The Marginal Net Taxation of Americans' Labor Supply

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Marginal Tax Rates and Labor Supply

- A central issue in the design of tax systems – marginal tax rates discourage employment and hours by reducing after-tax wages
  - Long understood that one needs to take all taxes into account, including payroll taxes and consumption taxes
- But implicit taxes through lost benefits are important, too
  - These are common, because of program means-testing
- So are future taxes (explicit and implicit), for individuals who are forward-looking
  - Increases in current income affect taxes and benefits in the future

This Paper's Contribution

- Taking account of a vast array of federal, state, and local taxes and benefit programs and projected paths of income and spending, the paper estimates the change in the present value of net taxes (taxes net of government benefits) for a $1,000 increase in labor (e.g., wage and salary) income for a sample of households based on the 2019 Survey of Consumer Finances
- Dividing these net tax increments by the assumed increase in income produces estimates of Lifetime Marginal net Tax Rates (LMTRs).

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- For those in the bottom quintile, LMTRs are quite dispersed
  - One in four face LMTRs above 50%; for one in ten, over 70%
  - LMTRs would be even larger with full program take-up

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- There are big differences across states, controlling for income
- Current-year marginal net tax rates (CMTRs) understate full consequences of working on lifetime net taxes
- Simply removing variations in LMTRs for given incomes could result in substantial improvements in economic efficiency

Some Illustrative Cases

Case 1: Why Can LMTRs be Higher than CMTRs?

This household comprises a 44-year-old, college educated, single male who lives in Arizona. The respondent is a very high earner, placing him in the top resource quintile. As shown in the table, he pays $138,670 in current-year federal income taxes on a pre-tax income of $438,541. The respondent's CMTR is 36.0 percent, but his LMTR is much higher – 58.2 percent.

	C Baseline	C Marginal	C Diff	L Baseline	L Marginal	L Diff
Federal Income Tax	138,670	138,978	308	1,938,780	1,939,229	449
State Income Tax	17,596	17,633	37	243,442	243,496	54
Other Taxes	27,991	28,006	15	526,437	526,516	79
Total Taxes	184,257	184,617	360	2,708,659	2,709,241	582
SNAP	0	0	0	0	0	0
TANF	0	0	0	0	0	0
Section 8	0	0	0	0	0	0
CCDF	0	0	0	0	0	0
Social Security	0	0	0	137,382	137,382	0
SSI	0	0	0	0	0	0
Medicare	0	0	0	48,927	48,927	0
Medicaid	0	0	0	0	0	0
ACA	0	0	0	0	0	0
Other Transfers	-0	-0	-0	-0	-0	-0
Total Transfer Payments	-0	-0	-0	186,309	186,309	-0
Net Taxes	**184,257**	**184,617**	**360**	**2,522,350**	**2,522,932**	**582**

Case 2: Why Can LMTRs be Very High for the Poor?

This case involves a bottom-resource quintile Idaho 37-year-old couple with three children. Their massive LMTR – 652.9 percent – primarily reflects the loss of SNAP benefits from earning the posited extra $1,000. Since the couple doesn't exceed the SNAP threshold in future years, their CMTR of 817.7 percent exceeds their 652.9 percent LMTR.

	C Baseline	C Marginal	C Diff	L Baseline	L Marginal	L Diff
Federal Income Tax	2,844	3,026	182	91,864	91,503	-361
State Income Tax	3,002	3,073	71	48,398	48,125	-273
Other Taxes	5,925	5,964	39	93,791	93,210	-581
Total Taxes	11,770	12,062	292	234,054	232,839	-1,215
SNAP	6,489	0	-6,489	12,652	6,285	-6,367
TANF	0	0	0	0	0	0
Section 8	0	0	0	0	0	0
CCDF	0	0	0	0	0	0
Social Security	0	0	0	67,723	67,742	19
SSI	0	0	0	0	0	0
Mcare	0	0	0	39,689	39,689	0
Mcaid	8,125	8,125	0	67,872	67,872	0
ACA	0	0	0	0	0	0
Other Transfers	1,396	0	-1,396	5,360	3,964	-1,396
Total Transfer Payments	16,010	8,125	-7,885	193,297	185,553	-7,744
Net Taxes	**-4,240**	**3,937**	**8,177**	**40,757**	**47,286**	**6,529**

Case 3: Why Can CMTRs be Bad Indicators of LMTRs?

