance had a lower likelihood of exiting benefit compared with clients who were not receiving this assistance.
- A client's level of part-time earnings had a direct association with their likelihood of exiting benefit. The exit rate for clients with part-time earnings of \$200 or over was 2.3 times that of those who declared their earnings as less than \$100.
- Benefit exits were more likely to occur during the first nine months of the calendar year, and less likely to occur in the three months leading up to Christmas.
- In most instances, longer periods of time previously spent on main benefit tended to be associated with a lower likelihood of exiting benefit. New entrants to benefit were more likely to exit benefit than those who had previous benefit spells.

<sup>27</sup> Under Welfare Reform, DPB-SP clients with a youngest child aged over 14 years had full-time work obligations from 15 October 2012.

- The parameters of the baseline hazard showed how the probability of exit changed with the length of time spent on benefit. Exits were more likely to occur towards the start of a benefit spell – the probability was highest in months 2 and 3 – but became progressively less likely the longer a sole parent remained on benefit.
- An increase in the probability of exit around the time of the DPB-SP annual review was also clear from the parameters for the anniversary dummy variables.

Figures 3 and 4 show the overall benefit exit hazard, and survival curves for time until benefit exit. They reflect the original model for each client’s individual benefit duration from spell start to end of report period. The probability of exiting or remaining on benefit is calculated according to the individual’s actual duration rather than calendar month. The durations vary from one month for the shortest to 15 years or over for the longest.

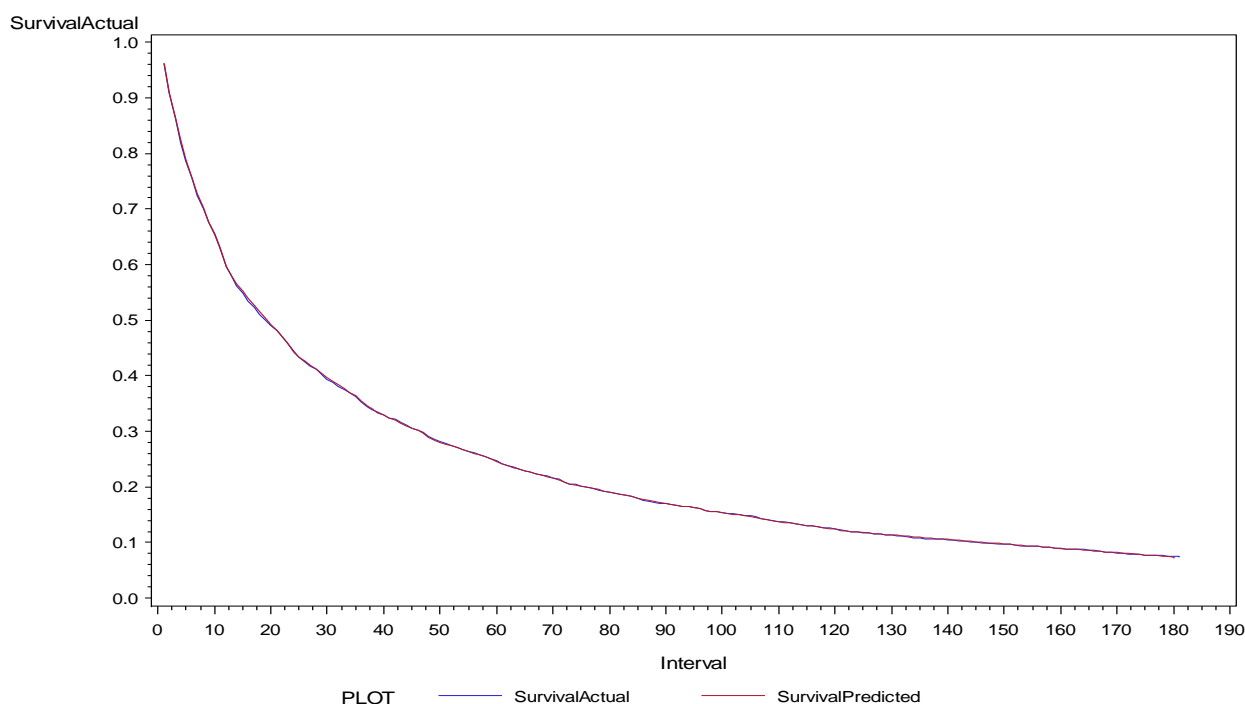
**Figure 3:** Actual and projected average hazard rate for exit from benefit



Source: Information Analysis Platform (BDD), CSRE, MSD (research data not official MSD statistics).



**Figure 4:** Actual and projected survival curves for time until benefit exit



Source: Information Analysis Platform (BDD), CSRE, MSD (research data not official MSD statistics).

### Hazard model for re-entry to benefit

The analysis above does not show the full impact of the work obligations on client benefit duration as some clients re-entered benefit after exit. In order to assess the full impact of the obligations on benefit duration more accurately, the evaluation also modelled the likelihood that clients would return to main benefit after exit.

Parameter estimates from fitting the hazard model for re-entries to benefit are presented in Table 4. The interpretation of the parameters below is similar to that in Table 3: positive coefficients imply the explanatory variable increased the probability of returning to benefit, while negative coefficients imply a decrease in the probability of re-entry.

**Table 4:** Hazard model for re entry to benefit

Explanatory variable		Parameter estimate	Estimate odds	Estimate PValue	StdErr
Intercept		-6.781064545	0.001135066	7.10E-20	0.743033799
<b>Baseline hazard</b>					
Interval	month 01	3.110785807	22.43866994	1.26723E-05	0.712553396
	month 02	3.194975642	24.40957912	7.32E-06	0.712492586
	month 03	3.069783201	21.53723291	0.00001684	0.713383439
	month 04	2.776873661	16.06870611	0.000104054	0.715515783
	month 05	2.513303755	12.34564977	0.000465167	0.718076031
	month 06	2.368041895	10.67646616	0.001006569	0.720057575
	month 07	2.402384699	11.04949471	0.000848684	0.720051135
	month 08	2.33549709	10.33459588	0.001205541	0.721374399
	month 09	2.374001263	10.74028111	0.000998256	0.721357792
	month 10–11	2.248493759	9.473455772	0.001687812	0.716014878
	month 12–16	1.835021125	6.265266494	0.010121363	0.713556433
	month 17–21	1.664325889	5.28211132	0.020118284	0.716105655
	month 22–27	1.418163171	4.129528234	0.048535562	0.718913069
	month 28–37	1.161751576	3.195525582	0.106963632	0.72069304



Explanatory variable		Parameter estimate	Estimate odds	Estimate PValue	StdErr
	month 38–45	0.991434235	2.695097103	0.182815653	0.744244263
<i>Reference</i>	<i>month 46 +</i>	0	1		0
<b>Individual characteristics</b>					
Ethnicity	Māori	0.282455421	1.326382645	1.30E-06	0.058365859
	Unspecified	-1.19152738	0.303756957	0.003827791	0.412005883
<i>Reference</i>	<i>NZ European/Other/Pacific</i>	0	1		0
Age of youngest child		-0.036632428	0.964030421	1.32E-06	0.007574609
<b>Employment status</b>					
Weekly earnings	1. Income \$0–100	-0.2499243	0.77885974	0.038531871	0.120785887
	3. Income \$200+	-0.232711789	0.792381914	0.003816413	0.080440981
<i>Reference</i>	<i>No income or Income \$100–200</i>	0	1		0
<b>Benefit status</b>					
Current benefit status	New entrants	-0.456686404	0.633378934	1.20913E-05	0.104363179
<i>Reference</i>	<i>Stock</i>	0	1		0
<b>Seasonal business cycle</b>					
Season	Sep-Dec	0.191057281	1.21052879	0.001235343	0.059140027
<i>Reference</i>	<i>Other month</i>	0	1		0
<b>Labour market</b>					
Unemployment rate		7.142390213	1264.447078	0.017411742	3.003659783

Source: Information Analysis Platform (BDD), CSRE, MSD (research data not official MSD statistics).

