

**Reforms to Earnings Supplement Programs in British Columbia:
Making Work Pay for Low-Income Workers**

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Abstract

Some individuals work nearly full-time and most-year at low wages but remain poor. An effective way to assist the “working poor” is to supplement their earnings, which lifts them from poverty by rewarding their work. This paper explores how an earnings supplement program for British Columbia could serve this goal. Through quantitative simulations we explore alternative approaches, such as a cost-neutral reconfiguration of the federal Canada Workers Benefit and a provincial top-up to the CWB. These exercises provide insight into the trade-offs in benefits, costs, and poverty impacts of varying the structure and parameters of programs focused on B.C. We find that a cost-neutral reconfiguration of the CWB for B.C. has limited impact on poverty rates for childless singles, while increasing poverty rates for other family types. In contrast, a combination of CWB reconfiguration with a provincial CWB top-up targeted at low-earning childless single workers could significantly improve outcomes for that group. At a cost to the province of \$400 million, this scheme could reduce the numbers of such workers in poverty by 18,000 while raising the incomes of many more of the working poor. Such a program could be administered simply by the Canada Revenue Agency as an add-on to the CWB.

Introduction

A common stereotype is that people are poor because they do not work enough. While little work may be common among those facing major barriers such as disability, study commitments, or major care obligations, a segment of the population in B.C. undertake substantial work but still remain in poverty because of low-wage rates and an inability to find jobs that are both full time and full year (Green 2020). This phenomenon is a particular issue for childless single adults, who have the highest poverty rates in the province while receiving the smallest cash supports.¹ To assist these members of the working poor, effective measures include ones that increase, or supplement, their earnings. Initiatives such as B.C.'s ongoing increases in the minimum wage are helping, but the use of earnings supplements (ES) could further assist this segment of the population. Both approaches help make work more profitable, but unlike the minimum wage, an ES relies on public funds rather than the employer paying.

In this paper, we address how an earnings supplement could help to reduce poverty among the working poor, particularly childless singles, in British Columbia. An ES can be designed to comport with many basic income principles: simplicity in design, ease of access, respectfulness in delivery, supportiveness of economic security, and enhancement of social inclusion.² The main departure of an ES program from a basic income is that benefits are conditional on work or earnings, while most basic income proposals would make payments unconditional on working.³ Unlike unconditional cash transfers, an ES program can further serve principles such as the self- and social respect that accompany working; because the ES format links benefits to work and earning, it may also better satisfy the reciprocity characteristic and taxpayer support.⁴

The only ES program currently operating in B.C. is the federal Canada Workers Benefit (CWB), which dispenses less than \$300 million per year to beneficiaries in the province. In our analysis of how earnings supplementation could be expanded, we consider a reconfiguration of the CWB (which would be costless to the province), and provincial augmentation of the CWB in the form of a participation bonus or a top-up. Through a series of quantitative simulations for various forms and combinations of these reforms, we are able to gain insight into the potential benefits and costs as well the ES parameter trade-offs and the poverty impacts on major family types. We also consider a provincially formulated, administered, and financed ES scheme that would operate parallel to the CWB, with guidance from other provinces that have such programs, but we leave further analysis of such a B.C. scheme to others. Extensive experience with the U.S. Earned Income Tax Credit (EITC) is also informative for analysis of Canadian reform measures.

¹ For more information on poverty rates in B.C., see Petit and Tedds (2020c).

² For a discussion of basic income principles, see Tedds, Crisan, and Petit (2020).

³ However, some formulations of a basic income would impose a “participation” requirement that includes working, volunteering, care giving, or study/training activities; Petit and Kesselman (2020).

⁴ For expanded discussion of these issues, see Petit and Kesselman (2020).

The simulation exercises presented in this paper yield useful insights into the potential for reformed earnings supplements in B.C. First, we find that cost-neutral reconfigurations of the CWB for B.C. do not have a large effect on poverty rates for single childless adults nor on marginal effective tax rates or participation tax rates. In addition, because our CWB reconfigurations target single childless adults while maintaining cost neutrality, they increase poverty rates for other family types such as single parents and couples with children. Second, we find that various forms of provincial augmentation to the CWB display mixed results. On the one hand, implementing a participation bonus on top of the current CWB program parameters has very little effect on poverty rates; it reduces the poverty rate from 11.03% to 10.98%, a 0.05 percentage point reduction. It would also have little effect on the welfare wall while coming at a high cost—between \$83 million and \$451 million to the province. However, reconfiguring the CWB *plus* adding a top up while still targeting single childless adults has a larger impact on reducing poverty for that group and also reduces poverty for other family types. This policy mix comes at a larger cost to the province: our preferred model reduces the poverty rate from 11.03% to 9.94%—a reduction of 1.09 percentage points—at a cost of \$400 million. It also reduces the welfare wall modestly for Income Assistance (IA) clients.

A few notes are in order before proceeding. The simulations undertaken here are strictly static in their assumptions about the behavioural responses of beneficiaries; in fact, we would expect positive incentives for labour force entry to arise as well as some potential negative impacts on work hours for those in the benefit phase-out range of the ES. However, we do chart the implied marginal effective tax rates and participation tax rates that are key to understanding the incentive effects, and we compute them separately for IA beneficiaries and workers living in poverty who are not on IA.⁵ Our analysis does not address the application of an ES to IA beneficiaries, as a reduction in the tax-back rate on IA benefits would be a more effective and salient approach to improving incentives.⁶ We also offer some suggestions for technical changes to the operation of the CWB.

The Canada Workers Benefit

Here we provide a brief description of the Canada Workers Benefit, with further details on the CWB and provincial ES programs in related papers (see Petit and Kesselman 2020; Petit and Tedds 2020d). The CWB is a federal refundable tax credit, introduced in 2019 as a reform of the Working Income Tax Benefit (WITB). The CWB is different from the WITB in that taxpayers are automatically assessed (upon filing of taxes) for eligibility, and the benefit levels for the CWB are higher than for the WITB. The CWB is administered and delivered by the Canada Revenue Agency (CRA), and is paid out annually along with any other taxes and transfers owed to the taxpayer as part of their annual tax filing.

⁵ For more information on marginal effective tax rates and participation tax rates, see Milligan (2020).

⁶ Some interactions arise between the CWB and IA programs, which dampen the work incentives of the CWB particularly for beneficiaries on Disability Assistance; see Petit and Tedds (2020a).

Earnings above a \$3,000 threshold are eligible for the CWB.⁷ The maximum annual CWB amount in 2020 is \$1,380.90 for single adults and \$2,379.64 for families. It is phased in at a rate of 26% and phased out at a rate of 12% above an adjusted net family income of \$13,065.90 for single adults or \$17,350.48 for families. There is also a disability supplement for people who receive the Disability Tax Credit with a maximum benefit of \$713 and a lower phase-in threshold at an earned income of \$1,500. The CWB is not available to students enrolled in post-secondary education for 13 weeks or more in a year. In 2020, the CWB is expected to pay B.C. residents total regular benefits of \$293.5 million plus \$4.9 million in its disability supplement.⁸

The benefit amounts for the CWB in 2019 (the first year the CWB was in operation, omitting the disability supplement) compared to the WITB are shown in

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The CWB has been criticized on a number of fronts. It has been asserted that the maximum benefit is too low and does not extend to high enough earnings. Individuals who work full time, full year at B.C.'s minimum wage of \$15.20/hour (to be implemented June 1, 2021) will earn around \$31,000 annually. The current CWB for single adults with no children does not extend to that level, so that these workers will receive no CWB benefit. Commentators have argued that the CWB should reward minimum wage workers (Milligan 2018). Moreover, the CWB is not salient: many taxpayers do not know they are receiving the CWB because the benefit amount is still small, and receipt of the benefit is buried in the taxpayer's refund. Even if the best program with the best incentives is designed, if those that it is intended to target do not know about it, the program will not realize its full potential.

Figure 1: Panel A shows the CWB and WITB for single adults with no children, and Panel B shows the comparison for families including single parents and couples with and without children. The figure shows the CWB benefit is higher than the WITB benefit for all levels

⁷ Both the \$3,000 working-income threshold and subsequent thresholds for phase-in and phase-out over adjusted net family income are all calculated at the nuclear family level (tax filer plus spouse/common-law partner).

⁸ Authors calculated using SPSD/M.

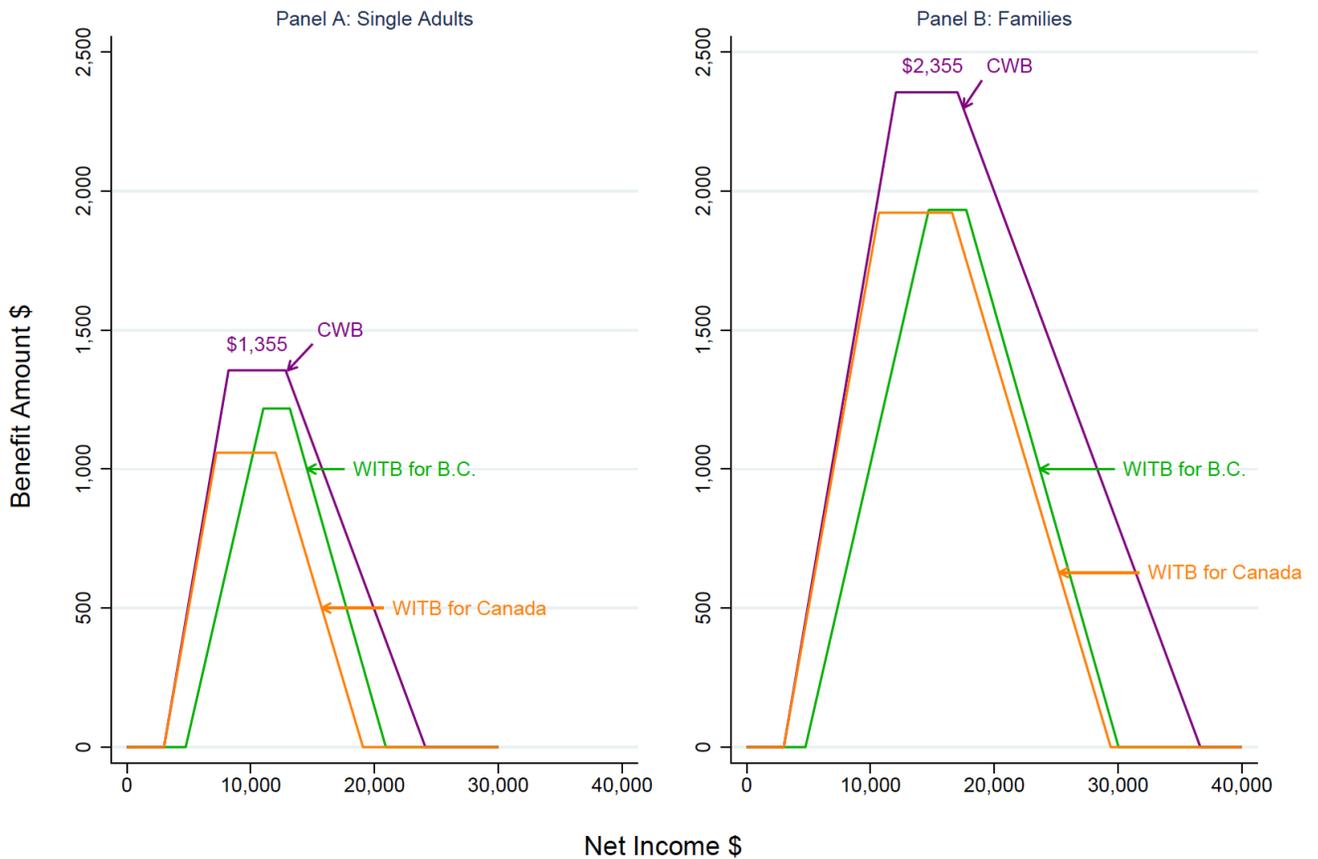
of net income and the CWB extends over a wider range of net income than the WITB; the CWB thus enlarged the WITB benefits .

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Figure 1

CWB Parameters in 2019 Compared to the WITB Parameters in 2018



Excludes the Disability Supplement

Choice of CWB/ES Design for B.C.

Our choice of earnings supplement design addresses three interrelated facts. First, the CWB has been criticized for both inadequacy in level and failing to reach those who work minimum-wage, near full-year jobs. In our choice of CWB/ES design that follows, we address both of these criticisms to the extent possible, given other trade-offs. With respect to the adequacy criticism, several considerations are relevant. On the one hand, the EITC in the U.S. has been considered a fairly successful program, mainly because of the high level of benefits available to families with children. However, Canada already has significant child income support programs, including the Canada Child Benefit (CCB) and the B.C. Child Opportunity Benefit (COB).⁹ Thus, following the U.S. model of very low benefits for persons/couples with no children, and much higher ES benefits for people/couples with children does not fit the Canadian (and B.C.) context. Instead, when determining what is “adequate,” we look at the income of the working poor in B.C. and consider what level of ES is required to move the

⁹ See the overview of B.C. programs (Petit and Tedds 2020b) and an assessment of reforms for child benefit programs (Kesselman 2020b).

working poor above the market basket measure (MBM) income poverty threshold. This is discussed in more detail below. With respect to the second criticism—that the CWB fails to reach those who work minimum-wage, near full-year jobs—we consider ES designs that extend the maximum net income at which a person is eligible for the ES/CWB (e.g., a higher break-even rate), even at levels somewhat above the poverty threshold, while assessing how this may impact those with lower net income/earnings.