This is a bottom-quintile Ohio couple whose spouses are ages 40 and 42. The couple's CMTR is 36.9 percent, due to increased taxes and lost SNAP benefits. But their LMTR is -336.7 percent, due almost entirely to the couple becoming eligible for additional SSI benefits. In earning more, the couple loses current-year benefits. Consequently, they save less, making them eligible for more SSI benefits in the future.

	C Baseline	C Marginal	C Diff	L Baseline	L Marginal	L Diff
Federal Income Tax	-467	-396	71	36,222	36,310	88
State Income Tax	133	133	0	2,162	2,164	2
Other Taxes	2,952	3,027	75	47,844	47,764	-80
Total Taxes	2,617	2,763	146	86,227	86,237	10
SNAP	2,152	1,929	-223	10,054	9,969	-85
TANF	0	0	0	0	0	0
Section 8	0	0	0	0	0	0
CCDF	0	0	0	0	0	0
Social Security	0	0	0	61,435	61,452	17
SSI	0	0	0	4,201	7,561	3,360
Medicare	0	0	0	46,118	46,118	0
Medicaid	22,590	22,590	0	203,075	203,160	85
ACA	0	0	0	0	0	0
Other Transfers	1,869	1,869	0	32,616	32,616	0
Total Transfer Payments	26,612	26,389	-223	357,499	360,876	3,377
Net Taxes	**-23,995**	**-23,626**	**369**	**-271,272**	**-274,639**	**-3,367**

Our Approach

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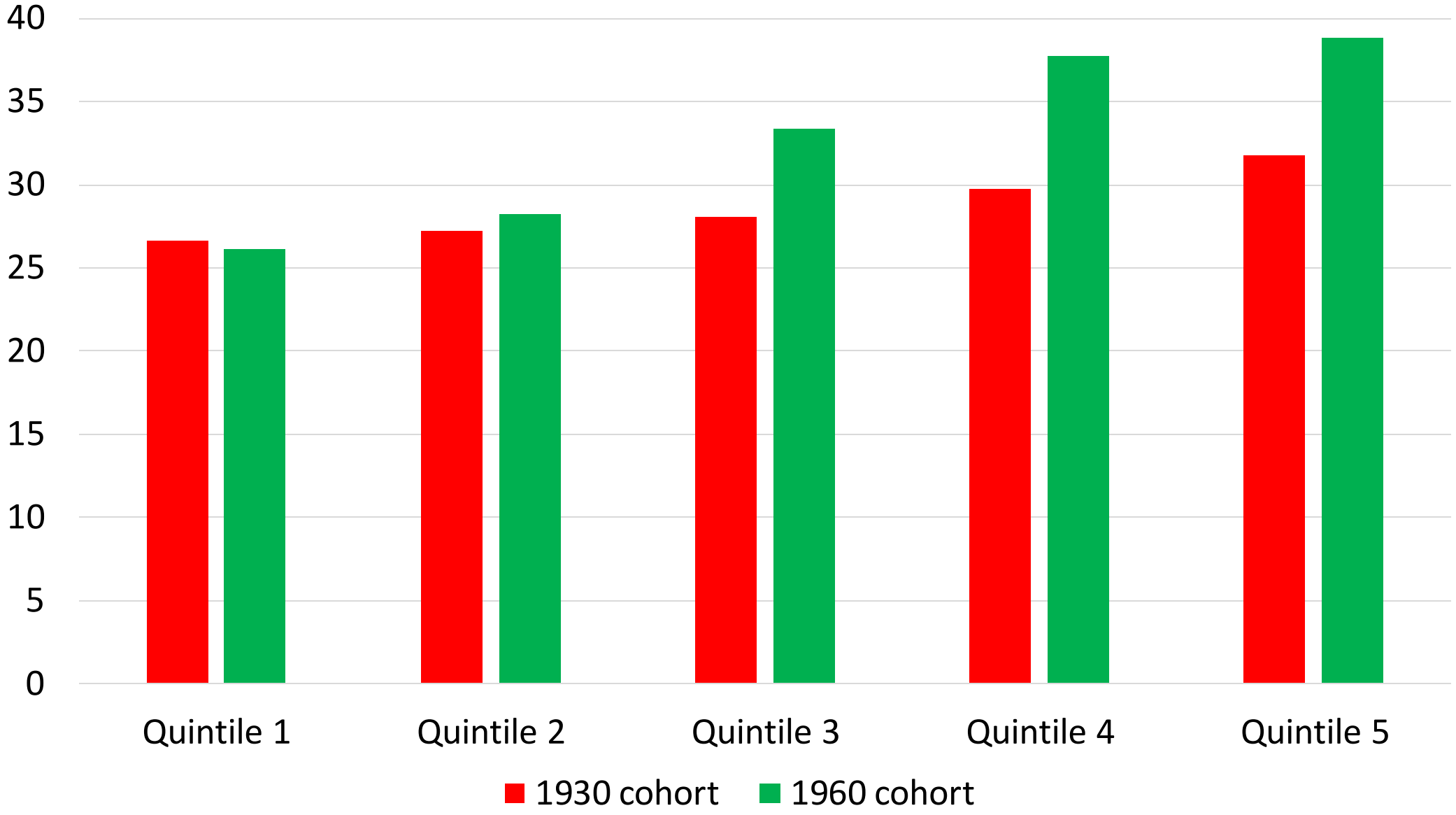
- Estimate the effects of tax and benefit programs using The Fiscal Analyzer (TFA), which tracks earnings and consumption behavior over different mortality paths under the assumption of consumption smoothing subject to borrowing constraints
  - Incorporate labor earnings path based on Current Population Survey
  - Build in retirement behavior based on American Community Survey
  - Incorporate differential mortality by resource group, based on recent estimates
    - Important because old-age benefits annuity-based