The parameters for the baseline hazard show that re-entry to benefit was most likely to occur immediately after leaving benefit, but became progressively less likely the longer a sole parent remained off benefit.

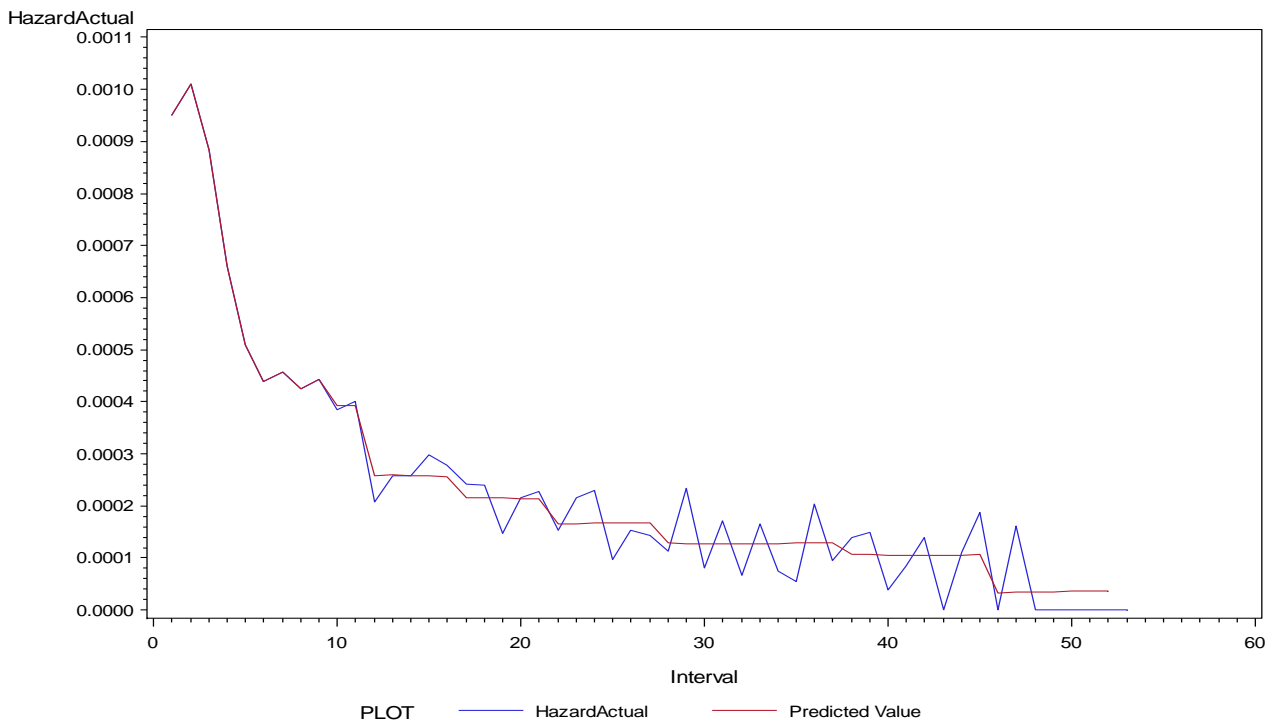
Compared with the hazard model for benefit exit, the re-entry model has fewer significant variables relevant to the final estimation. Some of the key variables influencing the probability of re-entry to benefit are the same as those for the benefit exit model, but with the effect working in the opposite direction:

- Māori are more likely to re-enter main benefit than all other ethnicities.
- Clients with no part-time earnings or earnings of \$100–200 were more likely to re-enter benefit than those earning over \$200.
- Clients were less likely to return to main benefit as their youngest children aged.
- New entrants to benefit were less likely to re-enter main benefit than clients who had previous benefit histories.
- Return to benefit was more likely to occur during the pre-Christmas season.
- Poor economic conditions made it more likely clients would return to benefit.

Overall, the work obligations had no effect on the re-entry rate of clients after exiting main benefit. However, a constant rate of re-entry to main benefit means the overall impact of the work obligations is offset in the short term.

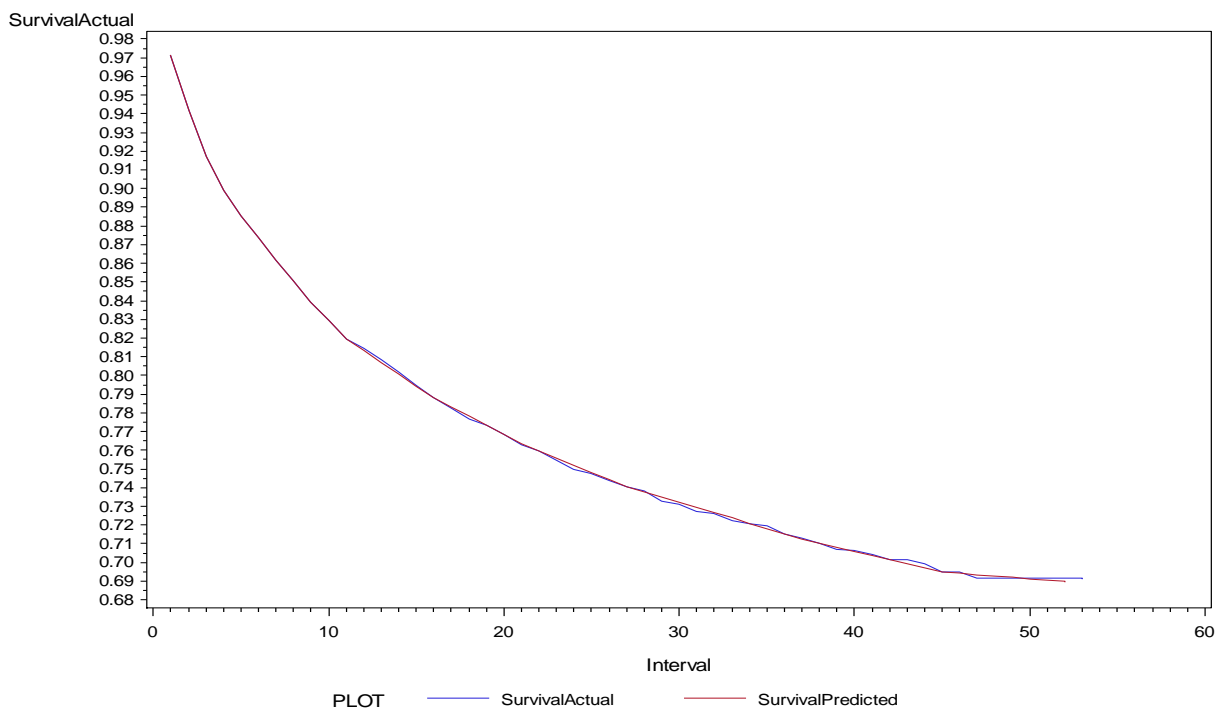
Figures 5 and 6 show the overall benefit re-entry hazard and survival curves for clients.

