

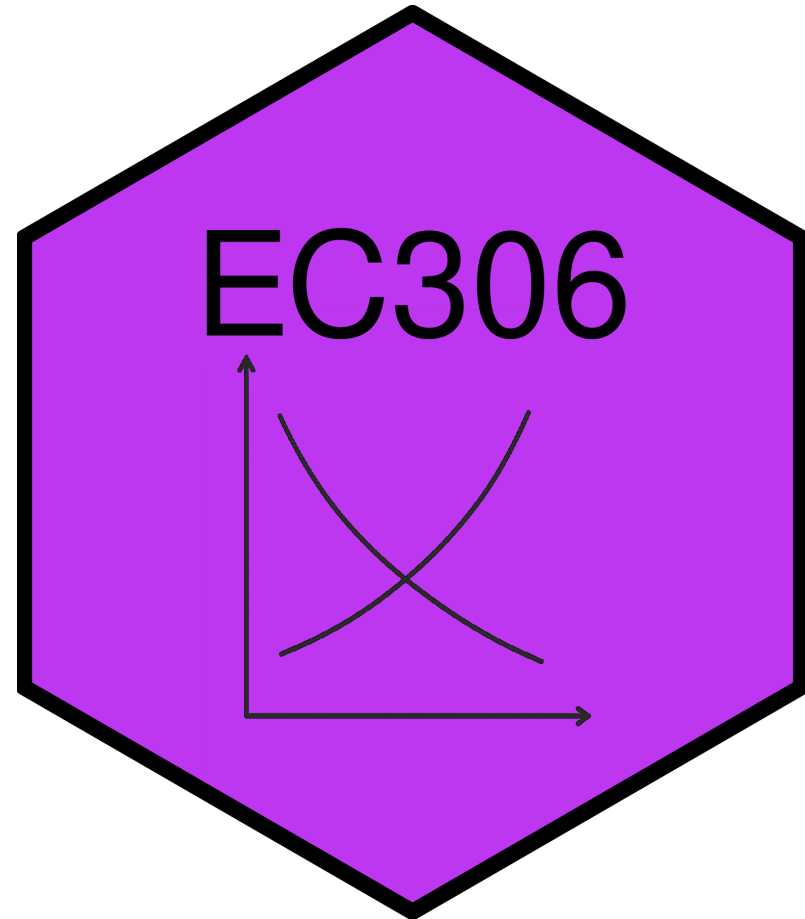
Labour Supply and Income Support Programs

EC306- Wages and Employment

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Goals of This Section

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In this section we will:

- Describe the main income support programs in Canada
- Use the labour supply model to evaluate a policy, step by step
- Analyze the work incentives of demogrants, social assistance, and negative income taxes
- Analyze wage subsidies and refundable tax credits like the Canada Workers Benefit
- Examine how economists measure these effects, including with experiments

Income Support Programs in Canada

Income Support and the Social Safety Net

! Key Definitions

Income support programs: cash transfers meant to guarantee a minimum standard of living to people with low income, the core of Canada's **social safety net**

Means-tested: eligibility depends on income or wealth

- Some programs target low income that is permanent, others low income that is temporary
- **Social insurance** is a separate group: EI, CPP, disability
 - It pays out based on past contributions, not current need, and we cover it in Chapter 5
- Both are **income maintenance programs**: they support incomes, and they change how much people choose to work
- That is the tension in this chapter: support versus **work incentives**

Government Transfers in Canada, 2022

In 2022, **95% of Canadian families** received at least one government transfer

Benefit	Percent of families	Average amount
All government transfers	95.1	\$13,969
Federal child benefit	21.5	\$6,166
Provincial child benefit	12.0	\$2,349
GST credit	51.8	\$692
Social assistance	8.2	\$11,270
Canada Workers Benefit	11.5	\$1,347
Federal refundable tax credits	52.6	\$677
Old Age Security	26.4	\$10,122
Guaranteed Income Supplement	10.2	\$6,900
Source: Canadian Income Survey (2022). Census families; average amount among families receiving the benefit.		

Issues in Program Design

Universal vs. Targeted Programs

- Universal: easy to implement but expensive
- Targeted: benefits only those in need but costly to administer
- Canada swapped the universal UCCB for the income-tested CCB in 2016

Work Disincentives

- Some programs reduce incentive to work
- Example: welfare benefits can encourage labour force dropout for those with strong preference for leisure

Permanent vs. Transitory Income Loss

- Different situations require different program designs
- Temporary layoff → short-term support
- Long-term disability → longer support + reintegration costs

iClicker Question

Which of these is a **means-tested** income support program, rather than social insurance or a universal payment?

- A) Ontario Works payments to a single adult with no other income
- B) EI benefits for a worker laid off from a plant
- C) A CPP retirement pension
- D) The UCCB's \$100 a month for a child under 6
- E) Workers' compensation after a workplace injury

Demogrants and Social Assistance Programs

Using the Model to Evaluate a Policy

- Same tool as Chapter 3: **comparative statics**, comparing choices before and after a change
- Policy rarely changes what people like; it changes what they can have
 - So the action is in the **potential income constraint**, not the indifference curves
- Every program in this chapter gets the same three steps:
 1. Draw the constraint without the policy
 2. Draw the constraint with the policy
 3. Given preferences, compare the chosen bundles

! Key Definitions

Partial equilibrium effects: how the people a program reaches respond, holding wages and everything else fixed

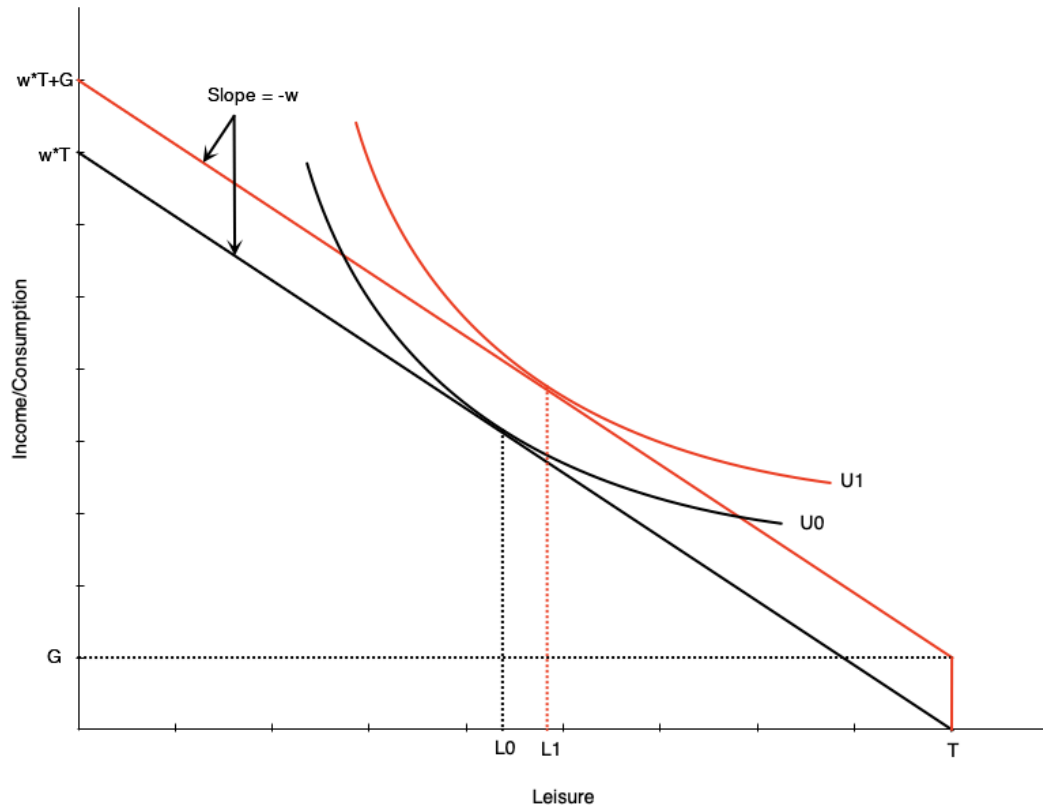
General equilibrium effects: the knock-on effects once the program works its way through the whole economy