US Age 50 Life Expectancy by Income, Males



Source: Committee on the Long-Run Macroeconomic Effects of the Aging US Population (2015)

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- Estimate the effects of tax and benefit programs using The Fiscal Analyzer (TFA), which tracks earnings and consumption behavior over different mortality paths under the assumption of consumption smoothing subject to borrowing constraints
  - Lifetime Marginal net Tax Rates (LMTRs) are measured as the change in the present value of net taxes divided by the assumed increase in labor income

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- Estimate the effects of tax and benefit programs using The Fiscal Analyzer (TFA), which tracks earnings and consumption behavior over different mortality paths under the assumption of consumption smoothing subject to borrowing constraints
- Incorporate extremely detailed characterization of the rules of tax and transfer programs, at the federal and state levels

Table 4: List of Tax and Transfer Programs Included in TFA

Taxes	Personal Income Tax (federal and state) Corporate Income Tax (federal and state) FICA Tax (federal) Sales Taxes (state) Medicare Part B Premiums (federal) Estate and Gift Tax (federal)
Transfer Programs	Earned Income Tax Credit (federal and state) Child Tax Credit (federal) Social Security Benefits (federal) Supplemental Security Income (SSI) (federal) Supplemental Nutritional Assistance Program (SNAP) (federal and state) Temporary Assistance for Needy Families (TANF) (federal and state) Medicaid (federal and state) Medicare (federal) The Affordable Care Act (ACA) (federal and state) Section 8 Housing Vouchers (state and county) Energy Assistance (state) Childcare Assistance (state and county)

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- Incorporate extremely detailed characterization of the rules of tax and transfer programs, at the federal and state levels
  - Take account of incomplete transfer program take-up
    - Impute participation based on characteristics to match distribution in ACS

Table A4: Estimated Participation and Take Up of Public Assistance Programs

	Number of Participating Individuals ('000)	Number of Eligible Individuals ('000)	Take Up Rate (%)
SNAP	40,776	60,334	67.6
Housing Choice Voucher	5,249	46,559	11.3
Medicaid for Adults*	18,040	24,096	79.9
Medicaid for Children/CHIP**	35,953	38,370	93.7
ACA Subsidy	9,593	112,942	8.5
EITC	N/A	N/A	78.1
CTC	48,962	58,081	84.3
TANF	1,213	4,869	24.9
CCDF Childcare Subsidy	2,099	8,417	24.9