**Figure 5:** Actual and projected average hazard rate for re entry to main benefit after exit



Source: Information Analysis Platform (BDD), CSRE, MSD (research data not official MSD statistics).

**Figure 6:** Actual and projected survival curves for time until benefit re entry



Source: Information Analysis Platform (BDD), CSRE, MSD (research data not official MSD statistics).

## Simulation of the impact of the work obligations on duration (days) on benefit

Although the signs of estimated coefficients are interpretable, the actual magnitude of the effects they represent is not easily understandable on that analysis alone.

We structured our analysis of the impact of the work obligations to answer the question: 'How would the benefit status have changed if the work obligations had not been undertaken?' Our aim was to be able to report on the overall reduction in the time clients spent on benefit as a result of the work obligations. Presenting results in this form allows us to calculate useful metrics such as the reduction in income support expenditure and, ultimately, to estimate the net cost-benefit of the intervention.

The approach involved two linked steps:

- We calculated the impact of the work obligations for each of the duration models separately. Impact was estimated by using the model estimates for the expected duration of participants for each outcome and comparing this to their expected duration if they had not been subject to the work obligations. These results are shown in Figure 5 and Figure 6.
- We used the duration model to estimate time on main benefit and off benefit together, to obtain an estimate of the total time clients were on benefit. By combining the two models, we could account for the impact of the policy on the period clients stayed on benefit as well as on how quickly they returned to benefit. This step is outlined in more detail below.

### Impact on participants rather than on 'average clients'

A common approach in estimating the impact of a policy using duration models is to apply the model beta estimates to a profile of an 'average' client. The predicted probabilities are calculated holding all the other explanatory variables in the model constant at their average values (taken across all spells on benefit and all individuals in the sample), so that the predictions are for a hypothetical average client on benefit. Dalgety et al (2010) took this approach in estimating the impact of Working for Families on the main benefit duration of DPB-SP clients.

We took a different approach in this analysis. We used the profiles of clients who had actually been subject to the work obligations to create estimates for the same group of clients if the work obligations had not been introduced. The results therefore directly represent the experience of clients affected by the work obligations.

### Converting model parameter estimates into individual hazard functions

Given the estimates in Table 3 and Table 4, the exit and re-entry rates were calculated from the estimated parameters by transforming back the logit estimates on each individual to calculate the expected hazard rate in each interval. From the estimated hazard, we could then calculate clients' expected survival and probability density function.

To achieve this we needed to create a client-interval dataset that covered all intervals up to the end period of the analysis. In other words, if a client ended a spell, we needed to impute their profile for the unobserved intervals until the end of the analysis period. Table 5 illustrates how we projected a client's profile for the unobserved intervals, using the example of a client who exited at interval 4. If this client had not exited, their spell would have lasted until interval 9 (the censor interval). The challenge for the analysis was to impute the client profile for the unobserved spells (intervals 5 to 9).

**Table 5: Constructing a full client interval dataset for non censored client spells**

Interval	1	2	3	4	5	6	7	8	9
	Observed				Projected				
Events				Exit				Censor	
Fixed characteristics	Observed (no projection required)								
Spell duration variables	Calculated directly based on interval								
Policy process participation	Observed (all participants have a work obligation start date and anniversary date is a fixed variable)								
Labour market variables	Observed				Based on last observed TLA and main benefit calculate labour market variables				
Individual time varying characteristics	Observed				Constant based on value of last observed interval				

### Converting individual estimated hazard functions into modelled duration

As discussed under ‘Definition of the hazard function’ (in the ‘Modelling duration on and off benefit’ section), the survival function is related to the hazard function. This survival function  $S_{it}$  is the probability the individual  $i$  was still on benefit at the end of interval  $t$ . The hazard is a conditional probability rather than a rate. However, the general result expressing the hazard as a ratio of density to the survival function is still valid. Having calculated the individual hazard for each client, we then selected an exit interval based on the estimated hazard.

To do this we first converted the hazard for each individual spell into a probability density function (PDF). A PDF is the unconditional probability that a client would have ended the spell in each interval, and can be calculated by multiplying the hazard in interval  $t$  by the survival rate at  $t-1$ . Once we have calculated the PDF for each individual client-interval spell, we can randomly select an interval within that spell to represent the modelled exit interval (or censored if no interval is selected). At the end of this process, we arrive at an estimated exit interval for each client spell based on the model beta parameters and the client’s characteristics during that spell.

### Estimating impact of the work obligations on main benefit duration

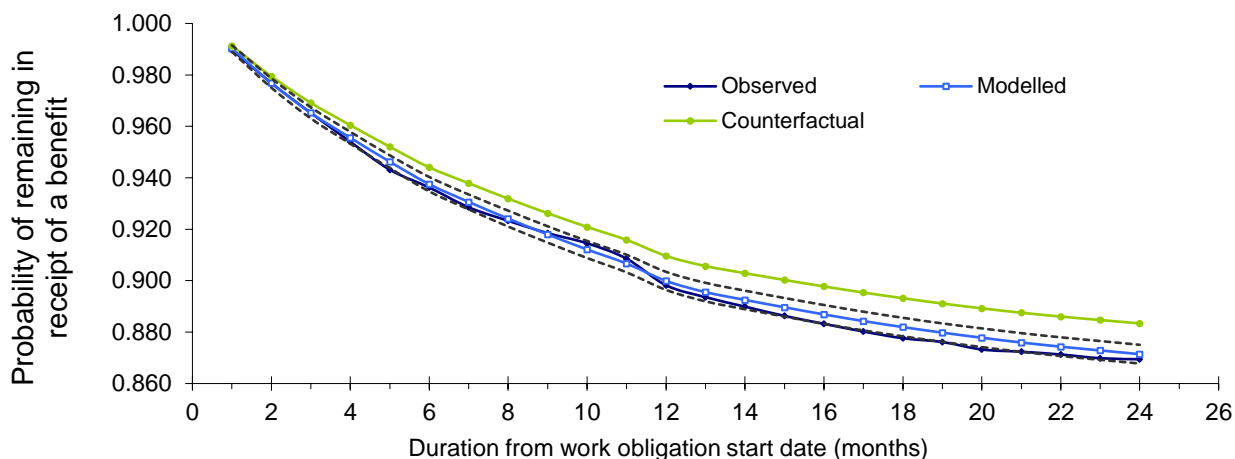
Here we calculate two expected durations that reflect one of two states:

- a. *Modelled*: clients with work obligations, based on observed benefit duration.
- b. *Counterfactual*: same group of clients in the absence of work obligations.

Using the simulation client-interval dataset, we applied the parameter estimates to the clients with work obligations. For the counterfactual state, we set their work obligation dummy variables to 0 (‘not applicable’), and calculated their expected duration on benefit (everything else being equal). In other words we calculated how the model would estimate their duration if they had not been subject to the work obligations, with all other variables remaining unchanged.

We calculated the modelled and counterfactual exit interval for each client in the analysis. Based on these modelled and counterfactual durations we could then calculate the overall hazard and survival rates for all the clients in the same way as for the observed durations on benefit. The same process was repeated for duration off main benefit. The difference in results between the modelled and counterfactual state represents the impact of the work obligations. Figure 7 illustrates the results for the three states (observed, modelled and counterfactual) for duration on benefit.