Four Standard Income Support Programs

We will examine four policy approaches:

1. **Demogrants** – Fixed payment to a demographic group, such as everyone over 65, not means-tested
2. **Social assistance (welfare)** – Tops up income to a threshold for those with little else, clawed back dollar-for-dollar with earnings
3. **Negative Income Tax (NIT)** – A guarantee clawed back at a rate $< 100\%$ as earnings rise
4. **Wage Subsidies** – Addition to the wage rate

Demogrant: Theory



How it works:

- Unconditional lump sum transfer G
- Shifts budget line up parallel
- Wage unchanged → pure income effect

Labour supply impact:

- If leisure is normal → optimal leisure rises
- Reduces hours worked
- Raises reservation wage → some may quit

i Work Incentive Effect

Unambiguously negative

Demogrants in Canada

Old Age Security (OAS)

- Monthly benefit for people 65 and over who meet residency rules
- Not a pure demogrant: it is taxed back from high-income seniors
- Together with the Guaranteed Income Supplement, more than \$76 billion in 2024

Universal Child Care Benefit (UCCB)

- Paid to families with children from 2006 to 2016, whatever their income
 - Started at \$100 a month per child under 6
 - From 2015: \$160 a month under 6, \$60 a month aged 6–17
- Taxable, so lower-income families kept more of it: not a pure demogrant either
- Replaced in 2016 by the income-tested [Canada Child Benefit \(CCB\)](#)

iClicker Question

The UCCB paid families \$100 a month per child under 6, whatever their income and whether or not they worked. Assuming leisure is a normal good, what does the labour supply model predict for a working mother's hours?

- A) More hours, because the money helps pay for child care
- B) Ambiguous, because the income and substitution effects pull in opposite directions
- C) No change, because the payment does not depend on whether she works
- D) Fewer hours, through an income effect only
- E) Fewer hours, through a substitution effect

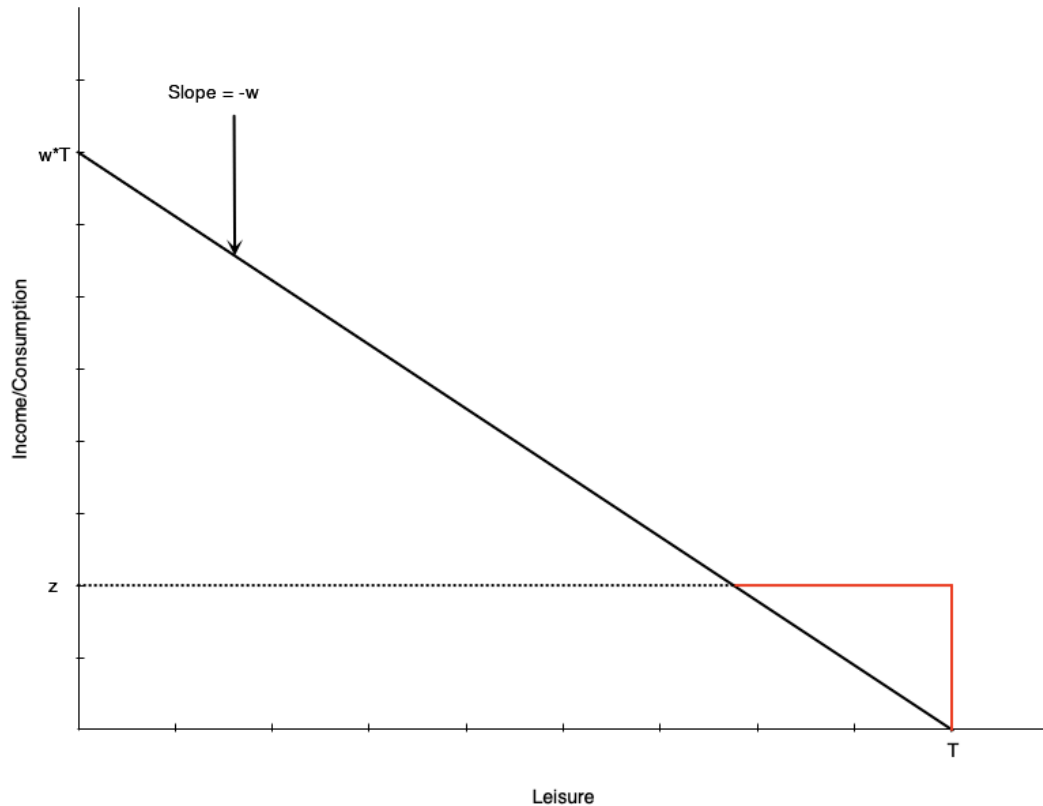
Social Assistance: Overview

! Key Definition

Social assistance (income assistance, or **welfare**): means-tested provincial support for people with little or no other income

- **Perfect targeting**: top income up to a threshold z : grant $G = z - (wH + Y_N)$
- Every dollar earned costs a dollar of benefit: a **100% clawback rate**
- Most recipients have a disability or another barrier to full-time work
- Benefits are modest: Ontario pays a single employable adult at most \$733 a month (2025), about 10 hours a week at minimum wage
- A lone parent with one child got 57–86% of the poverty line, depending on province (2023)
- Source: Laidley & Tabbara (2024)

Social Assistance: Budget Constraint



Budget line structure:

- Black line: original budget (leisure at L_0)
- **Red then black:** with social assistance up to the threshold z

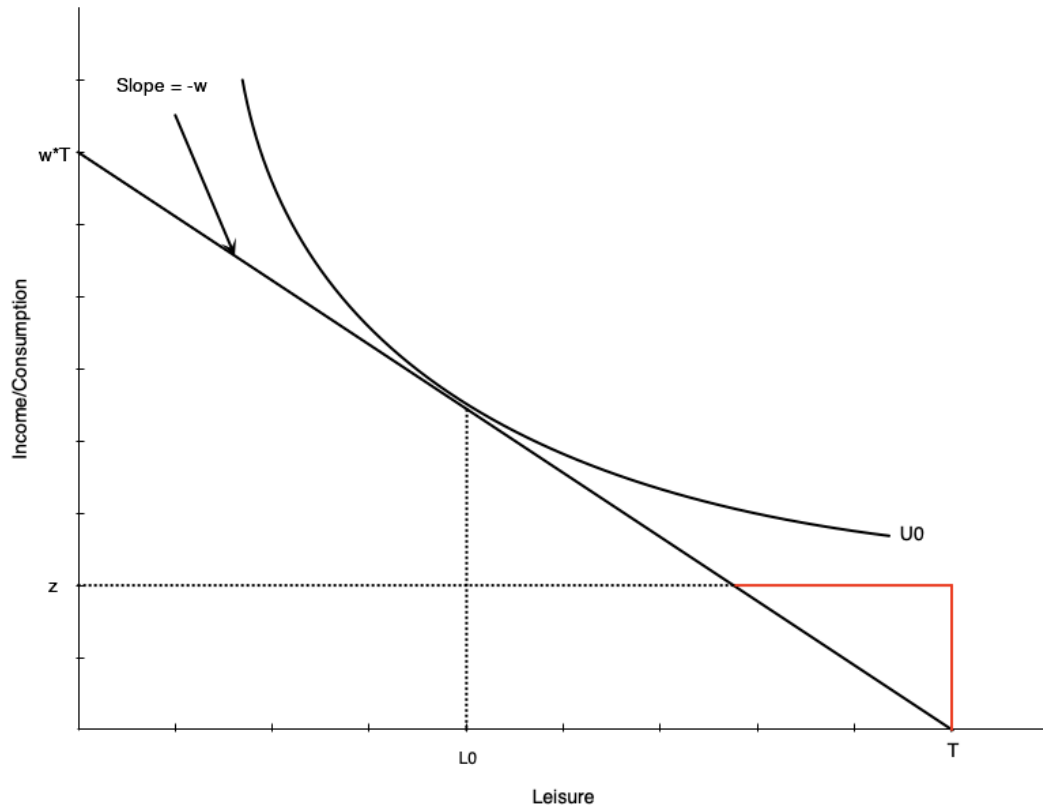
Key features:

- Grant $G = z$ at zero hours of work
- Reduced \$1 for each \$1 earned
 - Equivalent to **100% tax rate** on earnings
- Income stays at z until earnings reach z
- After that, earn wage w per hour worked

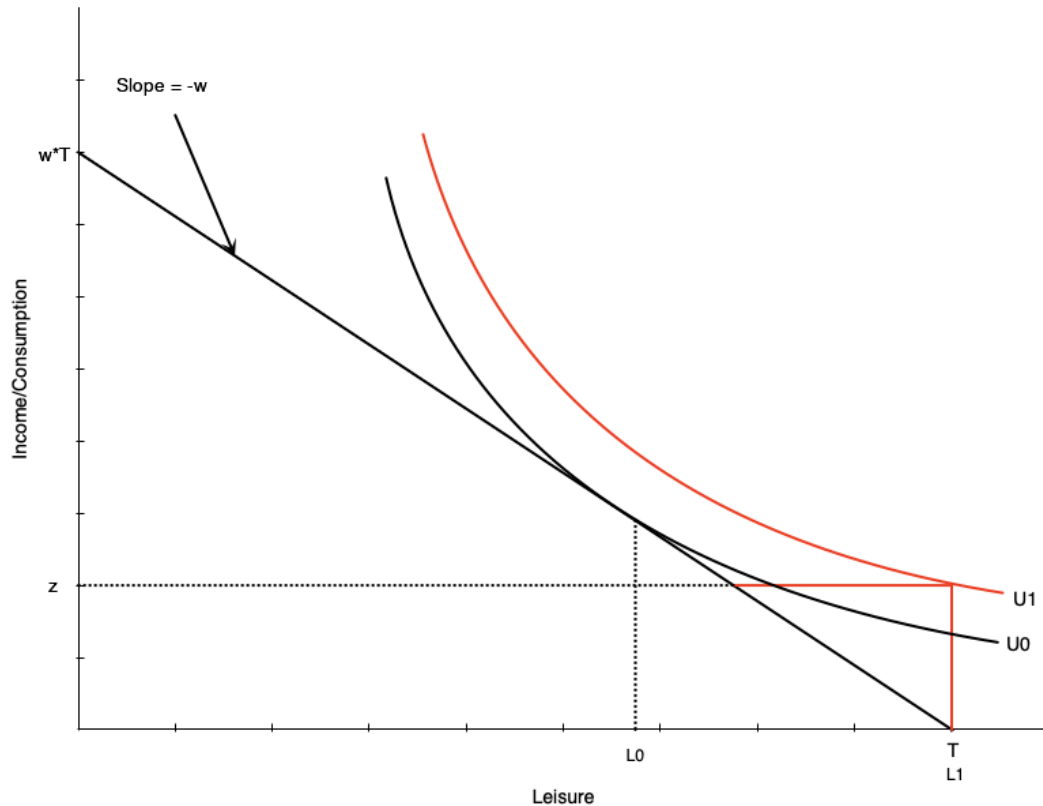
Social Assistance: No Effect Case

For some workers, welfare has no effect:

- Person working H_0 hours before benefit
- Still maximizes utility at H_0 hours after
- Generally occurs with people already working many hours



Social Assistance: Work Disincentive Case



Others face strong work disincentive:

- Person chooses **zero hours** after welfare benefit

This occurs when:

- Welfare benefit is generous
- Individual places high value on leisure

⚠ Work Incentive Effect

This is the problematic effect of welfare programs

iClicker Question

Social assistance guarantees \$733 a month, clawed back dollar for dollar with earnings. Maya earns \$600 a month working part time. If she qualifies, what does the model predict?

- A) She keeps working and gets a \$133 top-up, so her income rises to \$733
- B) Nothing changes, because she was already working
- C) She works more hours, to earn her way off assistance
- D) We can't tell without knowing whether leisure is a normal good
- E) She stops working entirely

Negative Income Tax: Overview

Key Definition

Negative income tax (NIT): welfare program where benefit reduced at rate $< 100\%$ of earnings

- Example: guarantee z of \$10,000, reduced by 50¢ per dollar earned

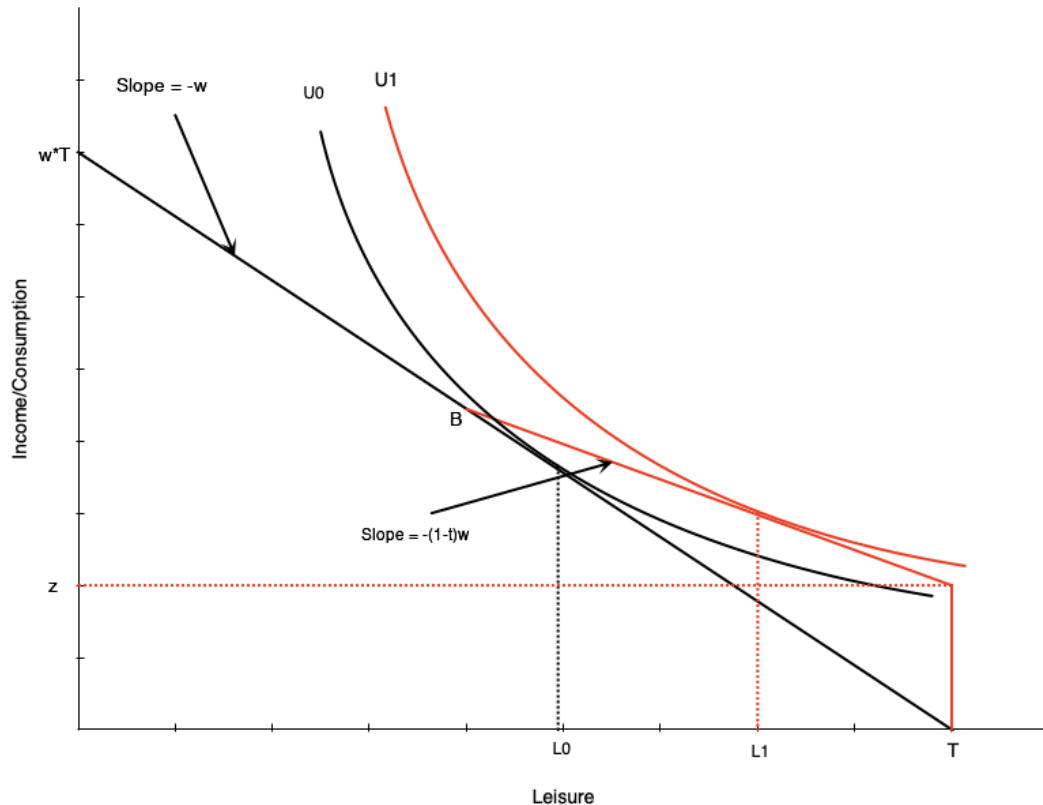
Advantages

Provides income support with fewer work disincentives. Still maintains incentive to work since benefit reduces slowly.