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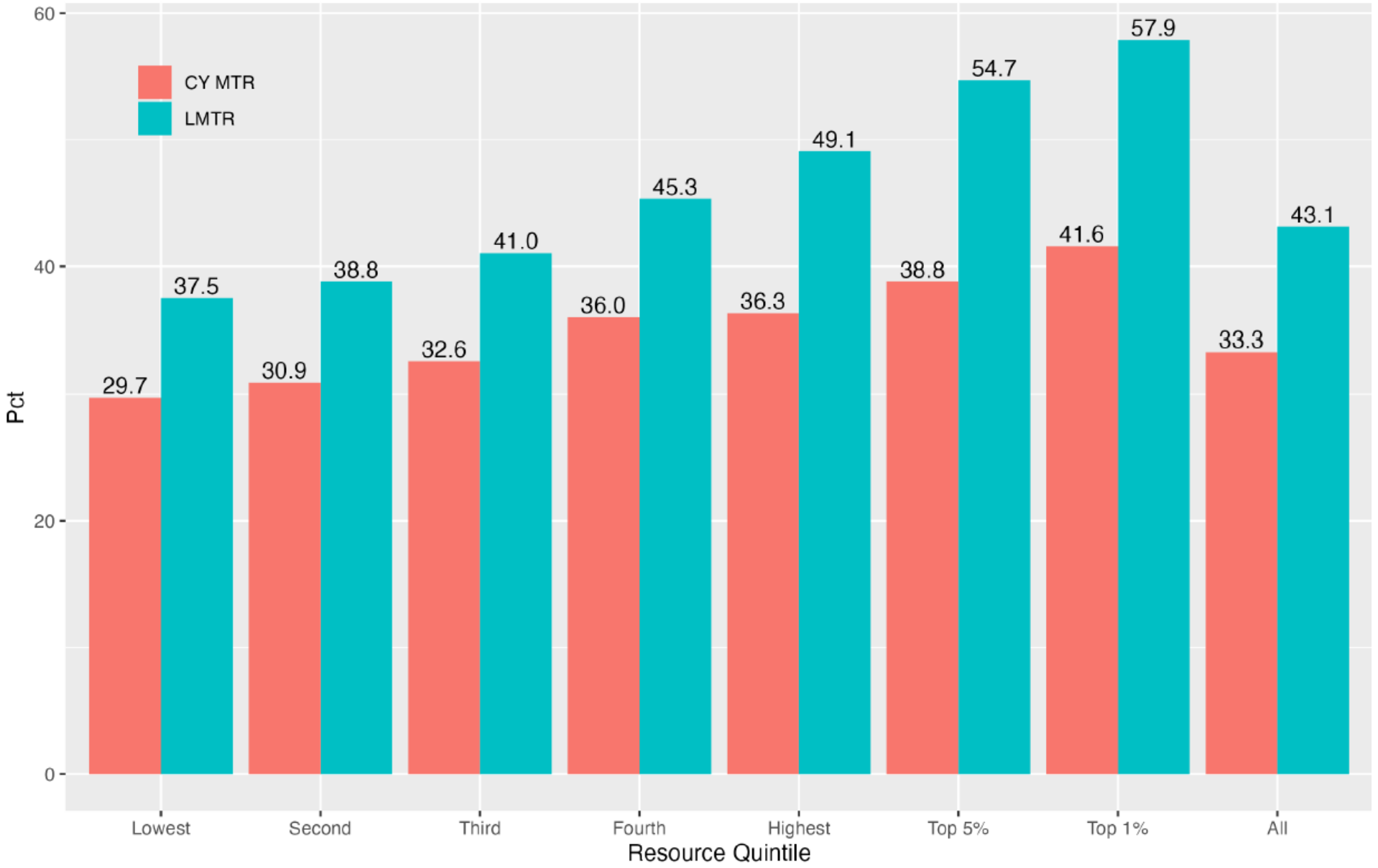
- Estimate the effects of tax and benefit programs using The Fiscal Analyzer (TFA), which tracks earnings and consumption behavior over different mortality paths under the assumption of consumption smoothing subject to borrowing constraints
- Incorporate extremely detailed characterization of the rules of tax and transfer programs, at the federal and state levels
  - Impute state residency to match distribution in ACS

Results (1)

- Median marginal tax rates increase with lifetime resources
- Median LMTRs are higher than CMTRs throughout the resource distribution