Figure 7: Modelled and counterfactual survival curves for time until benefit exit



Note: The dotted lines indicate the 95 percent confidence interval for the impact of the work obligations compared with the counterfactual.

Source: Information Analysis Platform (BDD), CSRE, MSD (research data not official MSD statistics).

The survival curves in Figure 7 are the likelihood that clients would remain on benefit in each monthly interval from when they were first subject to the work obligations. The values graphed (observed, modelled and counterfactual) are the proportion of clients on benefit in each interval after the policy change divided by the number of observations in the interval (eg uncensored).

The curve labelled 'Observed' summarises the actual observed pattern of exits for the sample population. The curve labelled 'Counterfactual' follows the same prediction as the 'Modelled' curve without the intervention parameter estimate – this represents what would have happened if the work obligations had not been introduced for these clients.

The same process was repeated for duration off main benefit.

### Simulated off-benefit client-interval spell

The next step was to take these randomly selected exits and create a simulated off-benefit client-interval spell. To achieve this we needed to create a simulated off-benefit client-interval spell for each interval a client was on main benefit, up to the censor interval.

Table 6 provides an illustration of how we created the simulated off-benefit spell. In this example we have a simulated main benefit spell lasting for five intervals. For each on-benefit interval, we create a corresponding off-benefit client-interval spell. The client profile of each of these off-benefit spells is based on the client profile at each on-benefit interval. Therefore the off-benefit client-interval spell for on-benefit interval 0 reflects the profile of the client at interval 0. In addition, each off-benefit interval spell is censored to match the duration of the on-benefit spell (ie five intervals in total). Note the interval of exit and the first off-benefit interval are equivalent. To put this another way, the point at which a client exits benefit is also the point at which they commence their off-benefit spell.

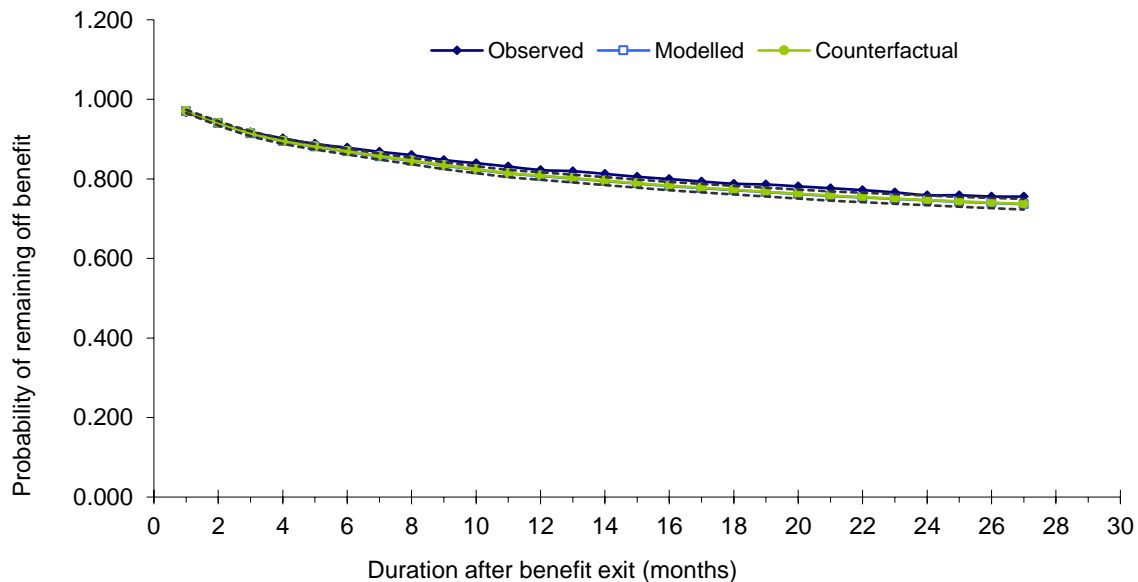
To create these simulated off-benefit spells we needed to make assumptions about the client's off-benefit profile, since, at best, we observed only one of these off-benefit spells. However, since the off-benefit model relies primarily on fixed characteristics (observed at spell start and therefore at benefit exit) such assumptions are not as strong as they might first appear.

**Table 6:** Creating simulated off main benefit spells based on client profile at each main benefit interval

Simulated client-interval main benefit spell	Simulated client-interval off main benefit spell				
	Interval 0	Interval 1	Interval 2	Interval 3	Interval 4
Interval 0	Client profile based on main benefit interval 0				Censor
Interval 1	Client profile based on main benefit interval 1			Censor	
Interval 2	Based on interval 2		Censor		
Interval 3		Censor			
Interval 4	Censor				Censor

Based on the simulated off-benefit client-interval spell, we selected a representative distribution of return-to-benefit intervals. The steps involved were the same as those for selecting intervals for exiting benefit. We calculated the hazard of returning to benefit based on the client profile at each interval, drawing from the expected beta values from the off-main-benefit duration model. Based on the estimated hazard rate at each client-interval, we calculated the unconditional probability (PDF) of returning to benefit in each interval. For each client off-benefit spell, we randomly selected a return-to-benefit interval using the probability distribution. Figure 8 illustrates the results for the three states (observed, modelled and counterfactual) for duration off benefit.

**Figure 8:** Survival curves for the time until client re entry to main benefit



Note: The dotted lines indicate the 95 percent confidence interval for the impact of the work obligations compared to the counterfactual.  
 Source: Information Analysis Platform (BDD), CSRE, MSD (research data not official MSD statistics).

## Combining model estimates

Although the individual model results are interesting, on their own they do not fully answer the evaluation question of the impact of the work obligations on DPB-SP clients' total time spent on benefit. As clients frequently return to main benefit after exit, the analysis was extended further to account for the impact of work obligations on benefit duration as well as the duration spent off benefit after exit. To do this, we combined the main benefit duration model and off-benefit duration model using the following steps (a more detailed discussion follows).

1. For each simulated client-interval on main benefit spell we calculated the hazard of exiting main benefit and converted the hazard rate into probability of exiting benefit in each interval.
2. Based on the estimated probability of exiting benefit in each interval, we randomly selected an exit interval for each client spell. The selected exits represented a random draw from the expected distribution of exits from main benefit based on the model beta estimates.
3. We used the randomly generated exit from benefit to generate a simulated off-benefit client-interval spell and calculated the hazard of returning to benefit for each interval.
4. We simulated the duration off benefit for each client based on the calculated probability of returning to benefit in each interval. The selected benefit returns represented a random draw from the expected distribution of clients returning to benefit based on the model beta estimates.
5. From the combined client on- and off-benefit spells we could calculate for each interval the probability a client would be on benefit. These interval probabilities were no longer survival probabilities, since they accounted for clients returning to benefit after exit. What this can mean is that the probability of being on benefit can increase over intervals (which cannot happen for survival curves).

## Calculating the total time on benefit

At this stage in the analysis, we have modelled two events for each client spell. The first is the interval they exited main benefit (if not censored) and the second is, if they exited, the interval they returned to benefit (if not censored). Table 7 shows stylised examples of two clients whose outcomes are observed over eight intervals. Client A has an observed main benefit spell that lasts until interval 2. From intervals 3 to 4 they remain off main benefit, returning in interval 5. For the purposes of this analysis, we assumed they remained on benefit until the censor interval. In the modelled spell, the client was estimated to remain on benefit until interval 3 and remain off benefit until interval 6, before returning to benefit from interval 7 onward.