Second, we address an original goal of the WITB—reducing the welfare wall by encouraging movement of IA beneficiaries into the labour force. The WITB was intended to “supplement the earnings of low-income workers to help ‘make work pay’ ... [T]he effects of a WITB are to encourage individuals to move from social assistance to the labour force by allowing them to keep more of the money they earn, that is, by lowering the ‘welfare wall’.” (Government of Canada, Department of Finance Canada 2005, 130). Given this original intention and the high welfare wall experienced by those on IA in B.C. (see Milligan 2020 for more information), one of our focuses is on an ES that targets entry into work and helps support the lowering of the welfare wall for IA clients. Although we note this, we do not make lowering the welfare wall for IA clients the main objective of an ES because the lowering of the welfare wall for IA clients is more effectively achieved through reducing the phase-out of IA benefits. For our simulations, we examine the effects of ES variants on the welfare wall for IA clients.

Third and of higher priority, we address the fact that single people currently have the highest rate of poverty in B.C. and are in the greatest depths of poverty (Petit and Tedds 2020c). On the one hand, an ES can be used to address the poverty rates of single childless adults who have significant attachment to the labour force. Using the 2016 long-form census, Green (2020), assesses the income sources of people with income below the MBM poverty threshold. In Table 1, we reproduce his results on income sources for single adults with no children with income below the MBM threshold of income poverty. As shown in the table, only 43% of single adults with no children under the poverty line report any wages/salary income. Focusing on single childless adults with income below the MBM income poverty threshold and with positive employment income, Table 2 shows that about 25% of those with earnings have annual earnings of \$16,000 or more. This suggests that an CWB/ES of about \$4,000/year, or roughly 25% of earned income, could move 25% of single childless adult low-income earners over the poverty line, thereby reducing the poverty rate for single childless adults (although, as we show later, the costs of doing so are relatively high).

Table 1

Income Distribution by Source for Single Adults without Children Present with Income Below the MBM Income Poverty Threshold (for B.C. residents, 2016 Census)

	Mean income (\$)	Proportion of total income (%)	Mean income by income percentile				
			10th	25th	50th	75th	90th
Total income	\$11,371	1	\$400	\$6,800	\$11,400	\$15,500	\$19,700
Market income	\$6,847	0.60	0	0	\$3,000	\$13,000	\$18,000
Employment income	\$6,010	0.53	0	0	\$1,000	\$12,000	\$18,000
Wages	\$4,883	0.43	0	0	0	\$8,000	\$16,000
Self-employment	\$1,127	0.10	0	0	0	0	\$4,000
Transfer income	\$4,524	0.40	\$200	\$400	\$1,400	\$10,800	\$11,500
EI	\$325	0.03	0	0	0	0	0
IA +	\$3,266	0.29	\$200	\$400	\$600	\$6,500	\$11,400
CPP	\$840	0.07	0	0	0	0	\$2,500
CPP under age 60	\$444	0.04	0	0	0	0	0

Note. From Green (2020).

Table 2

Distribution of Wage and Salary Earnings for Single Adults Without Children Below the Poverty Line with Positive Employment Income (for B.C. residents, 2016 Census)

Percentile	Wage/salary earnings	Self-employment earnings
5	\$1,000	\$1,000
10	\$2,000	\$2,000
25	\$5,000	\$5,000
50	\$11,000	\$10,000
75	\$16,000	\$14,000
90	\$20,000	\$18,000
95	\$22,000	\$21,000

Note. From Green (2020).

Green (2020) focuses on the needs of single childless adults with income below the poverty line and employment income of around \$16,000, which we call *poor high earners*. He notes that this group is heavily represented by:

Young people mainly in the Lower Mainland and Victoria. They are disproportionately female and are more likely to have completed high school than others below the poverty line. They tend to work much of the year, with 75% working 40 weeks or more and the

vast majority of those working full-time hours per week. It is worth noting that they are predominantly in sales and service occupations, with 44% being in those occupations. Thus, these are low-wage, young women in sales and service occupations—the group with the most negative employment effects from the COVID pandemic. (p. 10)

An ES could also be used to address the poverty depths of single childless adults with much lower earnings. From Tables 1 and 2, this could consist of extending the ES to those with at least \$1,000 per year of earned income. However, poverty depths may be better addressed by reforms to other income and social support programs. For single childless adults with income below the MBM poverty line and with wages/salary in the 10th percentile, we see from the 2016 census data that they are more likely to have worked 1 to 13 weeks part-time in 2015. This labour force attachment is low compared to single childless adults who have wages/salary of \$16,000 to about \$20,000; they are more likely to have worked 40 to 52 weeks full time in 2015. For those with very low earnings and low labour force attachment, a variety of factors may be at play, including episodic disabilities and other health issues, struggles with addictions, homeless and/or mental health issues, and behavioural issues. For this group, reforms to other programs may be more beneficial than an ES in reducing their depths of poverty. Reforms to IA (for example, adequacy of benefits, transitions in and out of for those with episodic disabilities), Employment Insurance (EI) (for example, eligibility criteria, adequacy of benefit for low-income earners), and basic services (for example, low-cost housing/rent supplements, addictions support, mental health supports, caseworker relational supports) may be better targeted to this group to enable them to move into more consistent labour force attachment (where possible) and to address the poverty depths of those who are ready and able to engage in more consistent paid work.

To summarize, the main focus of the ES designs presented in the next sections is on the group of single childless adult earners with total earnings not too far below the MBM poverty threshold. These workers have relatively strong labour force attachment in low-quality jobs and could be moved out of poverty by an expanded CWB/ES. They are the group who are not being adequately rewarded for work, a fact amplified by the COVID-19 pandemic. Directly related to this focus, we seek to improve the adequacy and thus saliency of earnings supplement provisions. Finally, but to a lesser extent, we design ES enhancements with Income Assistance (IA) clients in mind so that their welfare wall is, at minimum, not exacerbated. Although we have chosen this as our focus for the ES modelling exercise, alternative targets could also be selected and assessed.

Simulations

Our quantitative analysis employs the Social Policy Simulation Database and Model (SPSD/M) provided by Statistics Canada. The SPSPD/M contains a representative database of B.C. residents and their income information, as collected from the Canadian Income Survey. A drawback of using the SPSPD/M for these simulations is that the SPSPD/M does not adequately capture those receiving IA. Provincial social assistance is a modelled variable within the

SPSD/M and does not align well with actual IA caseload data, as it underestimates the number of people on IA. A further drawback of using the SPSPD/M is that it does not include behavioural responses. While an ES is designed to encourage entry into work and increased work, the SPSPD/M cannot tell us whether that will happen. For the following simulations, we use the 2020 values of the CWB.

Participation Bonus Added to the CWB

Many states in the U.S. top-up the EITC benefit. The top ups in 2020 range from 3% to 100% of the EITC depending on the state (Tax Policy Centre 2020). A top up to the CWB (as is done in the U.S.) would increase the benefit level—addressing one criticism of the CWB—making the CWB more adequate. However, a state-style top up would not extend the income range over which people would be eligible for the CWB. Additionally, a state-style top up would increase the phase-out rate of the CWB, thereby increasing the METR for all people receiving the CWB plus top up regardless of IA status.

To address these issues, instead of applying a U.S. state-style top up, we modify the format, calling it a *participation bonus*. In particular, during the phase-in and at the maximum benefit level, we apply a 25%, 50%, or 100% participation bonus to the CWB. Then, where the CWB is being phased out, we maintain the phase-out rate of 12% for the CWB plus participation bonus. Thus, during the phase-out, rather than having a percentage top up, there is a lump-sum top-up. By doing this, we extend the range of income over which the CWB plus participation bonus is received. Depending on the size of the participation bonus, those working full-time, full-year minimum-wage jobs could be eligible for the CWB plus participation bonus. Figure 2 provides a visualization of this CWB plus participation bonus, and Table 3 provides the associated parameters.

The participation bonus is provided solely to working-age childless single adults and childless couples (based on nuclear family definitions). As discussed previously, single parents and couples with children receive the Canada Child Benefit and B.C. Child Opportunity Benefit. Childless singles and childless couples have no comparable income program addressing poverty even though childless single adults have the highest rates and depths of poverty. Extending the participation bonus only to single childless adults and childless couples could affect its political feasibility, but this design was chosen for the cited reasons as well as to reduce costs.

From Table 3 and Figure 2, the break-even income for the CWB plus participation bonus is greater than the MBM poverty thresholds in B.C. Having the break-even income above the poverty threshold is a result of the higher benefit level and the phase-out rate. The higher benefit rate is required to move those with income below the poverty line above the poverty line. And the phase-out rate should not be increased in order to avoid even higher METRs (discussed below). Additionally, setting the break-even income above the poverty threshold means that single people working minimum-wage, full-time, full-year jobs will receive some portion of the CWB plus participation bonus.

Figure 2
CWB Plus Participation Bonus for Single Childless Adults

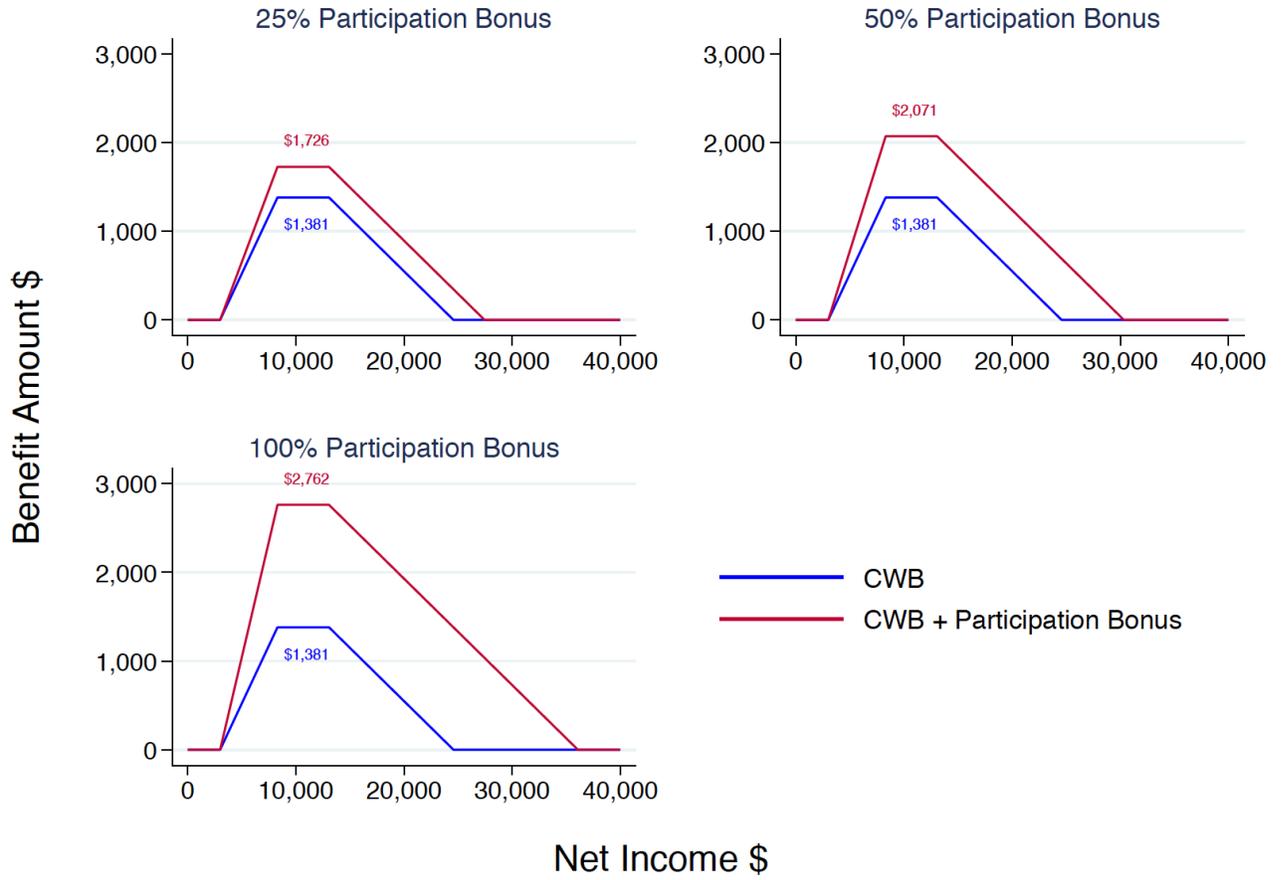


Table 3*Parameters for CWB Plus Participation Bonus for Single Childless Adults and Childless Couples*

	CWB		CWB + 25% Participation Bonus		CWB + 50% Participation Bonus		CWB + 100% Participation Bonus	
	Single adults	Childless couples	Single adults	Childless couples	Single adults	Childless couples	Single adults	Childless couples
Earnings minimum	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000
Phase-in rate	26%	26%	32.5%	32.5%	39%	39%	52%	52%
Net income where max. benefit reached	\$8,311	\$12,147	\$8,311	\$12,147	\$8,311	\$12,147	\$8,311	\$12,147
Max. benefit	\$1,381	\$2,380	\$1,726	\$2,975	\$2,071	\$3,569	\$2,762	\$4,759
Net income where phase-out begins	\$13,065	\$17,350	\$13,065	\$17,350	\$13,065	\$17,350	\$13,065	\$17,350
Phase-out rate	12%	12%	12%	12%	12%	12%	12%	12%
Break-even net income	\$24,573	\$37,181	\$27,449	\$42,138	\$30,326	\$47,095	\$36,080	\$57,011

Table 4 provides simulations for a CWB plus participation bonus for single childless adults and childless single couples at rates of 25%, 50%, and 100% (as presented in Figure 2 and Table 3). The participation bonuses would be funded solely by the provincial government (with the CWB continuing to be funded by the federal government). We provide cost estimates based on static simulations for tax year 2020. Table 4 includes recipients by both nuclear family and economic family, and poverty rates and depths defined for the economic family.¹⁰ We do it this way because the CWB is paid based on the nuclear family definition—only one person in the nuclear family can receive the CWB and the nuclear family income is used for assessment (e.g., tax filer income plus spouse/partner income). However, the MBM poverty thresholds and MBM poverty rates are calculated using the economic family definition to align with the definitions of poverty used by Statistics Canada. It should be noted that, although the participation bonus is given only to single childless adults and couples with no children—as based on the nuclear family definition—the number of couples with children based on the economic family definition who receive the participation bonus is greater than zero (as will be seen in Table 4). This is because people who are single adults in a nuclear family may be counted in an economic family “couple with children.” For example, a single person age 30 with no spouse/partner or dependent may live with their parents who have other dependents: they

¹⁰ The nuclear family consists of a married or common-law couple with or without children, or a single parent with a child or children. An economic family is defined as a group of two or more people who live in the same dwelling and are related to each other by blood, marriage, common law, or adoption. An unattached individual (who is referred to as a *single adult* in our economic family tables) is a person living either alone or with others to whom they are unrelated, such as roommates or a lodger. For example, two married couples living together where the wives are sisters would be counted as two nuclear families (e.g., each couple is a separate nuclear family) and belong to the same economic family.

will be counted as a single adult under the nuclear family definition and in a couple with children under the economic family definition.