How it relates to basic income:

- A targeted **basic income guarantee (BIG)** works like an NIT (or like welfare, if the clawback is 100%)
- A **universal basic income (UBI)** pays everyone the same amount, so it works like a demogrant

Negative Income Tax: Budget Constraint



NIT has two components:

- Guarantee z at zero hours of work
- Implicit tax rate t on earnings, until the benefit is gone at the **breakeven point** B

Effect on labour supply:

- Pivots budget line up vs. pure welfare
- Work hours reduced from H_0 to H_1
- Person still works some hours

i Work Incentive Effect

Smaller disincentive than welfare for those welfare would push to zero hours

Negative Income Tax: Income and Substitution Effects

Income effects:

- Benefit increases non-labour income → increases leisure ↑
- Tax has negative income effect → reduces leisure ↓
- Net: benefit effect dominates → leisure ↑

Substitution effect:

- Tax rate reduces effective wage
- Makes leisure relatively cheaper → reduces work hours ↓

Overall Effect

Negative effect on work hours; it also reaches earners whom welfare leaves alone

Negative Income Tax: Math

The budget constraint with NIT:

$$I = \begin{cases} wH + z - twH, & \text{if } z - twH \geq 0 \\ wH, & \text{otherwise} \end{cases}$$

Interpretation:

- Income = earnings (wH) + net benefit $G = z - twH$, as long as $z - twH \geq 0$
- Otherwise just earnings (wH)
- The same thing in one line: $I = z + (1 - t)wH$, with $G = \max(z - twH, 0)$

Break-even point B : the benefit reaches zero when $wH = \frac{z}{t}$

iClicker Question

A negative income tax guarantees \$12,000 a year and claws back 40% of earnings. Priya earns \$20,000. What is her total income?

- A) \$12,000
- B) \$20,000
- C) \$24,000
- D) \$27,200
- E) \$32,000

Basic Income in Canada: MINCOME

Manitoba Basic Annual Income Experiment, 1975–1979

- A targeted basic income, so an NIT, offered to eligible families in two places
 - Winnipeg: families assigned to plans or to a control group
 - Dauphin: a [saturation site](#), where every resident was eligible, with a 50% clawback
- Plans varied both the guarantee and the clawback rate
- The idea had real policy weight: the Macdonald Commission (1985) recommended a national NIT for low-income families

MINCOME: Results

Labour supply effects:

- Hours fell, but not by much (Hum & Simpson 1991)
 - Men: 0.8–1.6%
 - Married women: 2.4–3%
- The US income maintenance experiments found much larger drops for husbands and wives (Hum & Simpson 1993)

The debate continues:

- Basic income is back on the policy agenda in Canada
- Koebel & Pohler (2019): grow the Canada Workers Benefit into a basic income run through the tax system
- Open questions: cost, financing, and federal–provincial cooperation

Other Ways to Reduce Work Disincentives

Policy options:

1. Reduce the guarantee z
 - But then support may be inadequate for those who cannot work
2. Move toward an NIT
 - Clawback below 100%; most provinces now let recipients keep some earnings
3. Change preferences
 - Stigma, or support for getting into work: flatter indifference curves
 - Difficult to achieve
4. Raise the wage
 - Training, job information, minimum wages, unions
 - Or subsidize the wage directly: next section

Wage Subsidies and Refundable Tax Credits

Wage Subsidies: Theory

! Key Definition

Wage subsidy: payment to workers that increases their wage rate

- Example: \$5/hour subsidy increases \$15/hour wage to \$20/hour

Effect on budget constraint:

- Budget line pivots upward

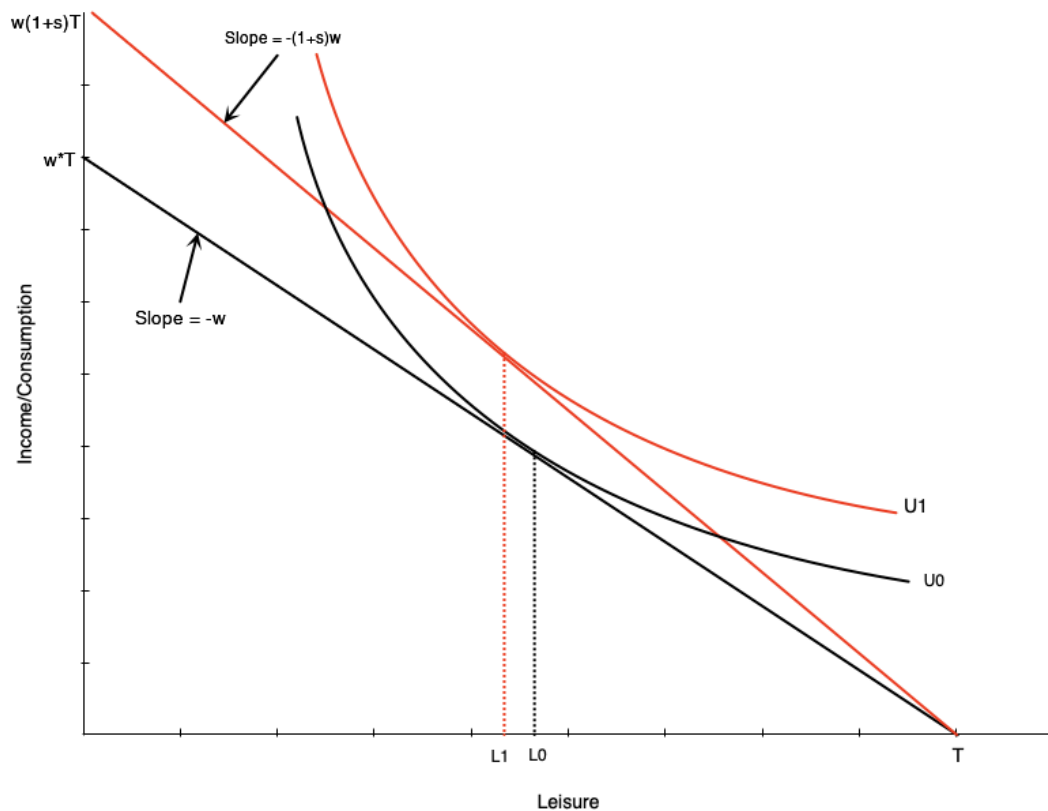
Labour supply effects:

- Income effect → increases leisure ↑
- Substitution effect → decreases leisure ↓

i Work Incentive Effect

Overall effect on work hours is **ambiguous**

Wage Subsidies: Diagram



Budget line pivots up with subsidy

- Graph shows person working more
- But effect is theoretically ambiguous
- Income and substitution effects work in opposite directions

Wage Subsidies: Policy Implications

Advantages

- Less negative work incentives than welfare or NIT
- No reduction in effective wage rate

Disadvantages

- Do not provide income support to non-workers
- High earners qualify too, so it is a very expensive way to reach those in need

In practice:

- Pure wage subsidies are rare, because of that cost
- The fix is to target: pay the subsidy only to low earners
 - Canada's version is the [Canada Workers Benefit](#)

iClicker Question

Which program does more to draw people who are **not working** into the labour force?