**Table 7:** Example of observed, simulated modelled and counterfactual spells

		Interval								
		0	1	2	3	4	5	6	7	8
Client A	Actual	O	O	O			A	A	A	A
	Modelled	S	S	S	S				A	A
	Counterfactual	S	S				A	A	A	A
Client B	Actual	O	O	O	O	O	O	O	O	O
	Modelled	S	S	S						
	Counterfactual	S	S	S	S	S	S	S	S	S

Key: O: observed, S: simulated, A: assumed.

For each iteration of the simulation, we aggregated these individual results to calculate the probability a client would be on main benefit in each interval. Table 8 shows the results for the three states (observed, modelled and counterfactual). These values are the proportion on benefit in each interval divided by the number of observations in the interval (eg uncensored spells).



**Table 8: Survival on main benefit spell and probability of being active on main benefit**

Month from work obligations started	Modelled survival on main benefit from a single spell	Modelled client active on main benefit from multiple spells	Actual observed clients active on main benefit	Counterfactual
0	100.0%	100.0%	100.0%	100.0%
1	99.0%	99.0%	99.0%	99.2%
2	97.7%	97.8%	97.8%	98.0%
3	96.5%	96.7%	96.8%	97.0%
4	95.6%	95.8%	95.8%	96.3%
5	94.6%	95.0%	94.8%	95.5%
6	93.8%	94.3%	94.3%	94.9%
7	93.1%	93.7%	93.7%	94.4%
8	92.4%	93.3%	93.4%	94.0%
9	91.8%	93.0%	93.1%	93.7%
10	91.2%	92.6%	93.0%	93.3%
11	90.7%	92.3%	92.7%	93.0%
12	90.0%	92.0%	92.0%	92.7%
13	89.6%	91.9%	91.8%	92.6%
14	89.3%	91.9%	91.8%	92.7%
15	89.0%	92.1%	91.9%	92.9%
16	88.7%	92.2%	91.8%	93.0%
17	88.4%	92.3%	91.7%	93.0%
18	88.2%	92.5%	91.8%	93.2%
19	88.0%	92.7%	92.1%	93.4%
20	87.8%	93.0%	92.3%	93.6%
21	87.6%	93.4%	92.8%	94.0%
22	87.4%	93.7%	93.3%	94.3%
23	87.3%	94.0%	93.6%	94.6%
24	87.1%	94.5%	94.3%	95.0%
25	87.0%	95.1%	95.0%	95.6%
26	87.0%	95.9%	95.6%	96.3%
27	86.9%	96.8%	96.6%	97.1%

Note: Active on main benefit is not the same as the survival curve, since it accounts for clients returning to main benefit after exit.

Source: Information Analysis Platform (BDD), CSRE, MSD (research data not official MSD statistics).

### Covariance of parameters between models

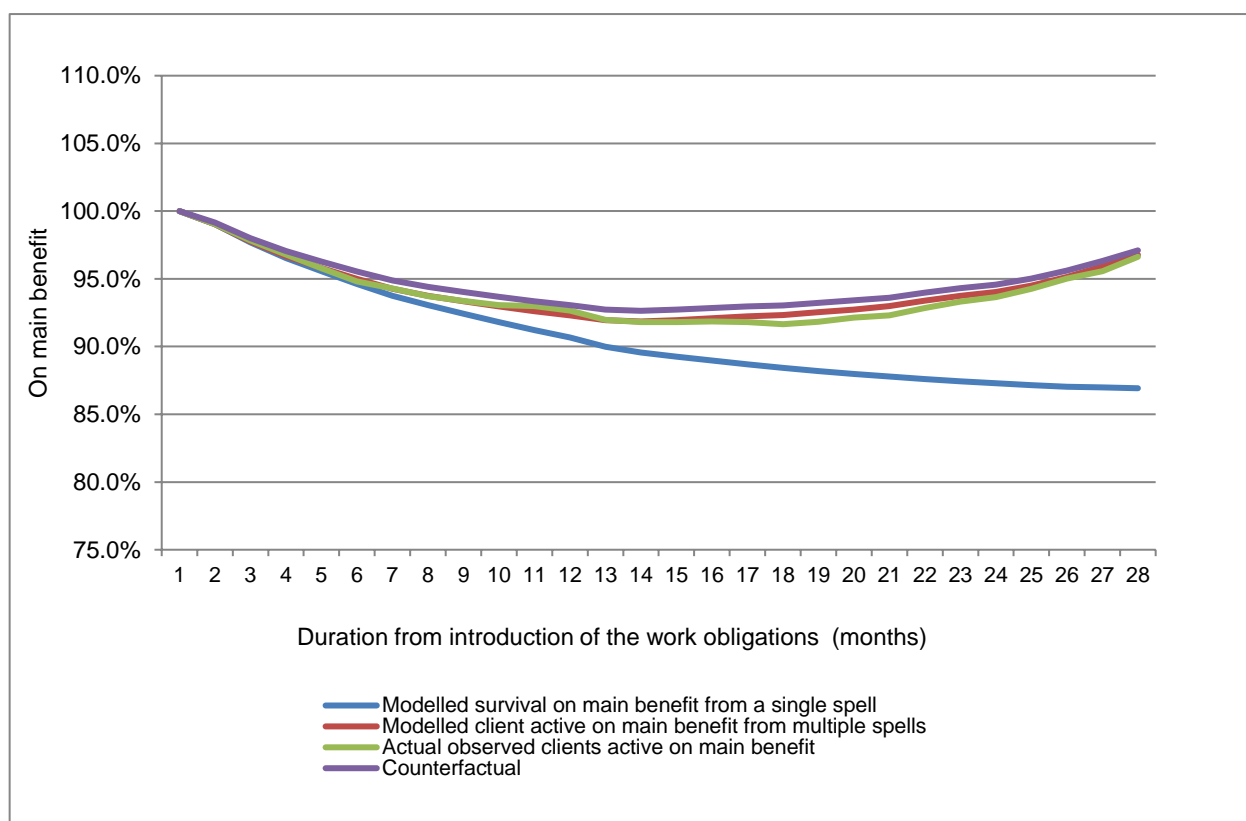
The probability of transition in or out of benefit depends on a client’s personal characteristics together with duration terms (baseline); this gives a model for on-benefit duration. The distribution according to duration in the multiple-spell approach is more complicated. We treated the covariance metric in each exit and re-entry model independently. The simulation and calculation of the total time on any main benefit was based on the parameters estimated in each model independently. Table 8 and Figure 9 show the results from the model for survival on main benefit from a single spell with the probability of a client being active on main benefit based on multiple spells. We also plotted the actual observed clients on main benefit in the same study period.

It is important to remember that the modelled clients active on main benefit in Table 8 are not survival probabilities. To illustrate the difference, Figure 9 plots the survival on main benefit based on the single spell model and the probability of being on main benefit based on multiple spell simulation in each interval. Both were derived from the actual benefit spells for clients subject to the work obligations. What is apparent from Figure 9 is that looking only at survival on main benefit in the single-spell approach tends to give the impression that the policy introduction resulted in a rapid reduction in the probability of being on benefit. The ‘active on benefit’ simulation from multiple spells shows the reduction to be much more modest. For comparison: based on single spell model



estimation, by month 24 after the work obligations were introduced 87.1 percent of clients remained on main benefit, whereas this increased to 94.5 percent when we included clients' multiple spells on main benefit. The figures in column two in Table 8 show the results using only single spell exit rates, which do not take into account that clients leaving main benefit will also sometimes return. When this is compared to the actual proportion of people remaining active on main benefit (column 4 of Table 8; Figure 9), the single spell approach is shown to have underestimated the number of clients on main benefit in the two-year window (by 7.2 percentage points). The 'active on benefit' simulation from multiple benefit spells (column 3 of Table 8), which takes re-entry into account, is much closer to the actual observed proportion of clients who remained on main benefit.