From Table 4, as the participation bonus increases, so too does number of recipients and cost of the program while the poverty rate and depths both decrease. The decrease in the poverty rate is small relative to the increased cost. For example, a participation bonus of 100% would cost B.C. nearly half a billion dollars while lowering the overall poverty rate by less than one percentage point and the poverty rate for single childless adults by 1.58 percentage points. Among the groups eligible for the participation bonus, the absolute number lifted out of poverty is relatively small. Table 4 shows what can be termed the *poverty efficiency* for various sizes of the participation bonus measured as number of people lifted out of poverty per million dollars of program cost. The inverse of this figure is the annual cost per person lifted out of poverty; for example, a poverty efficiency of 21.39 means an annual cost per person of \$46,750.¹¹ Furthermore, as the participation bonus increases, the poverty efficiency decreases; the number of people living in poverty is decreasing more slowly than the cost is increasing. However, overall poverty efficiency is small, suggesting that this type of participation bonus as designed above is likely not the best program to introduce if the objective of the program is to reduce poverty.

To get a better understanding of how these CWB participation bonuses may affect work decisions, we next turn to their impacts on the marginal effective tax rate and participation tax rate for single adults.¹² A METR asks, for a marginal increase in earnings, by how much the person's taxes increase plus by how much do their benefits decrease as a proportion of that increase. For example, with a METR of 50% over a \$100 increase in earnings, for a \$100 increase in earnings, a single adult loses \$50 through a combination of higher taxes and lower benefits. Likewise, PTR measures, for a person with no earnings who is considering entering the paid workforce at given level of earnings, what proportion they will lose due to a combination of increased taxes and decreased benefits. For example, a PTR of 50% at \$10,000 annual earnings means that a person who goes from no work to employment at \$10,000/year will lose \$5,000 through these effects. METRs are said to affect the intensive margin—the decision to work a marginal amount more—and PTRs are said to affect the extensive margin—the decision of whether to work at all.

¹¹ This measure does not count the additional benefits received by others who were already above their poverty thresholds or who were elevated to a lesser depth of poverty but remained poor.

¹² The METR/PTR analysis for childless couples is largely the same and is excluded for the sake of brevity.

Table 4*CWB Plus Participation Bonus: Results*

		CWB, no bonus	CWB + 25% bonus	CWB + 50% bonus	CWB + 100% bonus
Recipients (nuclear family)	Total	294,758	337,988	390,865	498,419
	Single adults	209,640	240,536	278,871	359,370
	Single parents	33,255	33,255	33,255	33,255
	Couples, no children	21,038	33,372	47,914	74,969
	Couples with Children	30,825	30,825	30,825	30,825
Recipients (economic family)	Total	294,758	337,988	390,865	498,419
	Single adults	84,002	97,385	114,327	145,613
	Single parents	24,552	24,552	24,552	24,552
	Couples, no children	116,537	142,870	176,448	236,537
	Couples with children	69,667	73,181	75,538	91,717
Cost of CWB (to all nuclear family types)		\$293,542,772	\$293,542,772	\$293,542,772	\$293,542,772
Cost to B.C. of participation bonus (to single childless adults and childless couples)		N/A	\$83,523,952	\$184,794,044	\$451,310,744
Number of people living in poverty (economic family)	Total	336,437	334,650 (↓ 0.53%)	331,635 (↓ 1.43%)	323,207 (↓ 3.93%)
	Single adults	195,324	193,537 (↓ 0.91%)	193,452 (↓ 0.96%)	185,675 (↓ 4.94%)
	Single parents	16,376	16,376	16,376	16,376
	Couples, no children	65,064	65,064	62,134 (↓ 4.50%)	61,498 (↓ 5.28%)
	Couples with children	59,673	59,673	59,673	59,673
Poverty rate (economic family)	Total	11.03%	10.97% (↓ 0.54%)	10.88% (↓ 1.36%)	10.60% (↓ 3.90%)
	Single adults	31.99%	31.70% (↓ 0.91%)	31.69% (↓ 0.95%)	30.41% (↓ 4.94%)
	Single parents	24.96%	24.96%	24.96%	24.96%
	Couples, no children	4.60%	4.60%	4.39% (↓ 4.57%)	4.35% (↓ 5.43%)
	Couples with children	6.22%	6.22%	6.22%	6.22%
Average poverty depth (economic family)	Total	\$2,037	\$2,021 (↓ 0.74%)	\$2,006 (↓ 1.52%)	\$1,977 (↓ 2.94%)
	Single adults	\$3,271	\$3,236 (↓ 1.07%)	\$3,200 (↓ 2.17%)	\$3,131 (↓ 4.28%)
	Single parents	\$1,951	\$1,951	\$1,951	\$1,951
	Couples, no children	\$1,076	\$1,069 (↓ 0.65%)	\$1,064 (↓ 1.12%)	\$1,055 (↓ 1.95%)
	Couples with children	\$1,502	\$1,502	\$1,502	\$1,502
Poverty efficiency per million \$ spent (number of people lifted out of poverty/cost of the participation bonus in millions)		N/A	21.39	25.99	29.31

To calculate METRs and PTRs for our purposes, all federal and provincial personal income taxes are used, including basic non-refundable tax credits, such as the basic personal amount, that depend solely on income. Excluded are any specialized credits or deductions, such as the Medical Credit and Disability Tax Credit, which have additional eligibility requirements (other than just income). As for benefits, we include refundable tax credits delivered through the tax system that are solely based on income, such as the GST/HST Tax

Credit, the B.C. Climate Action Tax Credit, the B.C. Sales Tax Credit, and the CWB.¹³ For each of these tax and transfer programs, tax year 2019 parameters were used except for the CWB, for which the tax year 2020 was used. The non-IA figures include all taxes and income transfers except for IA. The IA Client figures includes all taxes and income transfers plus IA. For the IA figures, the earnings exemptions proposed for 2021 are used alongside benefit amount and phase-out rates that were effective as of April 2019. The blue line in the Figures 3 and 4 is the METR/PTR for the 2020 CWB (not including the participation bonus). The red line in these figures is the METR/PTR that includes the CWB plus participation bonus.

Panel A of Figure 3 shows the METR for the CWB participation bonus for non-IA single adults. The participation bonus reduces the METR for non-IA clients over the range of earnings where the CWB plus participation bonus is phased in (from \$3,000 to \$8,311). This is because the phase-in rate of the CWB plus participation bonus is greater than the phase-in rate of the CWB alone. From earnings of about \$8,311 until the original break-even point of the CWB (about \$24,600), the METR for the CWB and the METR for the CWB plus participation bonus are identical. For earnings between the break-even point for the CWB (e.g., above \$24,600) and the break-even point for the CWB plus participation bonus, the METR is higher with the participation bonus due to the increased phase-out range.

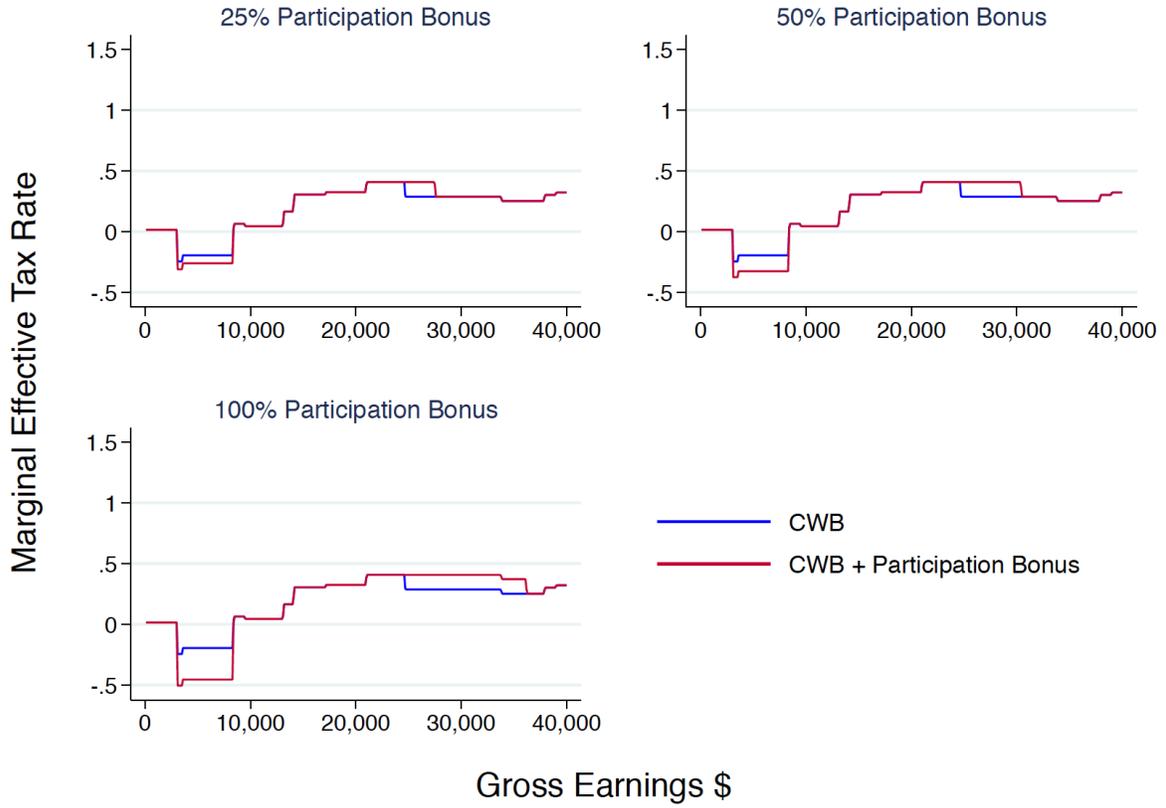
We next turn to the METR and PTR results for IA single clients as shown in Panel B of Figure 3. Although the CWB plus participation bonus does somewhat lower their welfare wall, it does not do so over the entire range of the wall. For single IA clients with earnings between \$8,311 and \$16,000, the METR for the CWB plus participation bonus remains the same as without the bonus at rates of 100% to 115%.

¹³ The Canada Child Benefit and B.C. Child Opportunity Benefit are omitted as we are looking at people/couples without children. In further analysis, the CCB and B.C. COB are included when families with children are included in the analysis.

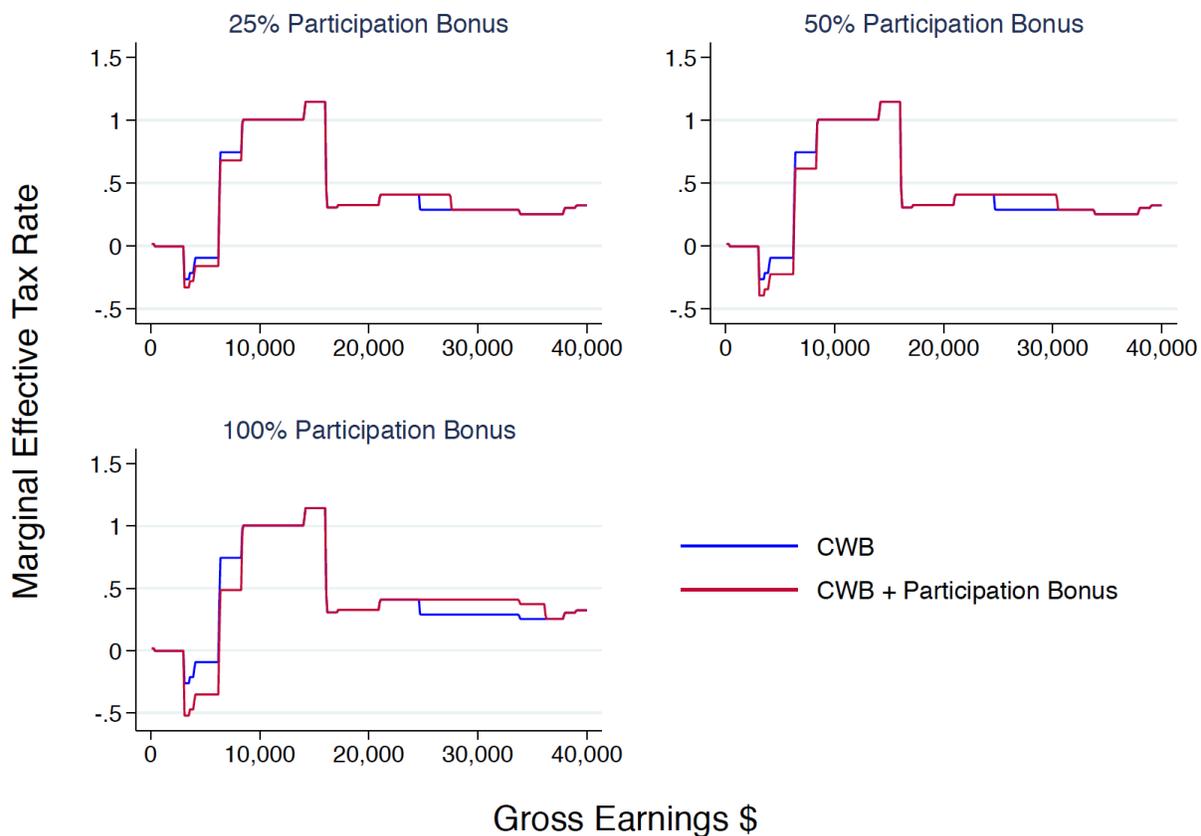
Figure 3

METR: CWB Plus Participation Bonus, Single Childless Adults

Panel A: B.C. Residents not Receiving Income Assistance



Panel B: B.C. Residents Receiving Income Assistance



Error! Reference source not found. presents the participation tax rate patterns for people who do not receive income assistance (panel A) and those who do receive income assistance (panel B). We see that as the participation bonus increases, the PTR drops further and further below the PTR for the original CWB without the participation bonus. This is particularly important for IA clients given that their PTR is higher at low levels of earnings than for people not receiving income assistance (due to the phase-out of IA benefits). However, these lower PTRs are only effective if people both receiving and not receiving IA can understand the effect of the CWB and how it reduces the loss of IA benefits (or can add to their take-home earnings)—an important reason for making the CWB more prominent.