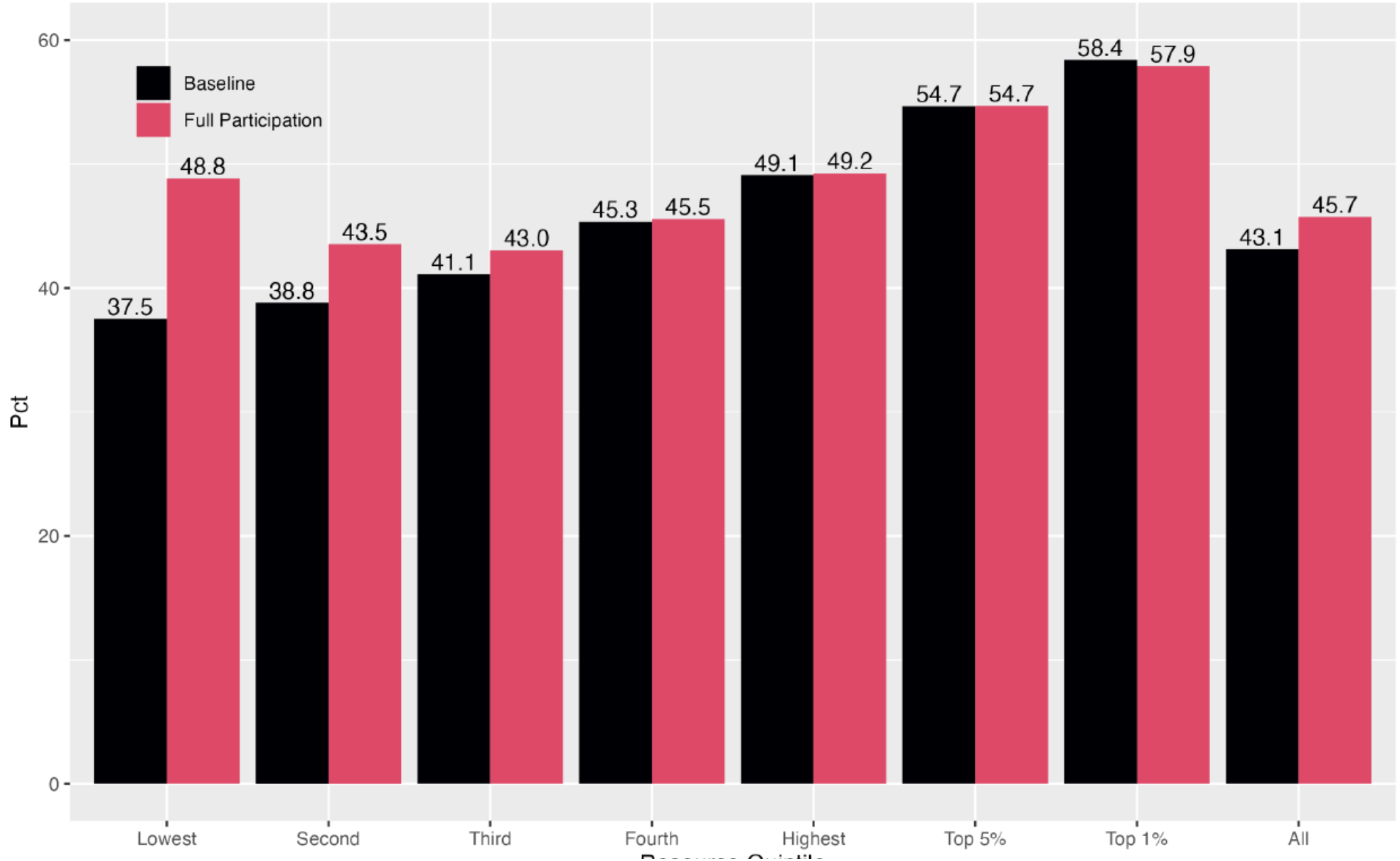
Figure 1: Median Lifetime and Current-Year MTR, Ages 20-69



Results (1)

- Median marginal tax rates increase with lifetime resources
- Median LMTRs are higher than CMTRs throughout the resource distribution
- Marginal tax rates would be u-shaped, rather than increasing, with resources if one assumed full program participation
  - More low-resource households would face high marginal tax rates due to a loss of benefits from earning more