Figure 9: Survival on main benefit spell and probability of being active on main benefit

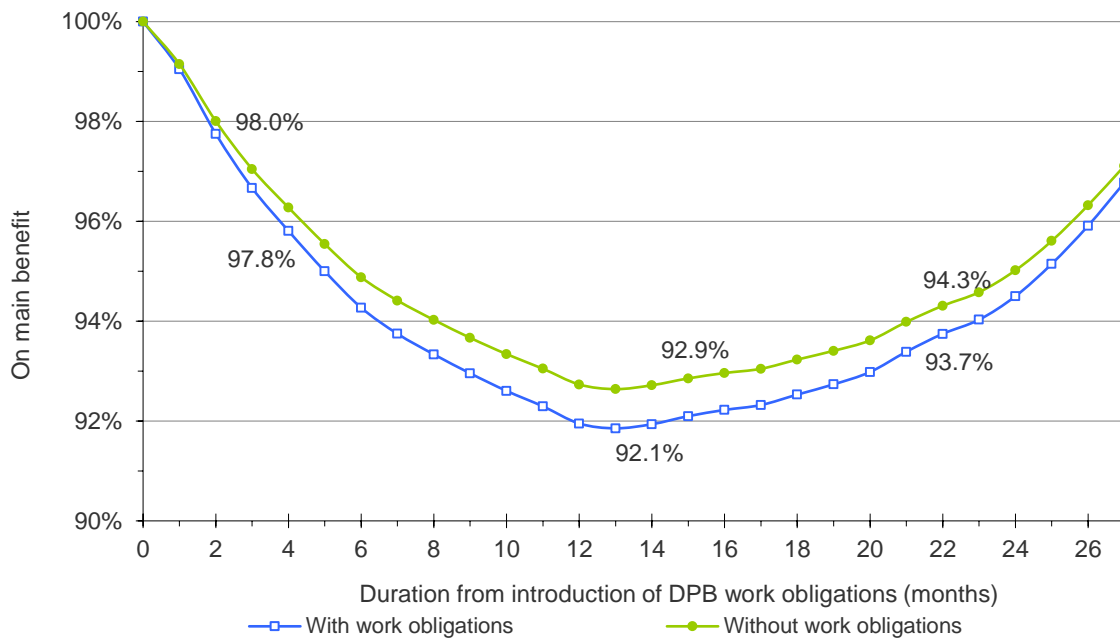


Note: 'Active on main benefit' is not the same as 'survival on main benefit', since it accounts for clients returning to main benefit after exit.  
 Source: Information Analysis Platform (BDD), CSRE, MSD (research data not official MSD statistics).

Note re-entry is assumed to be possible in the multiple spells approach. This is in contrast to the single spell approach, where only one spell for each individual is assumed.

Figure 10 enlarges the top two lines in Figure 9, providing a clear image of the total impact of part-time work obligations on clients' probability of remaining on main benefit.

Figure 10: Probability of being on main benefit based on modelled and counterfactual spells on and off main benefit

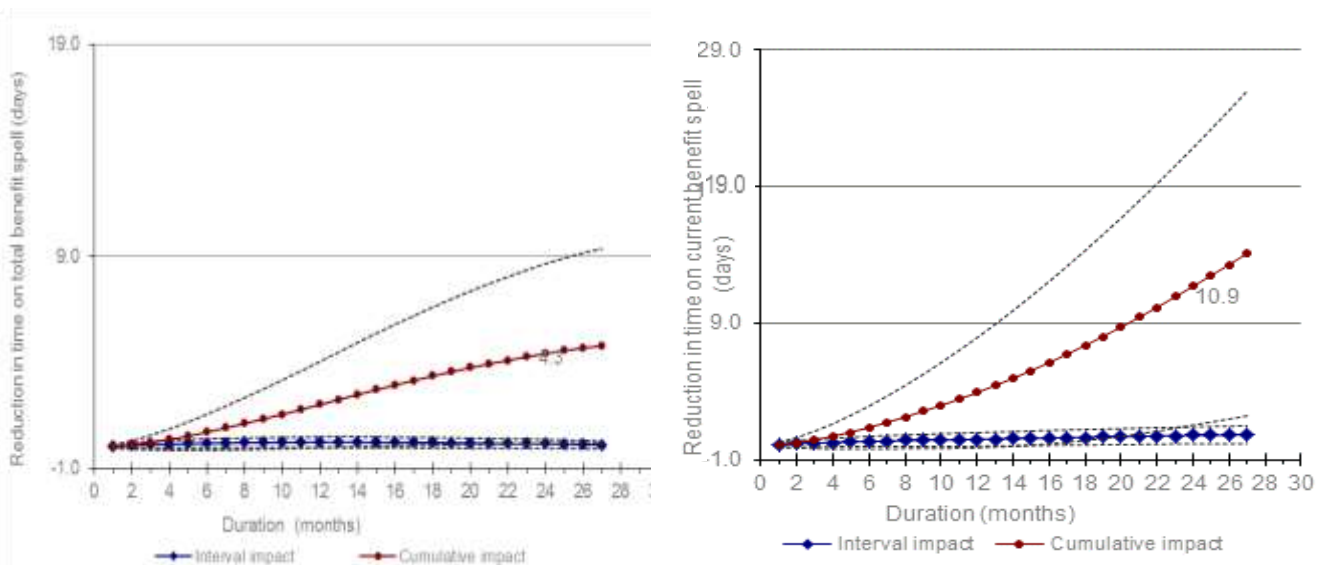


Note: These are not survival curves, since they account for clients returning to main benefit after exit.  
 Source: Information Analysis Platform (BDD), CSRE, MSD (research data not official MSD statistics).

### Impact of the work obligations on clients' overall main benefit duration

With regard to the difference between counterfactual and modelled probabilities, Figure 11 and Table 9 show both the impact at each interval and the cumulative impact of the work obligations on clients' main benefit duration. At 27 months after the introduction of the work obligations (the end of December 2012), we estimate that affected DPB-SP clients spent about five fewer days on main benefit than they would have if they had not been subject to the work obligations.

Figure 11: Distribution of impact of days on benefit in the 27 months from the introduction of the Future Focus work obligations, from a single spell and multiple spell approach



Note: The dotted lines indicate the 95 percent confidence interval.  
 Source: Information Analysis Platform (BDD), CSRE, MSD (research data not official MSD statistics).