Figure 4

PTR: CWB Plus Participation Bonus, Single Childless Adults

Panel A: B.C. Residents not Receiving Income Assistance

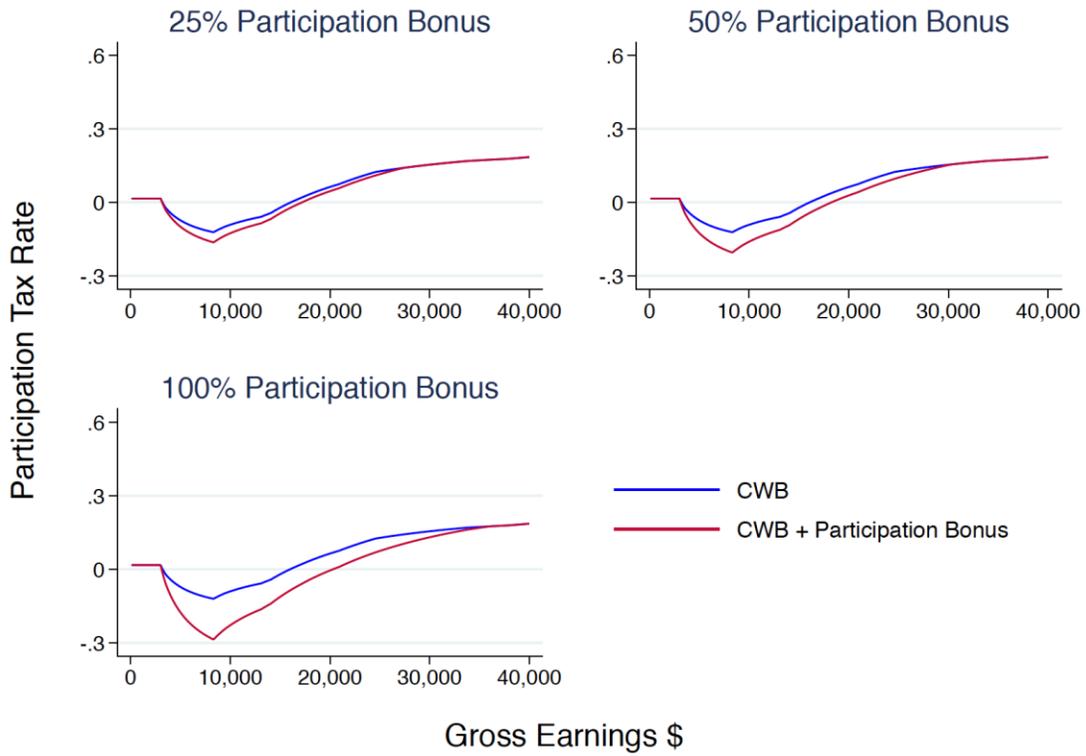
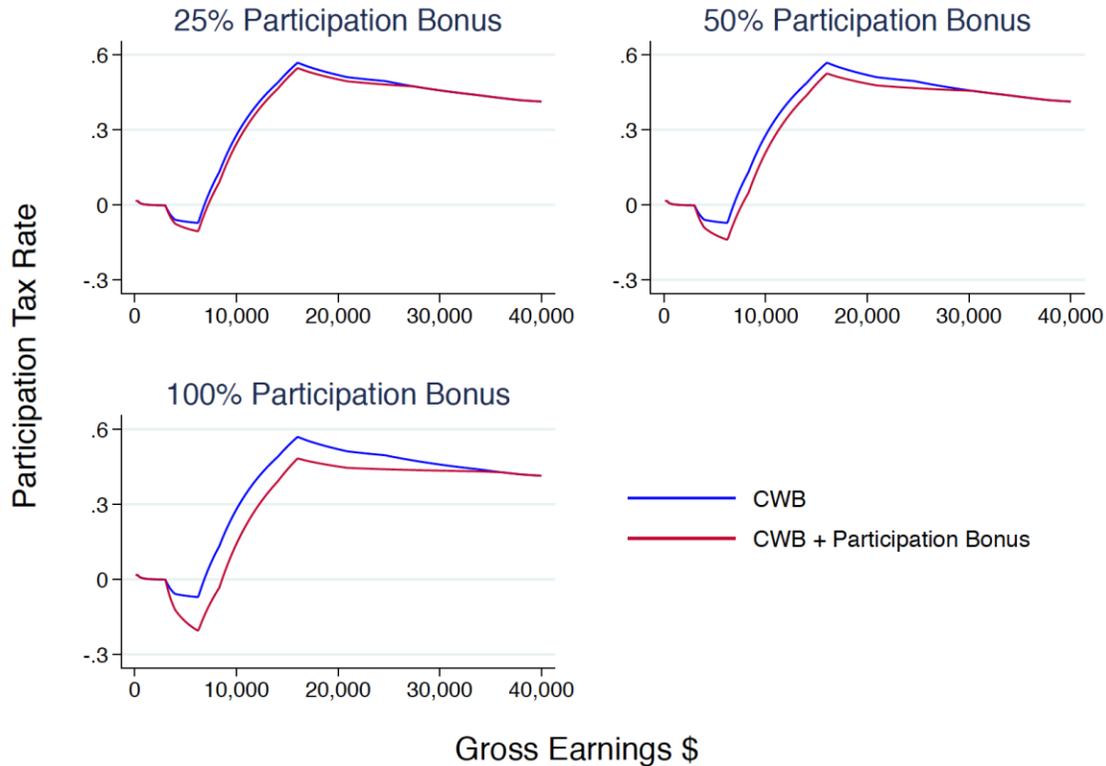


Figure 5 con't

PTR: CWB Plus Participation Bonus, Single Childless Adults

Panel B: B.C. Residents Receiving Income Assistance



In summary, a participation bonus or simple top-up to the CWB may not be the best solution to addressing the issues and concerns highlighted earlier. A participation bonus with the objective of reducing poverty is not adequate in the sense that single childless adults with earnings but still below the poverty line are not being targeted specifically to be moved over the poverty line. In fact, we see very little decrease in the poverty rates and the poverty depths for single childless adults and childless couples despite high costs of the program. Moreover, the participation bonus leaves the welfare wall for people who receive IA largely intact.

Reconfiguring the Canada Workers Benefit

As seen in the previous section, a CWB plus participation bonus, holding constant the current CWB minimum earnings threshold and phase-out rates, did not have a large impact on the so-called poor high earners and had little effect on poverty rates, poverty depths, and METR. In this section, we consider a couple of reconfigurations of the CWB with a focus on reducing the METR for low-income earners (particularly IA clients), and making work more profitable for poor high earners. Any provincial reconfiguration scheme is constrained to be cost-neutral for the federal government, which, as we will show, limits its potency as a poverty-reduction strategy.

For these reconfigurations, we double the minimum threshold for earnings from \$3,000 to \$6,000, the point where the earnings exemption ends for employable people on Temporary Assistance and IA benefits begin to be phased out. In its reconfiguration prior to 2019, B.C. chose to increase the WITB minimum earnings threshold from \$3,000 to \$4,750, presumably to provide greater reach and to increase incentives for working more than short-time work (Battle and Torjman 2012). Increasing the CWB minimum earnings threshold to \$6,000 would re-introduce this focus on working more full time, allowing more poor high earners to be reached. The phase-in rate and the maximum benefit is then adjusted so that the maximum CWB benefit is reached at the level of net income where IA benefits are fully phased out, which reduces the METR over the welfare wall for people receiving income assistance.

In the previous section, we considered a participation bonus solely for single childless adults and childless couples. Here, we reconfigure the CWB for both childless people/families and people/families with children, with the minimum earnings threshold increased from \$3,000 to \$6,000 for all family types. Although there is often asymmetry in policy design (e.g., providing the CCB to families with children only), this asymmetry is acceptable only if it supports an acceptable goal (e.g., addressing horizontal equity and/or reducing the poverty rates of single parents). No similar justification arises for increasing the CWB minimum earnings threshold solely for one family type, so we increase the threshold for all family types.

We consider two alternative CWB reconfigurations with different objectives. The goal of reconfiguration 1 is to achieve the highest maximum benefit for single adults while maintaining cost neutrality and meeting the benchmarks described above. The purpose of reconfiguration 2 is to increase the range of income over which people are eligible for the CWB (extending the break-even point). When maintaining cost neutrality, a trade-off arises between increasing the maximum benefit and extending the break-even point of the CWB. Table 5 and Figure 6 present the design parameters of these reconfigurations.

Table 5
CWB Reconfiguration Parameters

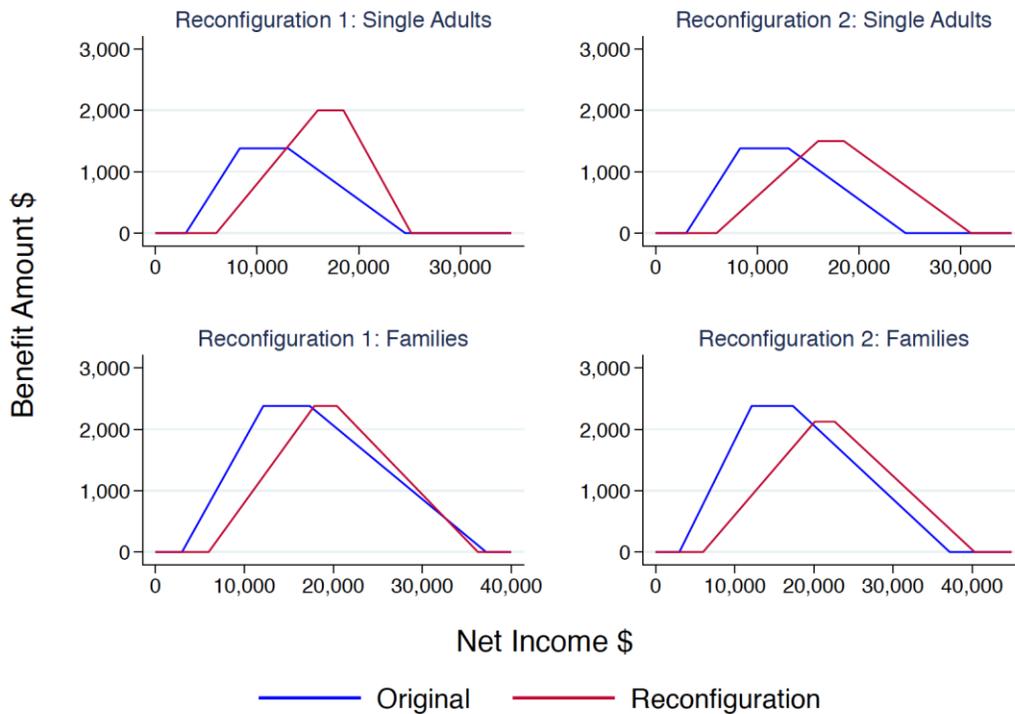
	CWB		Reconfiguration 1		Reconfiguration 2	
	Single childless adults	Families	Single childless adults	Families	Single childless adults	Families
Earnings minimum	\$3,000	\$3,000	\$6,000	\$6,000	\$6,000	\$6,000
Phase-in rate	26%	26%	20%	20%	15%	15%
Net income where max. benefit reached	\$8,311	\$12,147	\$15,981	\$17,898	\$15,981	\$20,135
Max. benefit	\$1,381	\$2,380	\$2,000	\$2,380 ^a	\$1,500	\$2,123 ^b
Net income where phase-out begins	\$13,065	\$17,350	\$18,500 ^c	\$20,398 ^c	\$18,500 ^c	\$22,635
Phase-out rate	12%	12%	30%	15%	12%	12%
Break-even net income	\$24,573	\$37,181	\$25,167	\$36,262	\$31,000	\$40,330

Note. ^a Held at the status quo level to maintain cost neutrality. Variants using the single adult max. benefit*sqrt(2) produced major cost overruns.

^b Chosen by calculating SQRT(2)*1500.

^c Chosen by adding about \$2,500 to net income where maximum benefit is reached.

Figure 6
CWB Reconfiguration Parameters



From Table 5 and Figure 5, we see that both reconfigurations shift the CWB to the right. In reconfiguration 1, single childless adults receive a higher maximum benefit amount, and for both families and single childless adults, the break-even net income is not changed by much

(due to cost neutrality constraints); this results in a higher phase-out rate for both groups. In reconfiguration 2, the CWB is again shifted to the right, but this time the break-even income has also been shifted. Due to the distribution of people over net income, reductions in the maximum benefit for families and in the range over which the maximum benefit is received were required to maintain cost neutrality.