- A) A negative income tax, because it gives low-income people more money
- B) A wage subsidy, because it pays only when you work, raising the return to the first hour
- C) They are the same, because both raise the incomes of low earners
- D) Neither, because both create income effects that reduce work
- E) A negative income tax, because its clawback is below 100%

Refundable Tax Credits

! Key Definitions

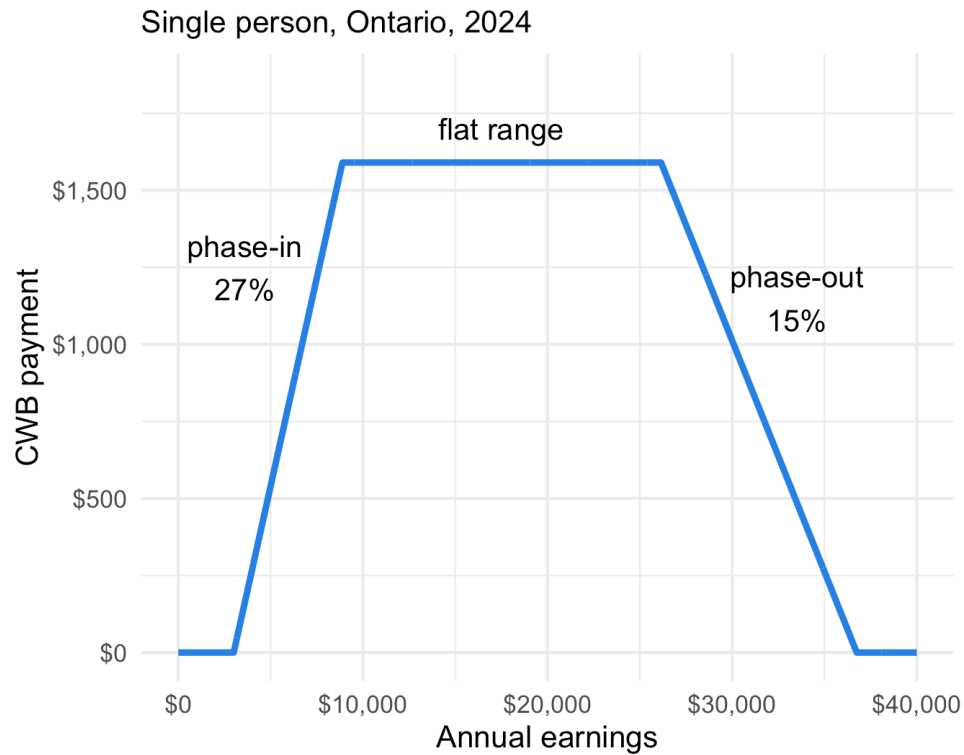
Non-refundable: can reduce tax owed to zero (but not below)

Refundable: can reduce tax owed below zero (results in payment)

Income-tested wage subsidies paid as refundable credits:

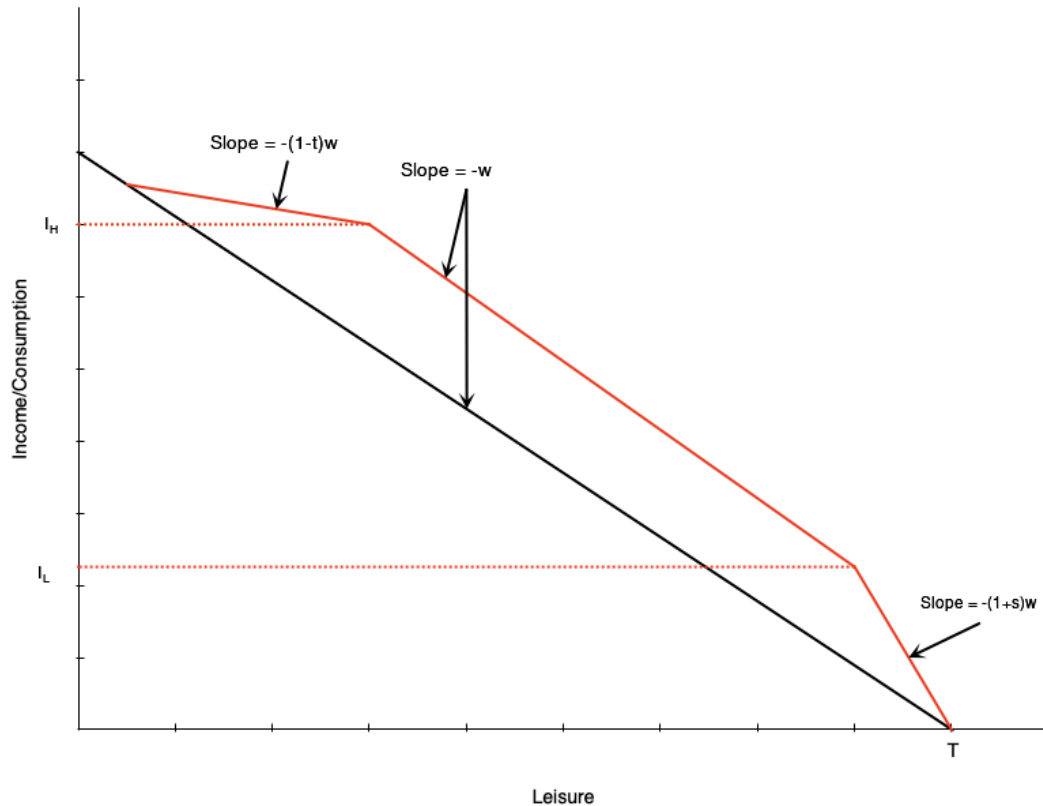
- **Canada Workers Benefit (CWB)** – Canada, since 2007 (first called the WITB)
- **Earned Income Tax Credit (EITC)** – US, since 1975, now one of the largest US income supports
- Similar programs: the UK's former Working Families Tax Credit and New Zealand's In-Work Tax Credit
- Popular across the political spectrum: targeted, pro-work, and cheap to run through the tax system, with no caseworkers
- Source: Nichols & Rothstein (2015); Blundell (2006)

The Canada Workers Benefit, 2024



- Nothing until earnings pass \$3,000
- **Phase-in:** 27 cents per dollar earned above \$3,000
- **Flat range:** the \$1,590 maximum, reached at about \$8,900 of earnings
- **Phase-out:** clawed back at 15% of earnings above \$26,149
- Gone entirely at \$36,749
- A small program next to the EITC: low benefits and low thresholds