**Table 9:** Distribution of impact of days on benefit in the 27 months from the introduction of the Future Focus work obligations, from a single spell and multiple spell approach

Interval (months)	Single spell approach – continuous duration impact	Multiple spell approach – on any main benefit	Cumulative impact (days) on single spell approach	Cumulative impact (days) on multiple spells approach
0	0	0	0	0
1	0.09	0.03	0.1	0.0
2	0.15	0.08	0.2	0.1
3	0.21	0.11	0.5	0.2
4	0.26	0.14	0.7	0.4
5	0.31	0.16	1.0	0.5
6	0.34	0.18	1.4	0.7
7	0.37	0.20	1.7	0.9
8	0.39	0.21	2.1	1.1
9	0.41	0.21	2.5	1.3
10	0.44	0.22	3.0	1.5
11	0.45	0.23	3.4	1.8
12	0.48	0.23	3.9	2.0
13	0.51	0.24	4.4	2.2
14	0.54	0.23	5.0	2.5
15	0.56	0.23	5.5	2.7
16	0.59	0.22	6.1	2.9
17	0.61	0.22	6.7	3.1
18	0.64	0.21	7.4	3.4
19	0.66	0.20	8.0	3.6
20	0.69	0.19	8.7	3.7
21	0.71	0.18	9.4	3.9
22	0.74	0.17	10.2	4.1
23	0.76	0.17	10.9	4.3
24	0.78	0.16	11.7	4.4
25	0.79	0.14	12.5	4.6
26	0.80	0.12	13.3	4.7
27	0.82	0.10	14.1	4.8

Again the single spell approach overestimates the impact of the work obligations on the total time clients spent on main benefit, because it does not take into account some individuals' experience of multiple spells on main benefit. Column 5 of Table 9 takes re-entry into account, giving an impact of distribution on main benefit that is much closer to the actual distribution of clients active on main benefit.

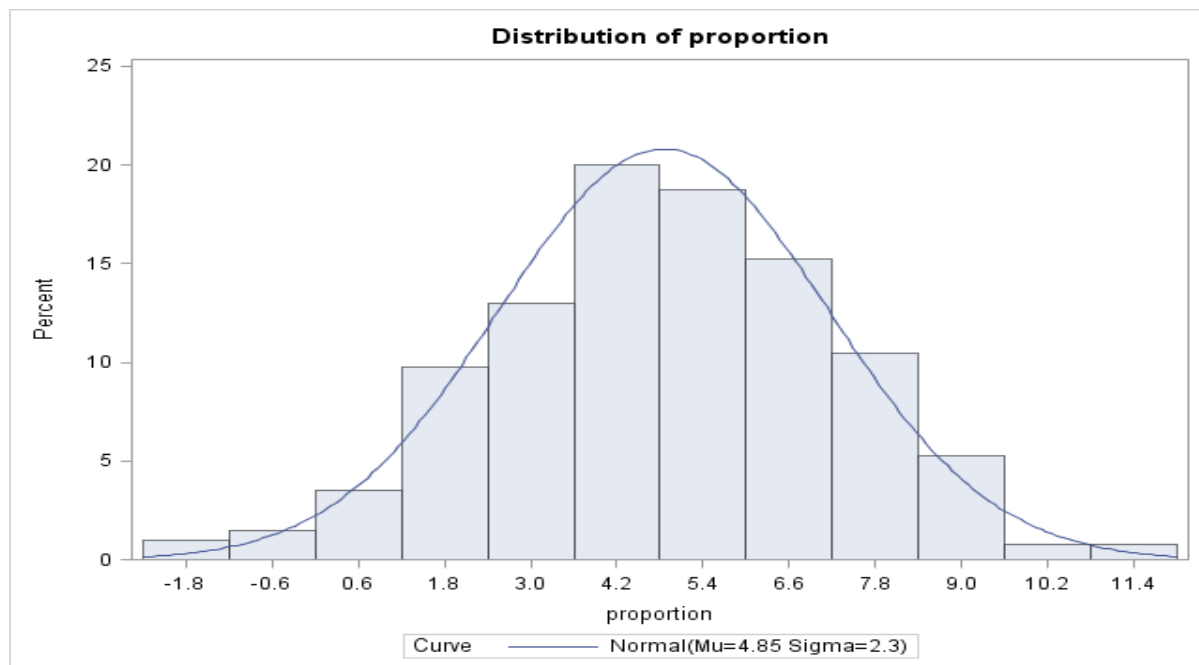
### Calculating the confidence intervals

While the above calculation was relatively straightforward for the mid-point values of the beta estimates themselves, it was more difficult to convert the standard errors for the beta estimates into confidence intervals. To overcome this problem, we ran a simulation model to arrive at the range of likely values that the survival curves would fall into, based on the parameter space for the beta estimates.<sup>28</sup> The parameter space is defined by the model's beta estimate and associated beta covariance matrix. At the start of each iteration, we took a random draw from the parameter space for

<sup>28</sup> Gentle, J. E. (2003). *Random Number Generation and Monte Carlo Methods* (Second ed.). Berlin: Springer-Verlag.

each model. Based on this random draw, we then calculated the modelled and counterfactual durations and associated impact estimates. Repeating this process over 400 times generated a distribution of expected values based on the parameter space. We took the 95 percent confidence intervals of this normal distribution as our range confidence intervals. To test whether the number of iterations were sufficient, we plotted the distribution from number of iterations (Figure 12).

Figure 12: Distribution of iteration on impact of reduction in days spent on benefit



As the number of simulations increased, we expected to see stabilisation in the central estimate and the confidence intervals. Using the normal distribution shown in Figure 12, we finalised the total estimated impact of the work obligations for DPB-SP clients as a reduction in benefit duration of around five days.

# Overall findings

## As at the end of December 2012, 88,790 clients had been subject to the Future Focus work obligations

These included clients who were subject to the work obligations when the policy was first introduced (ie they had youngest children aged six or over), and clients who later became subject to the obligations as their youngest children turned six.

## The work obligations increased benefit exits for DPB-SP clients; however, they did not affect the time they spent off benefit after exit

Between 27 September 2010 and the end of December 2012, the work obligations decreased the time affected DPB-SP clients spent on their current main benefit spells by 14 ( $\pm 4$ ) days (Table 10).

However, the introduction of work obligations had no impact on the rate at which clients returned to main benefit after exit. The parameters for the baseline hazard show that re-entry to benefit was most likely to occur immediately after leaving benefit, which implies that a quicker exit may be accompanied by a quicker return to main benefit, partially offsetting the overall impact of the work obligations.

**Table 10:** Summary of cumulative outcomes and impact of the part time work obligations

Outcome	Estimate (duration on benefit (days))	Lapse period (months since introduction of the work obligations)				
		9	16	19	22	27
Continuous duration on benefit	Observed	240	403	467	530	630
	Modelled	241 ( $\pm 0.9$ )	404 ( $\pm 2.0$ )	470 ( $\pm 2.6$ )	534 ( $\pm 3.1$ )	636 ( $\pm 4.1$ )
	Counterfactual	243	410	478	544	650
	<b>Impact</b>	<b>-2.5 (<math>\pm 0.9</math>)</b>	<b>-6.1 (<math>\pm 2.0</math>)</b>	<b>-8.0 (<math>\pm 2.5</math>)</b>	<b>-10.2 (<math>\pm 3.0</math>)</b>	<b>-14.1 (<math>\pm 4.0</math>)</b>
On any main benefit	Observed	258	451	534	617	760
	Modelled	257.6 ( $\pm 0.5$ )	451.1 ( $\pm 1.1$ )	534.3 ( $\pm 1.3$ )	618.4 ( $\pm 1.5$ )	761.3 ( $\pm 1.7$ )
	Counterfactual	259	454	538	622	766
	<b>Impact</b>	<b>-1.3 (<math>\pm 0.7</math>)</b>	<b>-2.9 (<math>\pm 1.4</math>)</b>	<b>-3.6 (<math>\pm 1.7</math>)</b>	<b>-4.1 (<math>\pm 2.0</math>)</b>	<b>-4.8 (<math>\pm 2.3</math>)</b>

Notes: Observed: actual duration of clients subject to the work obligations.  
 Modelled: estimated duration of clients subject to the work obligations based on regression duration models.  
 Counterfactual: estimated duration of clients if they had not been subject to the work obligations.  
 Impact: difference between the modelled and the counterfactual durations on benefit.  
 Bracketed figures provide a 95 percent confidence interval for the estimate.