Table 6
CWB Reconfiguration by Family Type: Results

		CWB (status quo)	CWB Reconfiguration 1	CWB Reconfiguration 2
Recipients (nuclear family)	Total	294,758	261,212	336,860
	Single adults	209,640	185,202	244,532
	Single parents	33,255	30,445	35,677
	Couples, no children	21,038	19,648	27,946
	Couples with children	30,825	25,917	28,705
Recipients (economic family)	Total	294,758	261,212	336,860
	Single adults	84,002	77,948	106,036
	Single parents	24,552	22,901	27,820
	Couples, no children	116,537	103,284	137,302
	Couples with children	69,667	57,079	65,702
Cost of CWB		\$293,542,772	\$295,407,286	\$292,139,130
Number of people living in poverty (economic family)	Total	336,437	331,644 (↓ 1.42%)	333,868 (↓ 0.76%)
	Single adults	195,324	191,274 (↓ 2.07%)	193,622 (↓ 0.87%)
	Single parents	16,376	17,377 (↑ 6.11%)	17,377 (↑ 6.11%)
	Couples, no children	65,064	59,512 (↓ 8.53%)	59,388 (↓ 8.72%)
	Couples with children	59,673	63,481 (↑ 6.38%)	63,481 (↑ 6.38%)
Poverty rate (economic family)	Total	11.03%	10.98% (↓ 0.45%)	10.95% (↓ 0.72%)
	Single adults	31.99%	31.33% (↓ 2.06%)	31.72% (↓ 0.84%)
	Single parents	24.96%	26.49% (↑ 6.13%)	26.49% (↑ 6.13%)
	Couples, no children	4.60%	4.21% (↓ 8.48%)	4.20% (↓ 8.70%)
	Couples with children	6.22%	6.62% (↑ 6.43%)	6.62% (↑ 6.43%)
Average poverty depths (economic family)	Total	\$2,037	\$2,039 (↑ 0.01%)	\$2,047 (↑ 0.49%)
	Single adults	\$3,272	\$3,266 (↓ 0.18%)	\$3,288 (↑ 0.49%)
	Single parents	\$1,951	\$2,014 (↑ 3.23%)	\$2,052 (↑ 5.18%)
	Couples, no children	\$1,076	\$1,079 (↑ 0.28%)	\$1,076
	Couples with children	\$1,502	\$1,503 (↑ 0.07%)	\$1,500 (↓ 0.13%)

Table reports the cost and poverty results for reconfigurations 1 and 2. Both reconfigurations show a small decline in the total poverty rate driven by declines in the poverty rate for couples with no children and single childless adults. However, the poverty rates increase for single parents and couples with children. The poverty rate declines for couples with no children because, as noted, poverty rates are measured based on economic family whereas the CWB is administered based on nuclear family income. A single childless adult (e.g., a person who is 30 years of age and has no partner or dependents) who is living with their parent(s) is their own nuclear family (single childless adult) but is in the same economic family as their parents who are a couple with no children (under the age of 24). The single adult may

receive the CWB and be counted in the poverty statistics for the economic family type of “couple, no children.”

The increase in the poverty rate for single parents and couples with children is concerning but not surprising in view of the cost-neutrality constraint. In both reconfigurations, fewer families are eligible for the CWB, and in reconfiguration 2, the maximum benefit for families has been reduced. Also of concern in these reconfigurations is the increase in the poverty depth across all family types, but, again, not surprising. The CWB reconfigurations reduce the CWB benefit amount for those with very low earnings, particularly those with earnings below the MBM poverty threshold (around \$20,000 for a single person). Reconfiguration 1 increases the CWB benefit for some single childless adults, but few people actually receive the higher benefit. Given the reduction in the CWB benefit at lower levels of earnings, this helps explain why poverty depths are higher.

Compared to the participation bonus, a CWB reconfiguration can be a cost-effective tool for reducing poverty. With the participation bonus, the number of people in poverty was reduced by 3.9% at a cost of nearly half a billion dollars borne by the province. In the CWB reconfigurations presented, the number of people living in poverty can be reduced by 0.5% at no cost. However, even when there is no cost to the government, any CWB reconfiguration that maintains cost neutrality will have gainers and losers (unlike a participation bonus which has only gainers). Who gains and who loses can be shifted around, but the fact remains that someone loses in order to make one group better off while maintaining cost neutrality.

Finally, Figures 6 through 9 show the marginal effective tax rate and participation tax rate patterns for reconfigurations 1 and 2, for people both receiving and not receiving income assistance and single adults and single parents.¹⁴ The blue line is the METR/PTR if the CWB does not change and the red line is the METR/PTR with the CWB reconfigurations.

Beginning with reconfiguration 1, where the minimum earnings threshold was increased from \$3,000 to \$6,000 and the maximum benefit for single adults was increased from \$1,380.90 to \$2,000, we observe:

- The METR for single childless adults who are receiving IA declines over the range where IA benefits are being clawed back by about 20 percentage points (e.g., from 100% down to 80% and from 114% at its maximum to 94%). That is, the 100% claw back rate of phase-out benefits is offset by the phase-in rate of the CWB reconfiguration. For single parents who are receiving IA, the METR also declines over some of the range where their IA benefits are being clawed back by 100% and that is being offset by the CWB reconfiguration (the CWB reconfiguration phase-in does not span the entire range of earnings over which single parent IA is being clawed back). Again, we stress here that although the CWB can be reconfigured to reduce the METR faced by people who receive IA, a more effective and transparent method of reducing the welfare wall would be to reduce the phase-out rate of IA benefits.

¹⁴ Couples with and without children are omitted from the main analysis for brevity's sake. Their METR and PTR patterns are similar to their single counterparts.

- The PTR remains the same or higher for single parents, both for people receiving and not receiving IA. That is not surprising as the CWB reconfiguration for single parents did not change much from the original CWB.
- The PTR for single adults is higher over low earnings ranges (e.g., from about \$3,000 to \$11,500) where the reconfigured CWB has a lower benefit level than the original CWB. The PTR is then lower for earnings over about \$11,500 (where the reconfigured CWB benefit level is higher than the original CWB benefit level) until the break-even earnings are reached, around \$25,300. Together, this may have a negative effect on labour force participation over lower ranges of earnings and a positive labour market effect on mid- to high-level ranges of earnings.

For Reconfiguration 2, we see similar results for the METR/PTR; however, the differences between the reconfigured CWB and original CWB are smaller than in Reconfiguration 1. Additionally, some shifting arises in the earnings level over which the METR/PTR is higher or lower.

Figure 7

CWB Reconfiguration 1: METR

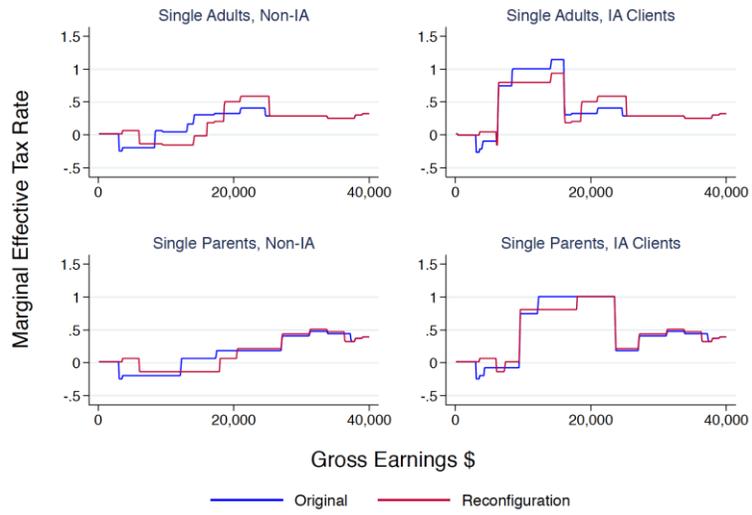


Figure 8

CWB Reconfiguration 2: METR

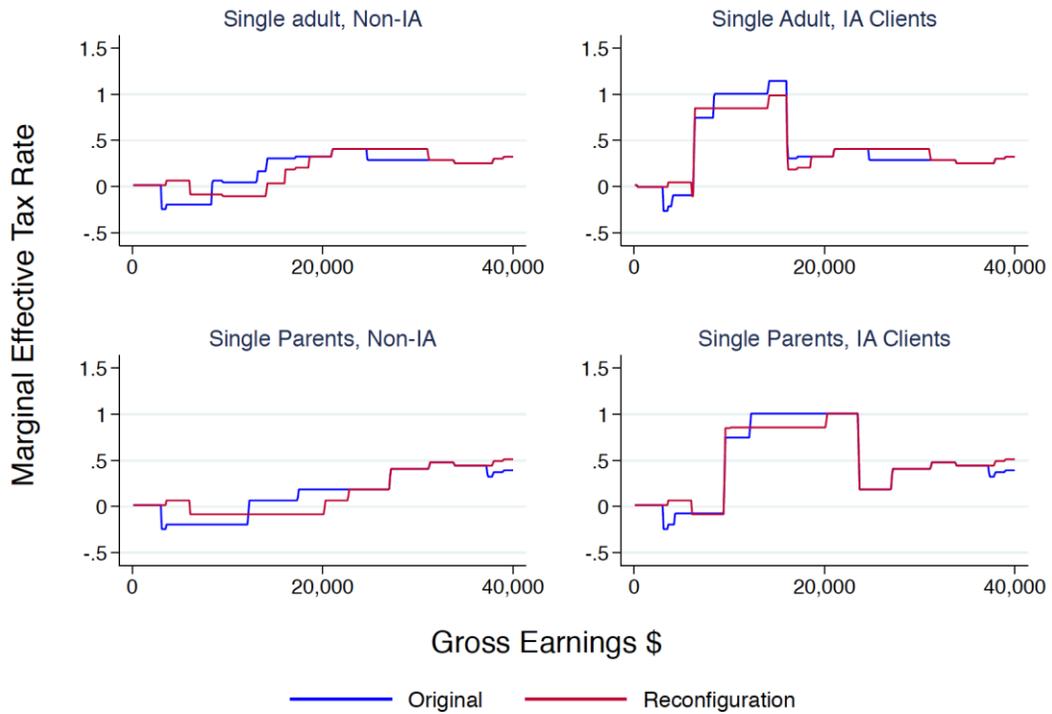


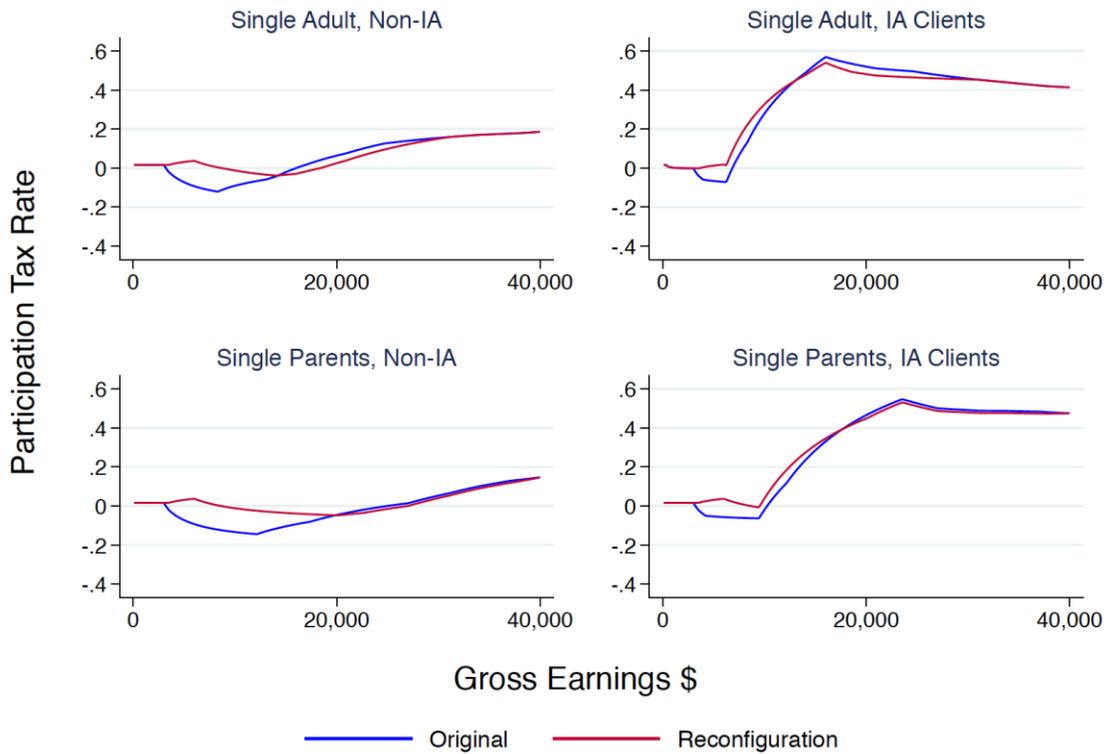
Figure 9

CWB Reconfiguration 1: PTR



Figure 10

CWB Reconfiguration 2: PTR



In summary, a reconfiguration of the CWB that increases the minimum earnings threshold to \$6,000 to address the phase-out of IA benefits and focuses on improving the CWB for single childless adults by either giving them a higher benefit level or extending the range of net income over which they are eligible for CWB has somewhat lacklustre results although they can be achieved at no cost to the federal or provincial government. These reconfigurations decrease the total poverty rate and the poverty rate of single adults by only a small amount, and, dependent on how the family CWB parameters are altered to maintain cost neutrality, the poverty rates for single parents and couples with children increase. Furthermore, poverty depths increase for all family types. A redeeming aspect of these reconfigurations is their ability to decrease the METR for people receiving income assistance over the range of earnings where IA is being clawed back by 100%. However, the PTR is higher over lower earnings and does not decrease by much over higher earnings levels (for people both receiving and not receiving IA).