Tax Credits: Budget Constraint



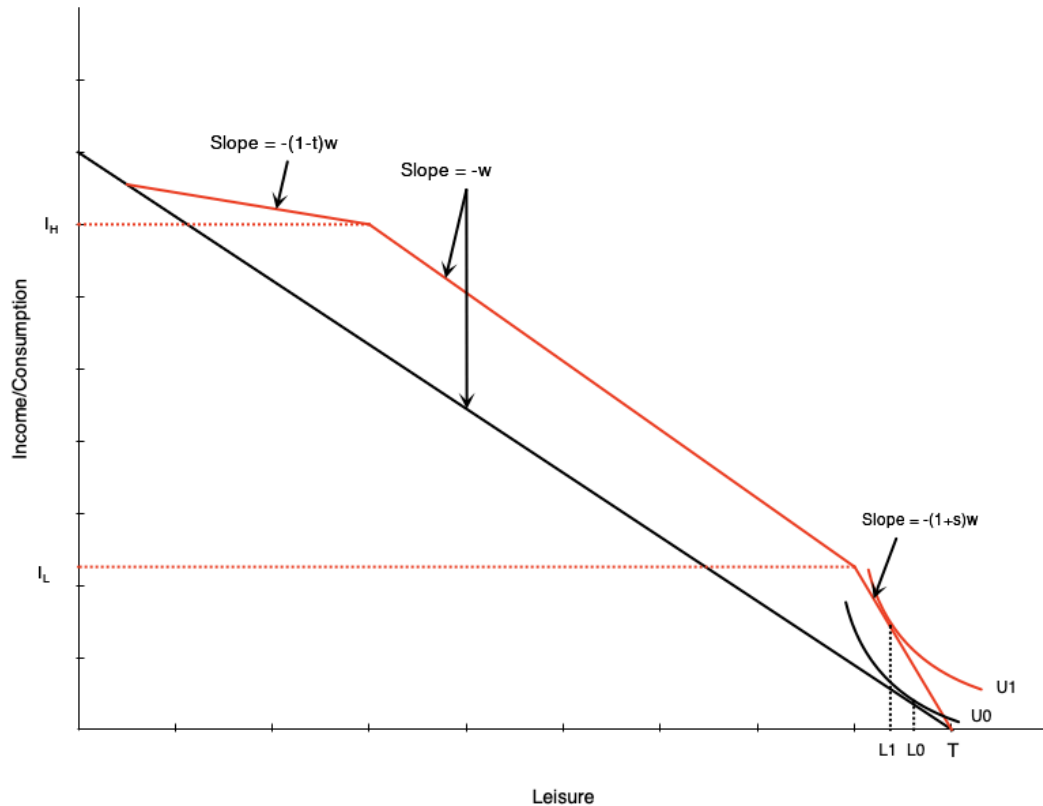
Three segments:

1. **Phase-in:** Subsidy proportional to earned income, up to income I_L
2. **Flat range:** Maximum benefit level, between I_L and I_H
3. **Phase-out:** Benefit reduced with earned income above I_H

Combines elements of:

- Wage subsidy (phase-in)
- Demogrant (flat range)
- NIT (phase-out)

Tax Credits: Effect in Phase-In Range



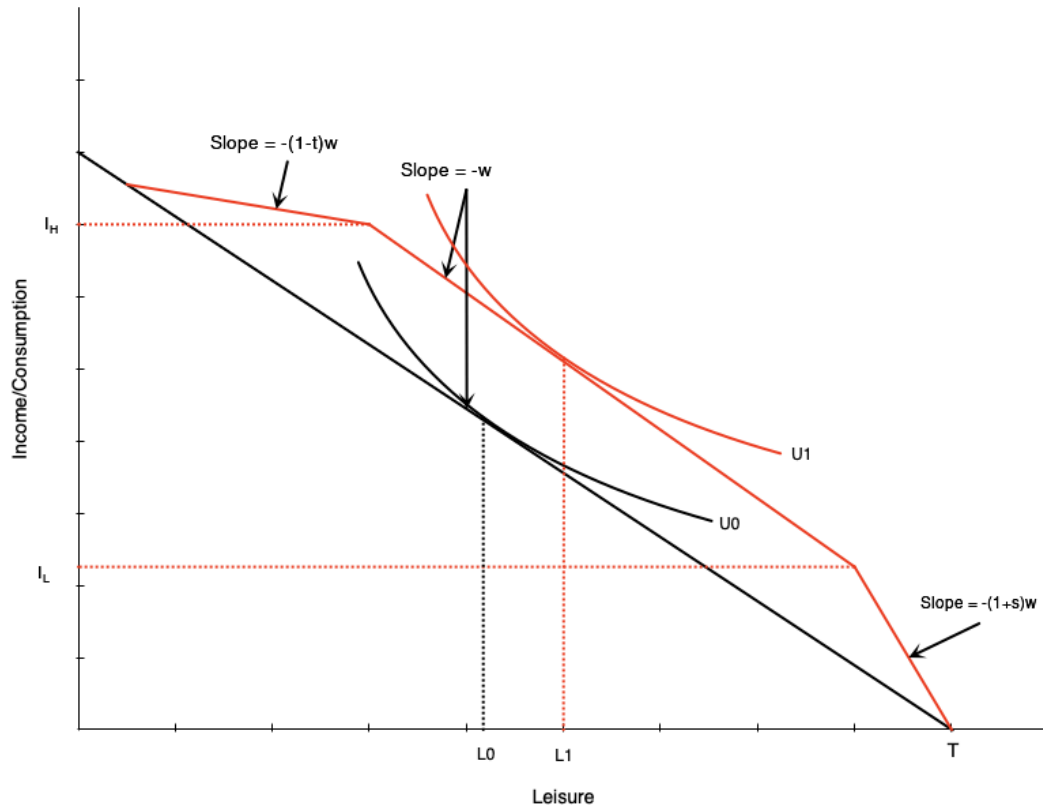
Person in phase-in range:

- Sees increase in effective wage
- Acts like **pure wage subsidy**
- Income and substitution effects in opposite directions

i Work Incentive Effect

Effect on hours is **ambiguous**

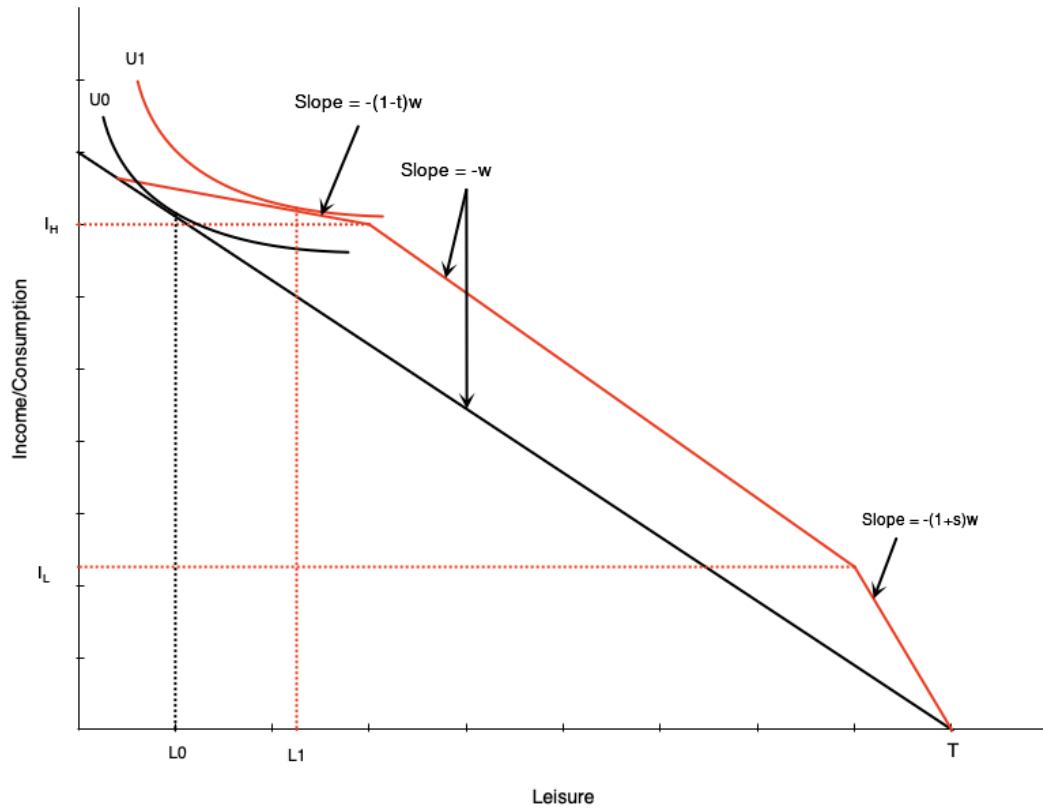
Tax Credits: Effect in Flat Range



Person initially in the flat range:

- Tax credit gives maximum benefit
- Acts like **pure income effect**
- If leisure is normal good $\rightarrow$ reduce work hours

Tax Credits: Effect in Phase-Out Range



Person in phase-out range:

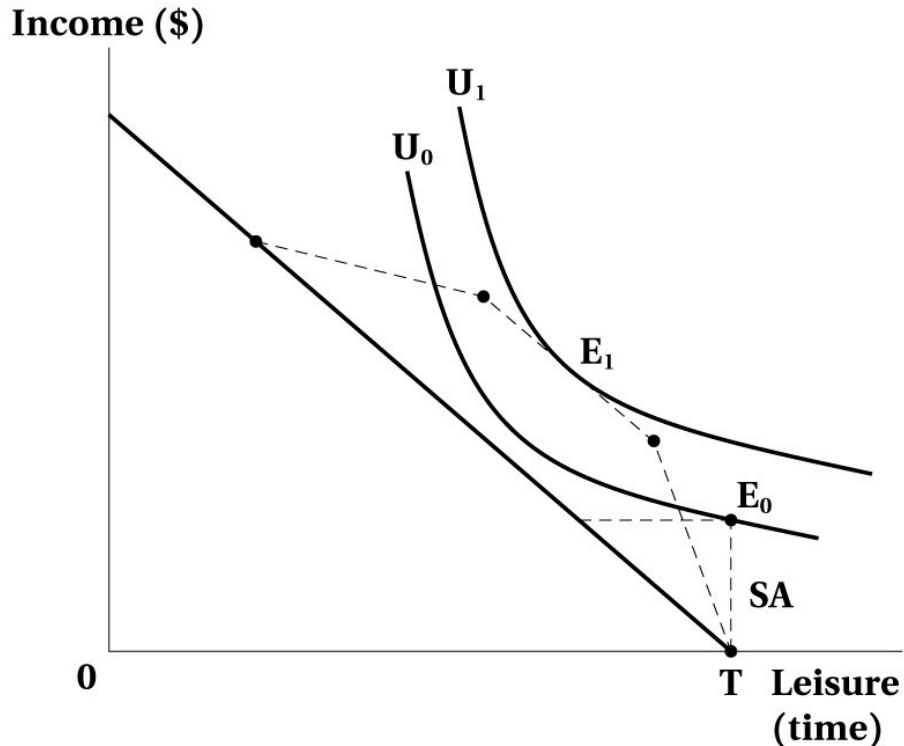
- Similar to **negative income tax**
- Income effect $\rightarrow$ reduce hours $\downarrow$
- Substitution effect $\rightarrow$ reduce hours $\downarrow$

i Work Incentive Effect

Effect on work is **unambiguously negative**

Tax Credits and Participation

(b) CWB compared to social assistance



Source: Benjamin et al. (2026), Figure 4.8(b)

i Key Result

Effect on hours is ambiguous, but the incentive to participate rises

- For a non-worker, the phase-in raises the return to the first hours of work
- Against social assistance with a 100% clawback, the contrast is sharper
 - Without the credit: no work, collect assistance (E_0)
 - With it, if the benefit is large enough: work, on a higher indifference curve (E_1)

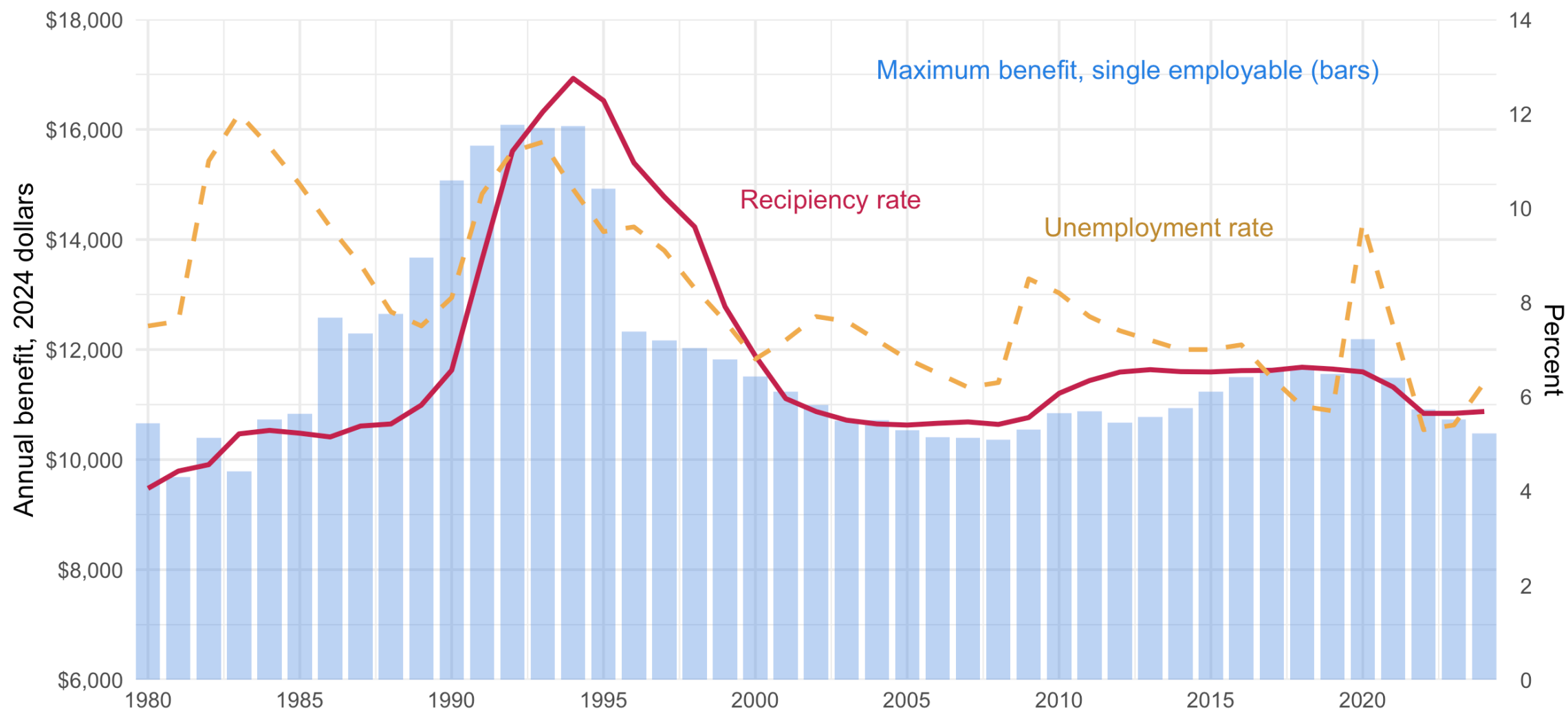
iClicker Question

Ali is single, lives in Ontario, and earns \$30,000 a year. Compared with no CWB, what does the CWB do to his incentive to work **more hours**?