## Overall, the work obligations reduced clients' total time on benefit by five days

Taking the unchanged rate of return to benefit into account, we estimate that the introduction of work obligations reduced the time affected DPB-SP clients spent on main benefit by five days between 27 September 2010 and the end of December 2012 (Table 10).

However, we have not yet seen the full impact of the work obligations, as the counterfactual and modelled outcomes have not yet converged for DPB-SP clients who entered benefit at the very end of the study period. Therefore the observed impact reported here is an underestimate of the full effect of the obligations.

## The work obligations reduced the number of clients on benefit by around 400 per month, saving \$12.9 million in benefit expenditure

Based on the above results, we calculate that the work obligations resulted in an average reduction of 400 DPB-SP clients on main benefit per month between 27 September 2010 and the end of December 2012 (Table 11).

Based on average daily benefit payments to DPB-SP clients, we estimate that this saved \$12.9 million<sup>29</sup> in main benefit expenditure in the same period.

**Table 11:** Estimated reduction in clients on benefit and associated income support savings from the Future Focus work obligations, 27 September 2010 to end of December 2012

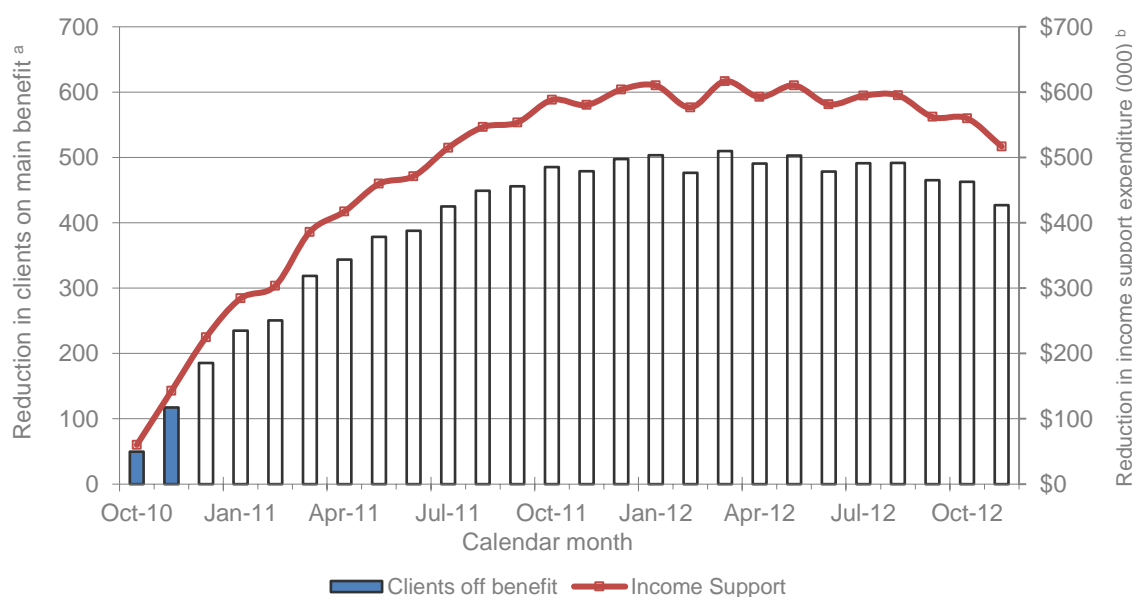
Affected clients	88,800
Clients affected at policy start date	45,000
Average new clients affected per month after start date	1,685
Average reduction in clients on benefit per month	400
Reduction in income support expenditure (,000s)	\$12,990

Note: Data in the table are rounded, so do not add exactly.

Source: Information Analysis Platform (BDD), CSRE, MSD (research data not official MSD statistics).

The work obligations had the greatest impact on client numbers and associated income support expenditure 15 months after their introduction (March 2012), and continued to have a steady impact on DPB-SP client numbers and benefit expenditure following this point (Figure 13).

**Figure 13:** Estimated impact of the work obligations on the average number of clients on benefit and income support expenditure by calendar month, 27 September 2010 – end of December 2012



Notes:

a: Estimated reduction in the number of clients on main benefit during the month as a result of the work obligations.

b: Based on the reduction in clients on main benefit multiplied by the average main benefit rate (in 2012 dollars) for clients on DPB-SP (excludes supplementary and third-tier assistance).

Source: Information Analysis Platform (BDD), CSRE, MSD (research data not official MSD statistics).

<sup>29</sup> This figure is in 2012 dollars.

# Discussion

The evaluation approach used in this study focuses on benefit duration, specifically how the introduction of the Future Focus work obligations influenced the time spent on benefit by affected DPB-SP clients. To calculate the impact on benefit duration, the evaluation took into account both exit from and re-entry to main benefit, to provide a comprehensive picture of clients' actual benefit durations.

The study did not evaluate whether the introduction of the work obligations had any impact on the number of new clients starting on DPB-SP. However, we expect that the introduction of the work obligations may have also influenced the decisions of some people to apply for DPB. They may have chosen instead to seek alternative support through family or friends, or to remain in relationships.

Our data analysis has clearly shown that calculating benefit survival based on a client's initial spell on benefit only underestimates the total time clients spend on main benefit, because it does not take into account that some clients will re-enter benefit and experience multiple benefit spells. An approach that uses multiple benefit spells provides results that are much closer to the actual observed proportion of clients who remain on main benefit.

While the evaluation looked at the time a client spent both on and off benefit to calculate actual benefit duration, it did not look at the reasons for clients exiting benefit and where they moved to following exit. As a result, the reduction in benefit duration for affected DPB-SP clients due to the work obligations cannot be interpreted as a corresponding increase in the employment of these clients, as some clients may have exited benefit without entering employment.

The impact of the work obligations reported in this report is an underestimate of the full effect of the policy, as the counterfactual and modelled outcomes have not yet converged for DPB-SP clients who entered benefit at the very end of the study period. It is also possible that the impact of the work obligations has been underestimated due to other factors:

- The conditions that made a client subject to the Future Focus work obligations were that they were receiving DPB-SP and the youngest child in their care was aged six or over. In some cases caregivers may not have been children's natural parents: grandparents and adoptive parents were also included. It is possible that some of these clients transferred to New Zealand Superannuation following the introduction of the work obligations; however, this is not treated by the analysis as an exit from main benefit, as these clients were still receiving income support.
- In the same way, clients with youngest children who reached 18 years of age may have transferred to other benefits (eg unemployment-related benefits), then exited those benefits shortly afterwards. These exits are not included in the analysis, as once a client transfers to a benefit other than DPB-SP they are deemed to have left the sample population. It is possible that prior to the introduction of the work obligations, these clients remained on DPB-SP until exit, even though technically not eligible, as the policy settings under which case managers operated were less stringent.





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