CWB Reconfiguration Plus Top-up

Previously, we saw that a participation bonus overlying the current CWB configuration could somewhat reduce poverty rates and depths without creating any losers. However, this would come with a high price tag to the B.C. treasury. We also saw that a reconfiguration of the CWB could minimally reduce overall poverty at no cost to the provincial or federal government, but for some family types poverty rates would increase and, for all family types, poverty depths would increase. In this section, we combine both a CWB reconfiguration and a top-up in order to examine whether a combination of the approaches can improve any one applied alone. As before, we focus on rewarding poor high earners for work (particularly single childless adults) and reducing the welfare wall for people receiving IA (or, minimally, not making it worse).

As discussed earlier, around 25% of childless single adults with income below the poverty line have a wage/salary of \$16,000 or more. After all taxes and transfers are accounted for, the average disposable income is around \$16,532. Part of this disposable income comes from the CWB—a single childless adult with earnings of \$16,000 receives a CWB of about \$1,031. To move a single childless adult up to a disposable income that is at least the minimum MBM poverty threshold (in 2018), for example, a disposable income of \$21,000,¹⁵ an additional \$4,468 is needed. This indicates that a total CWB + top-up of \$5,499 (= \$1,031 + \$4,468) is required to move a childless single adult making \$16,000 in earnings to at least the MBM poverty threshold.

We run simulations for moving those with \$16,000 of earnings to at least the MBM poverty threshold. We supplement this simulation with simulations that focus on moving those with other (higher) levels of earnings to the MBM threshold for comparison. Specifically, we look at those with earnings of \$16,000, \$18,000, and \$20,000—the target level of earnings. As this target level of earnings increases, the cost to the provincial government of moving those with that level of earnings to the MBM poverty threshold decreases; however, the decline in the poverty rate will also decrease.

¹⁵ The MBM poverty threshold in 2018 in B.C. is between \$20,732 and \$24,339, dependent on place of residence.

For these simulations, a two-step process is applied. In the first step, the CWB is reconfigured to maintain cost neutrality to the federal government. As in the previous section on the reconfiguration of CWB, the minimum earnings threshold is increased to \$6,000, the level of earnings at which IA benefits begin to be phased out. The CWB phase-out income threshold is set to the level of net income that is being targeted (e.g., \$16,000). All other CWB parameters are reconfigured to maintain cost neutrality. The reconfiguration is applied to everyone—both singles and couples with and without children.

In the second step, a top-up is applied to the CWB. We use a U.S. state-style top-up that is a percentage of the CWB. As discussed above, this has drawbacks including increasing the phase-out rate, thereby increasing the METR over the earnings where the CWB plus top-up is phased out. However, applying this style of top-up instead of a participation bonus, as previously stated, reduces the overall costs of the top-up by restricting eligibility. To determine the amount of the top-up, first the top-up for single childless adults was determined based on the gap between the target earnings and the MBM threshold. Couples without children received the same percentage top-up as single childless adults, a choice made to reflect the relative lack of benefit programs available to those without children. The top-up to single childless adults and childless couples is larger than to single parents and couples with children, in recognition that the latter family types also receive child benefits. Finally, the top-up for single parents and couples with children was chosen to ensure that their maximum benefit was equal to the maximum benefit received by single childless adults. These choices could be done a multitude of ways, but these particular top-ups were chosen as they are justifiable for the current policy application.

Tables 7, 8, and 9 along with Figures 10, 11, and 12 report the CWB reconfiguration plus top-up parameter values by the target level of earnings. The tables break down the simulation steps into the two steps noted above—the reconfiguration and the top-up. The new CWB plus top-up for targeted earnings of \$16,000 leaves nearly all CWB recipients better off than before except for those with earnings between about \$3,000 and \$8,000—they receive no or a lower benefit amount. As the target level of earnings increase, the range of earnings over which there are people who are worse off increases. For a target earnings of \$18,000, those with earnings between \$3,000 and about \$10,000 receive a smaller benefit or no benefit, and for target earnings of \$20,000 those with earnings between \$3,000 and about \$12,000 receive a smaller benefit or no benefit. In all scenarios, the break-even income for single childless adults is around what a minimum-wage full-time, full-year worker would earn.

Table 6*CWB Reconfiguration Plus Top-up, Target Earnings \$16,000, Parameters*

	CWB (status quo)		Reconfiguration (Step 1)		Reconfiguration + top-up (Step 2)		
	Single childless adults	Families	Single childless adults	Families	Single childless adults (267% top-up)	Childless couples (267% top-up)	Single parents and couples with children (159.5% top-up)
Earnings minimum	\$3,000	\$3,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000
Phase-in rate	26%	26%	16.3%	16.3%	59.8%	59.8%	42.3%
Net income where max. benefit reached	\$8,311	\$12,147	\$15,200	\$19,014	\$15,200	\$19,014	\$19,014
Max. benefit	\$1,381	\$2,380	\$1,500	\$2,121	\$5,505	\$7,785	\$5,505
Net income where phase-out begins	\$13,065	\$17,350	\$16,000	\$19,814	\$16,000	\$19,814	\$19,814
Phase-out rate	12%	12%	9.3%	9.3%	34.1%	34.1%	24.1%
Break-even net income	\$24,573	\$37,181	\$32,129	\$42,624	\$32,129	\$42,624	\$42,624

Table 7*CWB Reconfiguration Plus Top-up, Target Earnings \$18,000, Parameters*

	CWB (status quo)		Reconfiguration (Step 1)		Reconfiguration + top-up (Step 2)		
	Single childless adults	Families	Single childless adults	Families	Single childless adults (160% top-up)	Childless couples (160% top-up)	Single parents and couples with children (83.85% top-up)
Earnings minimum	\$3,000	\$3,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000
Phase-in rate	26%	26%	16.3%	16.3%	42.4%	42.4%	30%
Net income where max. benefit reached	\$8,311	\$12,147	\$15,200	\$19,014	\$15,200	\$19,012	\$19,014
Max. benefit	\$1,381	\$2,380	\$1,500	\$2,121	\$3,900	\$5,515	\$3,900
Net income where phase-out begins	\$13,065	\$17,350	\$18,000	\$21,814	\$18,000	\$21,814	\$21,814
Phase-out rate	12%	12%	12%	12%	31.2%	31.2%	22.1%
Break-even net income	\$24,573	\$37,181	\$30,500	\$39,492	\$30,500	\$39,492	\$39,492

Table 8*CWB Reconfiguration Plus Top-up, Target Earnings \$20,000, Parameters*

	CWB (status quo)		Reconfiguration (Step 1)		Reconfiguration + top-up (Step 2)		
	Single childless adults	Families	Single childless adults	Families	Single childless adults (53.3% top-up)	Childless couples (53.3% top-up)	Single parents and couples with children (8.4% top-up)
Earnings minimum	\$3,000	\$3,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000
Phase-in rate	26%	26%	13.6%	13.6%	20.9%	20.9%	14.8%
Net income where Max. benefit reached	\$8,311	\$12,147	\$17,000	\$21,552,13	\$17,000	\$21,552,13	\$21,552,13
Max. benefit	\$1,381	\$2,380	\$1,500	\$2,121	\$2,300	\$3,252	\$2,300
Net income where phase-out begins	\$13,065	\$17,350	\$20,000	\$24,552	\$20,000	\$24,552	\$24,552
Phase-out rate	12%	12%	14%	14%	21.46%	21.46%	15.18%
Break-even net income	\$24,573	\$37,181	\$30,714	\$39,704	\$30,714	\$39,704	\$39,704