- A) Reduces it: the income and substitution effects both cut hours
- B) Reduces it, through an income effect only
- C) Ambiguous: a higher effective wage, but also an income effect
- D) No effect: he earns too much to qualify
- E) Increases it: the clawback raises the payoff to each extra hour

Empirical Evidence of Incentive Effects

Social Assistance in Ontario, 1980–2024



Source: Benjamin et al. (2026) replication data, from Maytree and Statistics Canada

Correlation Is Not Causation

- Benefits and reciprocity move together, but which way does causation run? We saw this problem in Chapter 2
- **Reverse causation:** a big caseload is a big constituency, and governments raised benefits to match
- **Confounding:** unemployment drives both; recessions push people onto assistance, booms pull them off
- Berg & Gabel (2015): across provinces, work requirements did the most to cut caseloads, 1986–2009

! Key Definitions

Nonexperimental sources: responses to real policy changes, compared across people, places, or time

Experimental sources: programs that randomly assign who is offered the treatment

Quebec: A Discontinuity at Age 30

- Until August 1989: Quebec paid singles and couples without children far less if they were under 30
 - Age 29: \$185 a month; age 30: \$507 a month
- Someone a few months short of 30 is otherwise much like someone a few months past it
 - Comparing the two is a [regression discontinuity design](#), as in Chapter 2
- Results:
 - Fortin et al. (2004): the higher benefit led to much longer spells on assistance
 - Lemieux & Milligan (2008): employment of male high-school dropouts fell about 4 percentage points past age 30 (1986)

Key Result

Two [nonexperimental](#) studies, one conclusion: higher benefits reduce work

iClicker Question

Which comparison gives the most credible estimate of how a higher welfare benefit affects work?

- A) Employment in provinces with high benefits versus provinces with low benefits
- B) Employment in one province before and after it raised benefits
- C) Hours worked by welfare recipients versus non-recipients
- D) People just under versus just over an age cutoff where benefits jump
- E) Asking recipients whether the benefit made them work less

Child Benefits and Work

- [National Child Benefit, 1998](#): some provinces effectively cut the clawback for welfare recipients
 - Work incentives improved, which could explain much of the 1997–2000 caseload fall
- [UCCB, 2006](#): compare parents of children 5 and under to parents of older children, before and after
 - A [difference-in-differences](#) design, as in Chapter 2
 - Married mothers cut both participation and hours, as the demogrant model predicts
 - From the paper itself: participation of lower-educated married mothers fell 3.2 percentage points
 - Divorced mothers worked *more*
- [UCCB expansion and the CCB](#): large cuts in poverty, no sign of lower labour supply
- Source: Milligan & Stabile (2007); Schirle (2015); Koebel & Schirle (2016); Baker et al. (2023)

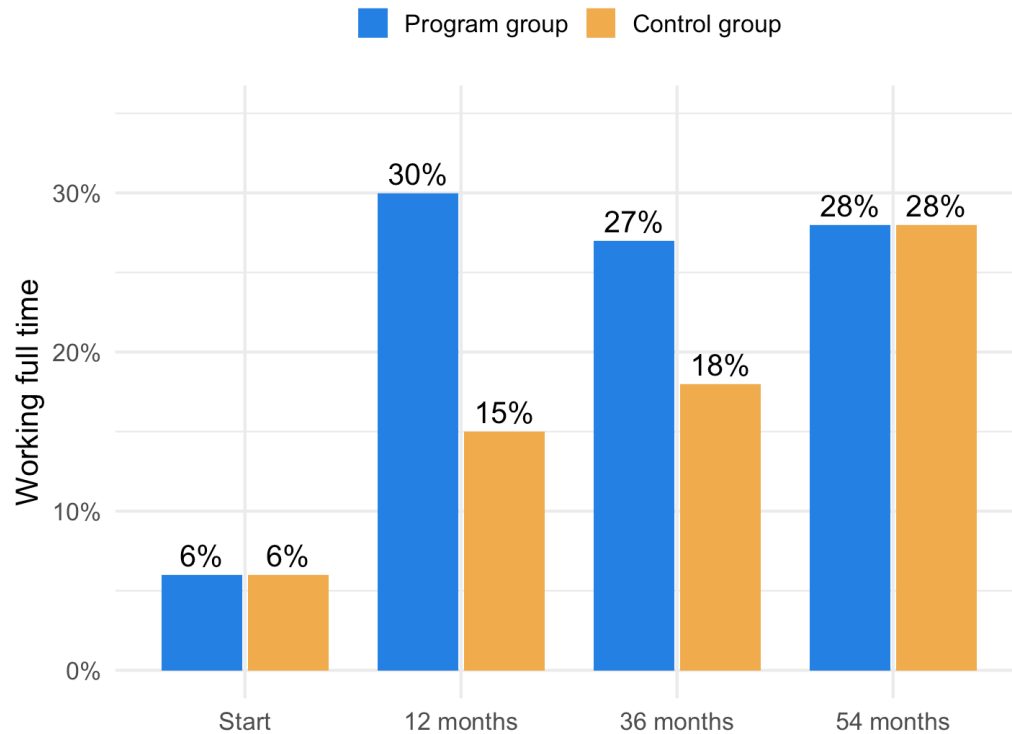
The Self-Sufficiency Project

! Key Definition

Self-Sufficiency Project (SSP): a randomized Canadian experiment that paid an earnings supplement to long-term assistance recipients who left for full-time work

- Who: about 5,600 single parents, mostly mothers, on assistance for at least a year
- Where and when: New Brunswick and British Columbia, 1992–1999
- Design: random assignment to a program group or a control group
- The offer: leave assistance for a job of 30+ hours a week within a year, and collect a supplement
 - Half the gap between earnings and a benchmark of \$30,000 (NB) or \$37,000 (BC)
 - Paid for up to three years, as long as the work stays full time
 - Roughly doubled what assistance paid

SSP: Results



- **Naive estimate:** full-time work in the program group went from 6% to 30%, so 24 points
- But the control group got to 15% with no offer at all
- **Experimental estimate:** $30 - 15 = 15$ points
- The gap closed after the offer ended
 - 9 points at 36 months
 - Gone by 54 months; assistance receipt equal by month 69

SSP: Why the Effect Faded

- Card & Hyslop (2005): the time limits created two incentives
 - **Establishment incentive**: find full-time work within 12 months to qualify
 - **Entitlement incentive**: once qualified, keep working to keep collecting
 - Both end when the program ends
- Riddell & Riddell (2014): the program group went back to school less
 - Less high-school completion, college or trade school, and university
 - **Work-first** policies can trade long-run earning power for short-run jobs

Key Result

The SSP sped up the move from assistance to work while it ran; it did not change where people ended up

- Source: Card & Hyslop (2005); Riddell & Riddell (2014)

Summary

Summary

Income support programs:

- Provide crucial income support to various groups
- Can create work disincentives in some cases
- Must balance support needs against incentive effects

We examined several programs through the labour supply model:

- Three steps: constraint before, constraint after, compare choices
- Demogrants, social assistance, NIT, wage subsidies, and tax credits like the CWB

Evidence:

- Experiments and natural experiments beat simple correlations
- Both benefit generosity and labour market opportunities predict who relies on assistance

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