Figure 11
CWB Reconfiguration Plus Top-up, Target Earnings \$16,000

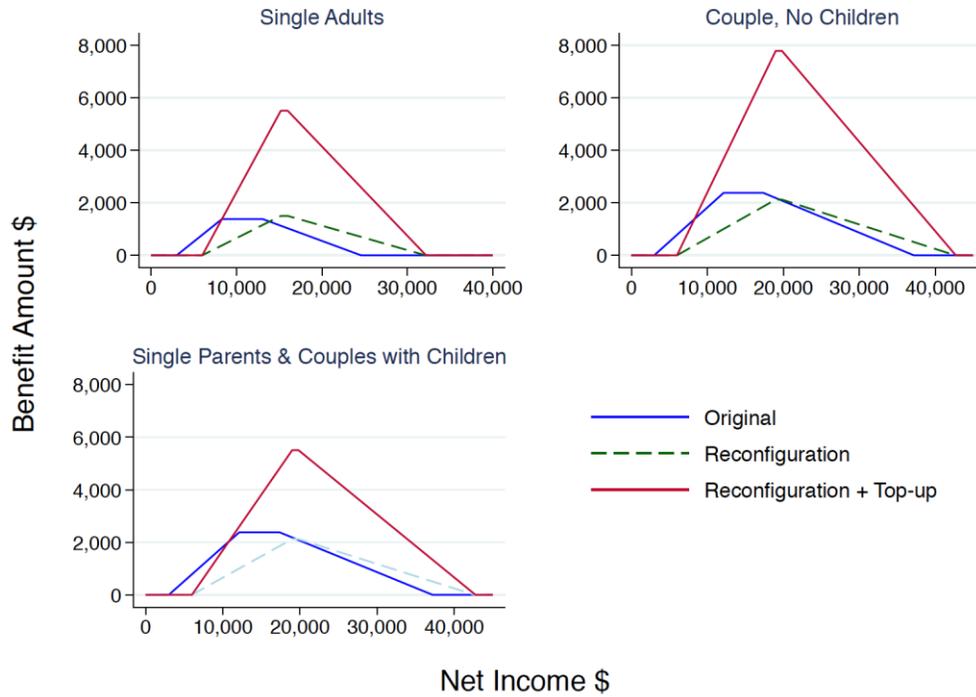


Figure 12
CWB Reconfiguration Plus Top-up, Target Earnings \$18,000

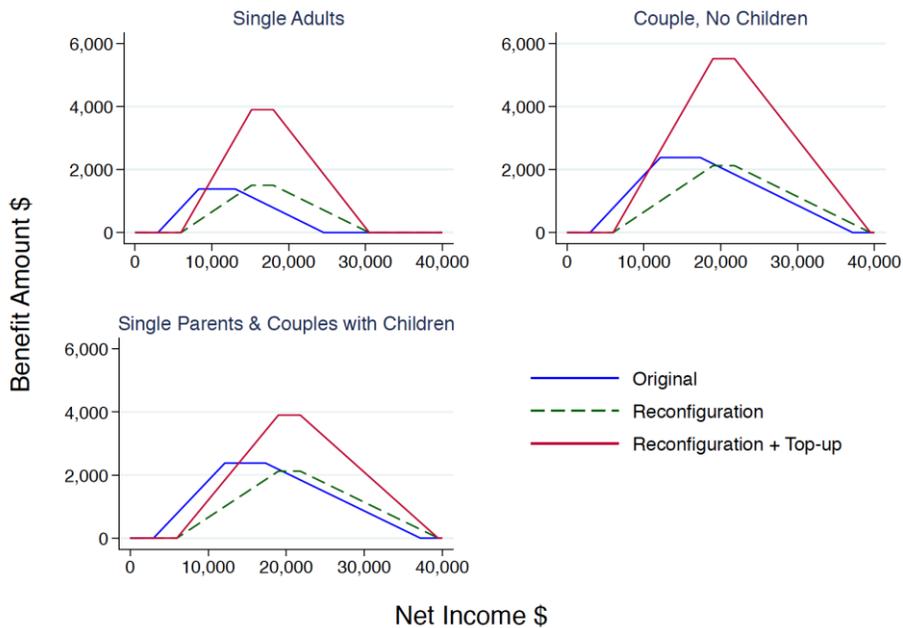


Figure 13

CWB Reconfiguration Plus Top-up, Target Earnings \$20,000

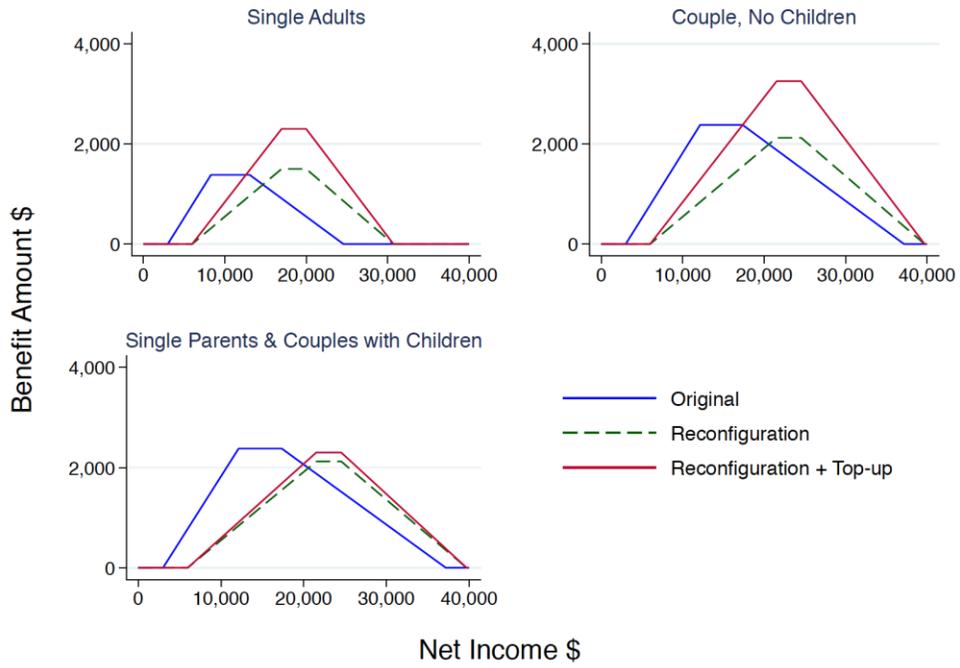


Table 9
CWB Reconfiguration Plus Top-up: Results

		CWB (status quo)	CWB Reconfiguration + top-up, target earnings \$16,000	CWB Reconfiguration + top-up, target earnings \$18,000	CWB Reconfiguration + top-up, target earnings \$20,000
Recipients (nuclear family)	Total	294,758	368,202	326,359	328,573
	Single adults	209,640	262,201	235,006	236,120
	Single parents	33,255	38,537	35,131	35,631
	Couples, no children	21,038	37,541	27,748	28,348
	Couples with children	30,825	29,914	28,474	28,474
Recipients (economic family)	Total	294,758	368,202	326,359	328,573
	Single adults	84,002	113,886	103,588	104,441
	Single parents	24,552	30,306	27,274	27,774
	Couples, no children	116,537	154,843	131,994	132,849
	Couples with children	69,667	69,167	63,503	63,509
Cost of CWB	Reconfiguration (federal portion)	\$293,542,772	\$290,568,958	\$288,051,406	\$294,779,978
	Top-up (provincial portion)	--	\$684,176,150	\$396,157,954	\$116,676,448
Number of people living in poverty (economic family)	Total	336,437	292,138 (↓ 13.17%)	303,150 (↓ 9.89%)	323,574 (↓ 3.82%)
	Single adults	195,324	171,123 (↓ 12.39%)	177,375 (↓ 9.19%)	184,112 (↓ 5.74%)
	Single parents	16,376	15,391 (↓ 6.01%)	16,105 (↓ 1.65%)	17,229 (↑ 5.21%)
	Couples, no children	65,064	55,559 (↓ 14.61%)	55,797 (↓ 14.24%)	58,752 (↓ 9.70%)
	Couples with children	59,673	50,065 (↓ 16.10%)	53,873 (↓ 9.72%)	63,481 (↑ 6.38%)
Poverty efficiency per million \$ spent (number of people lifted out of poverty/cost of the top-up in millions)		N/A	64.75	84.02	110.25
Poverty rate (economic family)	Total	11.03%	9.58% (↓ 13.15%)	9.94% (↓ 9.88%)	10.61% (↓ 3.81%)
	Single adults	31.99%	28.03% (↓ 12.37%)	29.05% (↓ 9.19%)	30.16% (↓ 5.72%)
	Single Parents	24.96%	23.46% (↓ 6.01%)	24.55% (↓ 1.64%)	26.27% (↑ 5.24%)
	Couples, No Children	4.60%	3.93% (↓ 14.57%)	3.95% (↓ 14.13%)	4.16% (↓ 9.56%)
	Couples with Children	6.22%	5.22% (↓ 16.08%)	5.62% (↓ 9.64%)	6.62% (↑ 6.43%)
Average poverty depths (economic family)	Total	\$2,037	\$1,948 (↓ 4.37%)	\$1,981 (↓ 2.75%)	\$2,028 (↓ 0.44%)
	Single adults	\$3,272	\$3,103 (↓ 5.17%)	\$3,160 (↓ 3.42%)	\$3,248 (↓ 0.73%)
	Single Parents	\$1,951	\$1,816 (↓ 6.92%)	\$1,914 (↓ 1.90%)	\$2,053 (↑ 5.22%)
	Couples, No Children	\$1,076	\$1,056 (↓ 1.86%)	\$1,063 (↓ 1.21%)	\$1,070 (↓ 0.56%)
	Couples with Children	\$1,502	\$1,448 (↓ 3.60%)	\$1,469 (↓ 2.20%)	\$1,494 (↓ 0.53%)

Table 9 presents the results of the three CWB reconfigurations plus top-ups (targeting earners making \$16,000, \$18,000, and \$20,000). The CWB reconfiguration plus top-up targeting earners making \$20,000 is a somewhat problematic model; poverty rates and poverty depths increase for some family types, namely single parents and couples with children, while decreasing for single childless adults and couples with no children. This is due to the constraints imposed and the distribution of earners. As discussed above, the poor high earners making \$20,000 were targeted as were people receiving IA, meaning that the minimum earnings threshold for the reconfiguration was maintained at \$6,000 (where IA begins to be phased out). Due to the large range of income over which the CWB reconfiguration was spread and the distribution of earners, the plateau region of the CWB had to be kept minimal, so that the phase-in rate was lowered. Likewise, the phase-out rate was increased to maintain cost neutrality. Had we begun the CWB reconfiguration at a higher earnings threshold, it is possible that the poverty rates would have been reduced more (although poverty depths might have increased). This again illustrates the trade-offs inherent in designing an earnings supplement program. Due to its increased poverty rates for single parents and couples with children, we eliminate the CWB reconfiguration with top-up targeting earners making \$20,000 as a preferred model.

The CWB reconfiguration plus top-up targeting earners making \$16,000 significantly reduces the poverty rate and is the model with the largest impact on poverty depths across all family types; however, it comes at a cost of \$684 million to the province and has the lowest poverty efficiency. Comparatively, the CWB reconfiguration plus top-up targeting earners at \$18,000 also decreases the poverty rate and poverty depths across all family types by a large amount (albeit less than the \$16,000 target model), and it comes at a cost to the province of almost \$400 million with a better poverty efficiency. For these reasons, this model is the preferred variant of the three CWB reconfigurations plus top-ups.

Comparing the CWB reconfiguration plus top-up targeting earners making \$18,000 to the 100% participation bonus in the previous section, we see that the former approach has a much larger effect on the poverty rate at a lower cost and has better poverty efficiency. The CWB reconfiguration plus top-up targeting earners making \$18,000 can also be compared to the reconfiguration (see the section above on the reconfiguration of CWB). Although the reconfiguration was costless, it increased the poverty rate for some family types. The CWB reconfiguration plus top-up targeting earners making \$18,000, while more costly than a reconfiguration alone, reduces the poverty rate for all family types.

Although the CWB reconfiguration plus top-up targeting earners making \$18,000 performs better compared to the 100% participation bonus with respect to poverty rates, it does a bit worse on poverty depths. Overall poverty depths with the 100% participation bonus decline more than with the reconfiguration plus top-up. However, the decline in the poverty depths with the CWB reconfiguration plus top-up is more evenly spread across family types, whereas it is concentrated on single adults with the 100% participation bonus.

Finally, the CWB reconfiguration plus top-up targeting earners making \$18,000 has more people who are worse off than the 100% participation bonus. That is, under the CWB reconfiguration plus top-up, people earning between \$3,000 and \$6,000 lose their eligibility to

the CWB, and some low earners receive a smaller overall benefit than under the original CWB. According to Green (2020), these people who are worse off are a more heterogenous group (in terms of age, education, and gender), with more transfer income than the people who are better off or poor high earners. They also work less in a year, indicating less labour force attachment. To address these people's loss of benefits, reforms to other programs, such as IA, labour regulation, and in-kind supports that facilitate transitions into and attachment to the labour market could help mitigate their losses.

Figure 14

CWB Reconfiguration Plus Top-up, Target Earnings \$18,000: METR

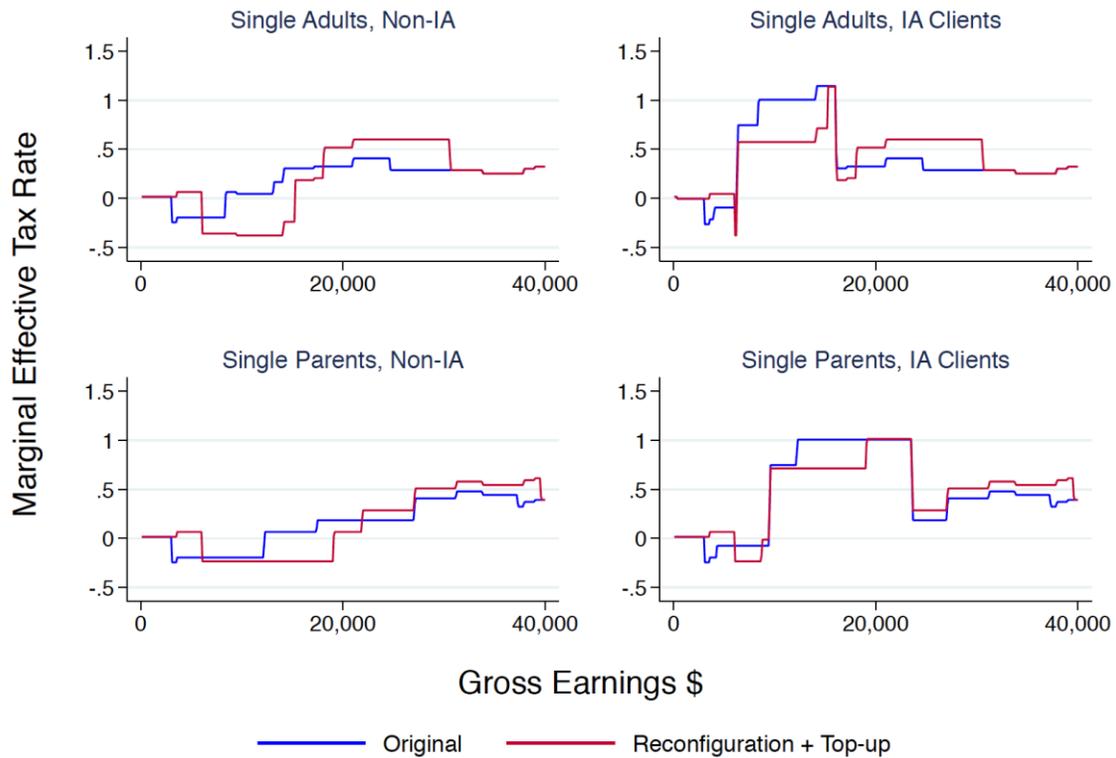
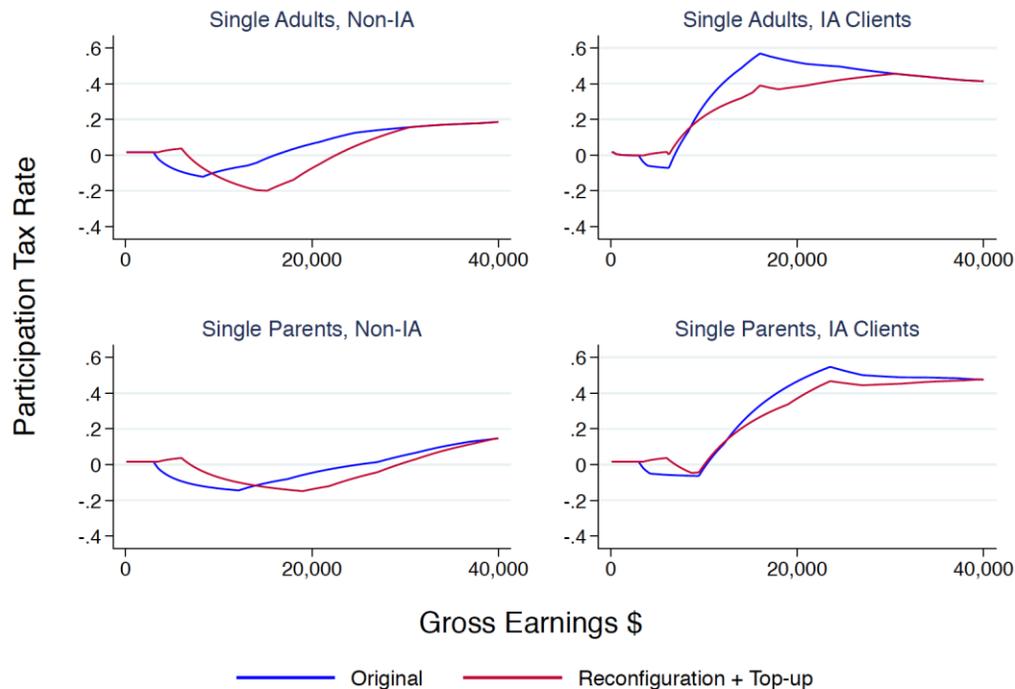


Figure 15

CWB Reconfiguration Plus Top-up, Target Earnings \$18,000: PTR



Figures 13 and 14 present the METR and PTR patterns for the CWB reconfiguration plus top-up targeting earners making \$18,000. As shown by Figure 13, the CWB reconfiguration plus top-up significantly reduces the welfare wall for IA clients, and it reduces the METR for people not receiving IA over the range of income where the CWB reconfiguration plus top-up is phased in. Yet, the METR increases to about 60% (from between 40% and 50%) for both people who are and are not receiving IA over the range of income where the CWB reconfiguration plus top-up is phased out due to the higher phase-out rate and longer phase-out range when compared to the original CWB. This is a high METR.

Figure 14 shows the participation tax rate is decreased over mid- to high- low-income ranges, where the CWB reconfiguration plus top-up is higher than the original CWB. On the other hand, the PTR is increased over low-income ranges, where the CWB reconfiguration plus top-up is lower than the original CWB. The resulting effect could be mixed—it could reduce the incentive for those with limited capacity from participating in the labour force (e.g., people with episodic disabilities) while incentivizing others to choose a higher level of labour force participation than they otherwise would have.

In summary, this approach combines both a CWB reconfiguration and a provincial top-up to the CWB. In this scenario, the main objective was to move single adults who are just below the poverty line over the poverty line. As shown elsewhere, these single adults tend to work near full year at minimum wage although their hours may be irregular or episodic, placing them below the MBM threshold. Many are likely to be women working in service industries. The

CWB reconfiguration maintains (more or less) cost neutrality while the cost of the top-up would be borne by the B.C. government. This reconfiguration plus top-up decreases the poverty rate across all family types by more than either a participation bonus or a reconfiguration (without a top-up). These declines in the poverty rate come with a lower price tag than a participation bonus on its own and the reconfiguration plus top-up is more efficient at reducing the poverty rate than the participation bonus.

Regardless of these advantages, there are some people who lose access to benefit, particularly those with earnings between \$3,000 and \$6,000, who lose access to the CWB. However, these people may be better served by reforms to other programs that address barriers to labour force participation and for those who cannot work. Relatedly, the reconfiguration plus top-up does decrease average poverty depths, but by not as much as the participation bonus. Denying eligibility to low-income earners increases their poverty depths, contributing to a smaller decrease in the average poverty depths. Finally, a CWB reconfiguration plus top-up increases PTRs for low earners (less than \$9,000/year) and it increases METRs for mid and higher low-wage earners (those with annual earnings between \$18,000 and \$30,500). It can also reduce the welfare wall for people receiving IA if the reconfiguration is aligned with IA parameters.

No matter the approach used, there is no perfect CWB/ES design. Trade-offs among various objectives and relative to cost are unavoidable. In the previous section on simulations, these trade-offs were modelled. We saw that a costless CWB reconfiguration can decrease some family types' poverty rates while increasing poverty rates for others, whereas a more costly reconfiguration plus top-up can significantly reduce poverty rates. Any reconfiguration will result in groups that will lose access to the CWB/ES or receive less. By shifting the CWB to the right, these people who are worse off will be those with the lowest level of earnings who are also the most vulnerable. However, without a reconfiguration, the welfare wall for people receiving IA will remain high (at METRs of 100% and above).

Provincial ES Program

We have shown that reconfiguring the CWB, topping up the CWB, or a combination of both would offer only limited scope for B.C. to enhance the efficacy of earnings supplementation. None of those policy approaches would improve the salience of the program for workers or make its benefits responsive to earnings variations reasonably quickly. The CWB's refundable tax credit structure on which any of those reforms would be added delays the benefit response to earnings increases by long lags—up to a year and a half. With respect to people receiving IA, a much more salient and responsive reform would be to reduce the 100% tax-back rate on earnings beyond a limited exemption. For low-wage workers not receiving IA, delivering the supplementation close to the time of any earnings increase would both provide the supplement as soon as earnings make a person eligible and maximize the incentives for working and earning more.

Pursuing its own provincial ES program would afford B.C. maximal flexibility in both the design and operational aspects. Three other provinces already have funded ES programs; only Quebec and Saskatchewan administer their own programs.¹⁶ The Alberta program is designed as a refundable tax credit and administered by the CRA, which limits its structure and the ability to respond to intra-year earnings variations. We take a particular interest in Saskatchewan's program on account of its frequent reporting of beneficiary earnings and consequential ability to adjust benefits quickly. The benefit structures of the three provincial ES programs are of less interest, as they are geared to the presence and number of children in the beneficiary family. B.C. already has adequate policies for income transfers related to children via its Child Opportunity Benefit that supplements the Canada Child Benefit.

The Saskatchewan Employment Supplement (SES) is paid monthly by direct deposit based on the beneficiary's earnings and income in the previous month. Income and earnings information must be reported four times per year (beginning the claimant's birth month), or monthly in the case where income has changed from the previous month. Income sources eligible for SES include employment, self-employment, and child or spousal support. Each month a number of SES files are randomly selected for audit. SES benefits are calculated based on an ES formula with parameters that hinge on number of children. Thus, the benefit phase-out hinges on a wider range of income types than solely those eligible for the supplement (as in other ES programs).

Adjustment of SES benefits based on reported intra-year variations in earnings and income raises several issues. First, it yields a much more responsive benefit with likely improved salience and work incentives. Second, the need for periodic reporting apart from annual income tax filing entails greater burdens for claimants and for provincial administration. Third, program take-up is likely reduced relative to an ES administered automatically via the tax system; no estimates for take-up rates of the SES are available. Fourth, benefit payment based on monthly earnings yields a higher program cost than one based on annual earnings, since some claimants will get benefits in months of earning below the monthly break-even level although their annual earnings exceed the annual-equivalent break-even level. The last factor implies that some people with variable monthly earnings will receive greater or lesser total benefits than others with the same total annual earnings received more steadily. That could be addressed by annual reconciliation with recoupment of overpayments, but the SES does not include such a complication.¹⁷

If the added administrative and compliance burdens are deemed worth the improved salience and responsiveness of ES benefits, a program structured in this way could be an appealing model for B.C. While we have not modelled and simulated such a program, its

¹⁶ These programs are described in detail in a related paper (Petit and Kesselman 2020); Table 3 in that paper provides the benefit parameters for each program and their linkage to number of children.

¹⁷ This issue of trade-offs among responsiveness, program cost, and horizontal equity is assessed for the negative income tax format of benefits in Kesselman (2020a). The trade-offs among these factors are more complex for an ES benefit structure because of its greater complexity with three benefit ranges.

impacts on incomes and poverty of various groups would generally be in line with the various ES formulations assessed in this paper. The cost of such a program, however, may be more or less than in the simulations due to monthly fluctuations in earnings. For example, a person may have earnings in half the year that makes them eligible for the monthly ES, but they then receive better paid employment resulting in much higher earnings that makes them ineligible for the ES and may have made them ineligible for an annual ES as in the simulations above. The trade-offs among key aspects of the benefits structure would also be similar to those we have found for variations on existing ES programs.

Reforms to Complement ES Reforms

Along with reforms to CWB parameters and/or a provincial top-up or new ES program, several other reforms should be considered to ensure that an ES/CWB will have the desired outcome and actually make work pay.

Reforms that Increase Knowledge of Program

If eligible individuals are unaware that an ES/CWB program exists, they may not apply for it (where enrolment is not automatic) and they will not respond to the incentives created by the program design. A lack of knowledge can stem from a variety of sources. First, a program may not be adequately salient. In the taxation literature, it has been shown that people underreact to tax programs that are not salient (Chetty, Looney, and Kroft 2009). Currently, all people eligible for the CWB are auto-enrolled for the CWB (provided they file taxes) and any benefit they are eligible for is paid out with their annual tax return. Although this addresses the issue of application, it also decreases the salience of the CWB as those who receive the CWB may not be aware they are receiving it. To increase the salience of the CWB, separate notification and payment of the CWB outside of the standard tax forms and paying out the CWB on a more frequent basis, for example, quarterly combined with the GST/HST credit, could increase saliency. It should be noted that increased saliency involves a trade-off—paying out the CWB quarterly based on reporting of the previous year's earnings instead of at tax return time increases the time lag between the time of work and the time of CWB receipt.

Furthermore, awareness of the CWB should be increased among people receiving income assistance; this has the potential to offset some of the aversion to their loss of IA benefits. Toward this end, we recommend that the Ministry of Social Development and Poverty Reduction (SDPR) implement a program that informs people receiving income assistance of *all* of their potential income sources, including the CWB. As shown in Petit & Tedds (2020b), B.C.'s system of income supports is large and complex. Not only may people not know programs exist, but it is highly unlikely that they will take the time to understand a program, determine whether they are eligible, and assess their potential benefit amount. To improve the system's functionality as a whole, the SDPR could ensure that people requiring the most supports are aware of the programs and how they can be of benefit. This could be done through the hiring and training of more informed, specialized caseworkers and/or the use technological tools, such

as in-depth benefit calculators. Non-filing of tax returns is also a significant problem among groups of the most vulnerable populations (Green et al. 2020; Robson and Schwartz 2020).

The Minimum Wage

The minimum wage is the legally mandated minimum pay per hour to which workers are entitled. As of June 1, 2020, the minimum wage in B.C. is \$14.60/hour and this is scheduled to rise to \$15.20/hour as of June 1, 2021. There are some exceptions including liquor servers, live-in camp leaders, live-in home support workers, and resident caretakers, all of whom have different (lower) minimum-wage rates.¹⁸ It should be noted that at the current minimum wage in B.C., a person working 35 hours a week and 50 weeks a year will have gross earnings of \$25,550, putting them over the 2018 MBM poverty threshold. Couples with both partners working full time at minimum wage will also have incomes well over their poverty threshold. For households with dependent children, the additional income received from federal and provincial child benefits will also put them over their respective poverty thresholds.

Along with an ES/reform to the CWB, continued improvements to the minimum wage should be pursued simultaneously. An ES may be diluted if low-wage employers reduce the wages paid to their employees. For example, in the CWB reconfiguration plus top-up simulations, we targeted people with earnings of \$18,000. If employers who were paying \$18,000 per year reduce wages to some lower amount, those people who would have received the full benefit will receive a lower benefit (along with a lower wage) and the simulated decreases in the poverty rates and poverty depths would not be realized. A sufficiently high minimum wage may prevent this dilution (Rothstein and Zipperer 2020). Other research has found that a strong minimum-wage policy can act to reinforce the effectiveness of an earnings supplement program by encouraging those with higher reservation wages such as single mothers to enter the labour market while also displacing lower-productivity workers, such as single adults (Neumark and Wascher 2011); however, these findings are contested.¹⁹

Reforms to Support Women's Work

Currently, the CWB for a married person or person in a common-law relationship is phased out over the couple's net income above a threshold. This means that a low-income women's effective wage rate is determined not just by her labour force decision, but also by the labour force decisions of her partner. To support gender equity, the CWB/ES could be individualized to make it based on the individual's income regardless of their relational status or their partner's income.²⁰ Women have lower income and lower wages compared to men. By

¹⁸ For more information, see: <https://www2.gov.bc.ca/gov/content/employment-business/employment-standards-advice/employment-standards/wages/minimum-wage>

¹⁹ Rothstein and Zipperer (2020) argue that the Neumark and Wascher (2011) findings fail to account for increases in labour supply among single mothers due to welfare reform and a strong economy. This point is supported by results in Kleven (2020); however, Whitmore Schanzenbach and Strain (2020) find opposing evidence.

²⁰ This reform was advocated for by Dr. Tammy Schirle in her presentation to the House of Commons Standing Committee on the Status of Women, February 2017. See: <http://www.tammyschirle.org/researchdocs/FEWO-2017-Economic-Security-of-Women-in-Canada.pdf>

basing the CWB on family income, some low-wage women will not receive the CWB due to their partner's income, and the number of low-wage, married/common-law women who are denied the CWB may be significant. For example, Phipps, MacDonald, and MacPhail (2001) found that when eligibility for the Employment Insurance Family Supplement changed from individualized income to family income, the number of married women receiving the EI Family Supplement dropped by 23 percentage points.

Arguably, basing the CWB on household income can improve targeting to low-income households, as it ensures that benefits go only to households that need the most help. However, programs that income test at the household level are disadvantageous, particularly for married women as they reduce a women's access to income. Income is not always equally shared within a household, and, as research has shown, the income that one spouse/partner brings in relative to the other influences their bargaining power within the household (Browning et al. 1994). Moreover, research has also shown that income going to mothers is more likely to be spent on children when compared to income going to fathers (Lundberg, Pollak, and Wales 1997). Shifting the CWB to an individual income assessment can improve gender equity, shift household bargaining power, and shift the allocation of household resources.

Change to Definition of *Income* Used

Due to the definition of *income* used to determine eligibility for the CWB, people receiving provincial IA receive a much smaller CWB benefit amount compared to people with the same earnings but not receiving IA (Petit and Tedds 2020a). Currently, eligibility for CWB is based on net income, which includes income from earnings plus income from provincial IA programs (among other sources) minus some deductions. This results in a smaller CWB benefit to people receiving IA for the same level of earnings as people not receiving IA. The potential problem here is that the reduced CWB benefit for a particular level of earnings for the person receiving IA could reduce their incentives to engage in paid work/more paid work.

The income for CWB eligibility could be based on net income minus social assistance receipts. This then would be the same as the income definition used to determine the amount of the Guaranteed Income Supplement (GIS) for seniors: GIS assessment currently deducts social assistance receipts from its definition of income used for eligibility and benefit calculations.

Conclusion

In this paper, we explored how a reform to the Canada Workers Benefit or expansion of earnings supplementation programs could make work more profitable for low-earning workers in B.C. We focused particularly on people with earned income around \$16,000 or more, but with a total income that puts them below the MBM poverty threshold. We also kept an eye on people receiving Income Assistance so that any reform to the CWB or earnings supplements did not exacerbate their welfare wall. Moreover, we sought to address a number of criticisms related to the CWB including its low benefit level, its failure to reach minimum-wage full-time, full-year workers, its low salience, and its inability to promote gender equity.

Through a series of simulations, we examined how a participation bonus, a reconfiguration of the CWB, and a CWB reconfiguration plus top-up would affect poverty rates, poverty depths, cost, marginal effective tax rates, and participation tax rates. A participation bonus would be costly to the province, and it would have only a small impact on poverty rates and marginal effective tax rates. In contrast, a reconfiguration that increased the minimum earnings threshold would be costless to the province; it could reduce poverty rates for single childless adults somewhat but would increase the poverty rates of single parents and couples with children. Finally, the CWB reconfiguration plus top-up simulations did a better job of reducing poverty rates and poverty depths than the participation bonus. That mix was also somewhat less costly, thus making it a more efficient poverty-reduction approach. However, regardless of the approach taken, using ES policies could provide only small improvement in poverty rates and depths unless the province were willing to spend substantial amounts.

An ES program designed, operated, and financed by the B.C. government, in the spirit of the Saskatchewan Earnings Supplement, would be more responsive and more salient compared to the CWB. Such an ES program would require more reporting on the part of the recipient and knowledge of the actual program—unlike the CWB for which eligible recipients are automatically enrolled upon tax filing. This would likely decrease take-up rates thereby reducing the effectiveness of the program. Moreover, a provincial ES program would have limited potential in poverty reduction, similar to existing ES schemes and the reforms considered in our analysis, unless it were operated on a large scale with concomitantly large cost.

Finally, we explored a set of reforms of an operational nature that could be implemented alongside a CWB/ES reform. Many of these reforms would need to be undertaken at the federal level, including improving the saliency of the CWB by making payments more frequent (albeit at the cost of a decrease in responsiveness), using individual income instead of a couple's income to determine eligibility in order to improve gender equity, and changing the definition of *income* used to exclude social assistance income and help those receiving IA overcome the welfare wall. Provincial-level reforms that could be implemented include aiding IA clients in understanding what their total income would be if they accepted employment and continuous improvements to the minimum wage to prevent dilution of any earnings supplement program.

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