Figure 2: Median Lifetime MTR By Welfare Participation Assumption, Ages 20-69



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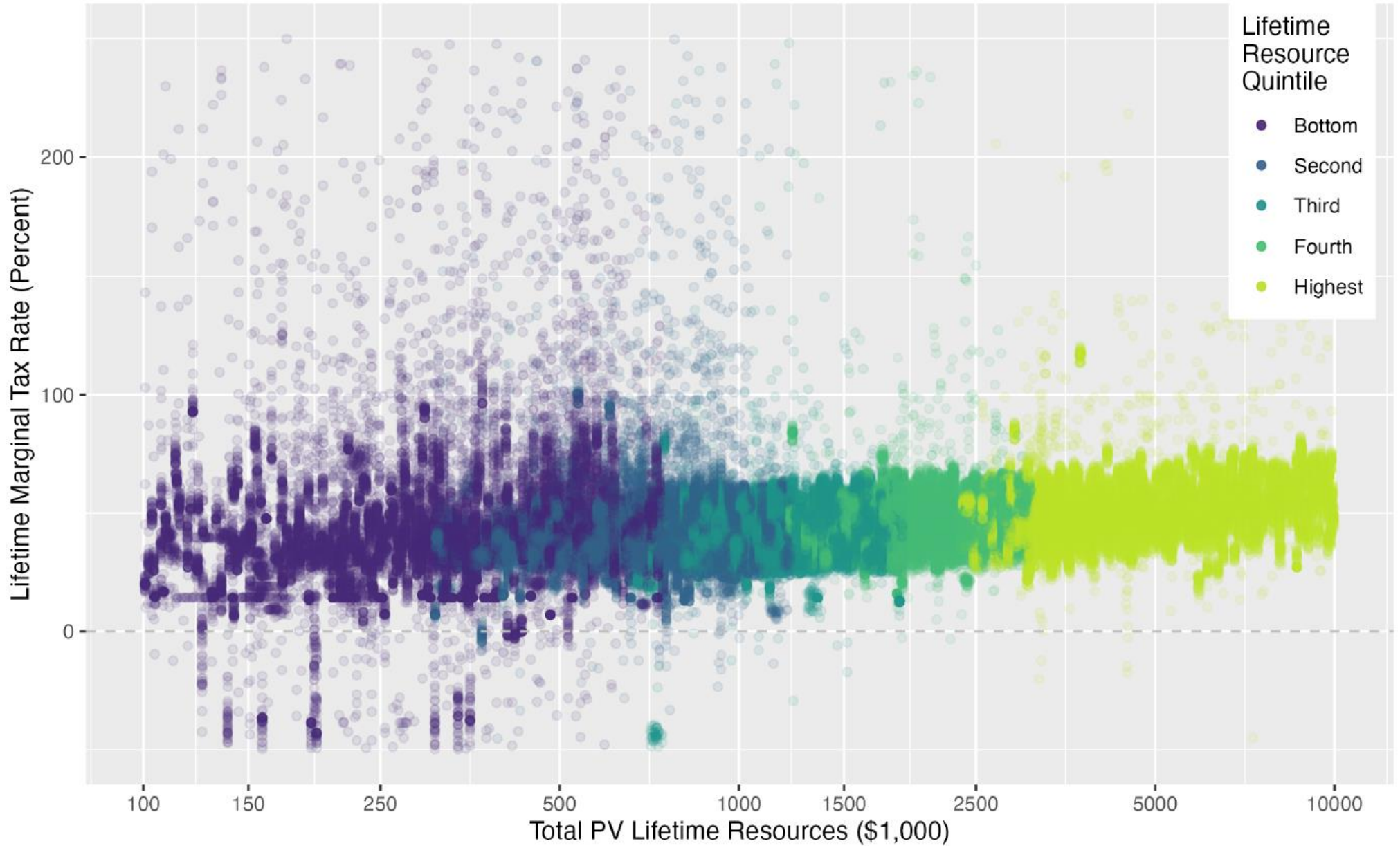
- Marginal tax rates would be u-shaped, rather than increasing, with resources if one assumed full program participation
- There is considerable dispersion in LMTRs, particularly at the bottom of the resource distribution

Figure 3: LMTR from $1,000 Earnings Increase in Current Year, Ages 20-69



Lifetime Marginal Tax Rates

Resource Group	q25	median	mean	q75	q90	std.dev
Bottom	25.3	37.5	43.3	49.7	69.8	439.5
Second	32.7	38.8	44.0	46.8	54.9	106.1
Third	34.2	41.0	41.4	48.5	54.7	33.2
Fourth	40.1	45.3	46.1	52.4	57.9	10.7
Highest	42.8	49.1	50.2	57.2	64.2	17.0
Top 5%	46.7	54.7	54.2	61.7	67.5	20.3
Top 1%	49.9	57.9	55.8	65.0	69.8	13.9
All	34.9	43.1	45.0	51.5	59.7	185.5

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- Median marginal tax rates increase with lifetime resources
- Median LMTRs are higher than CMTRs throughout the resource distribution
- Marginal tax rates would be u-shaped, rather than increasing, with resources if one assumed full program participation
- There is considerable dispersion in LMTRs, particularly at the bottom of the resource distribution
- Current-year MTRs are not a good indicator of Lifetime MTRs

Figure 4: Current-Year vs Lifetime Marginal Tax Rates from $1,000 Earnings Increase in Current Year, Ages 20-69

Results (2)

- Benefit loss is an important component of marginal tax rates among the poor

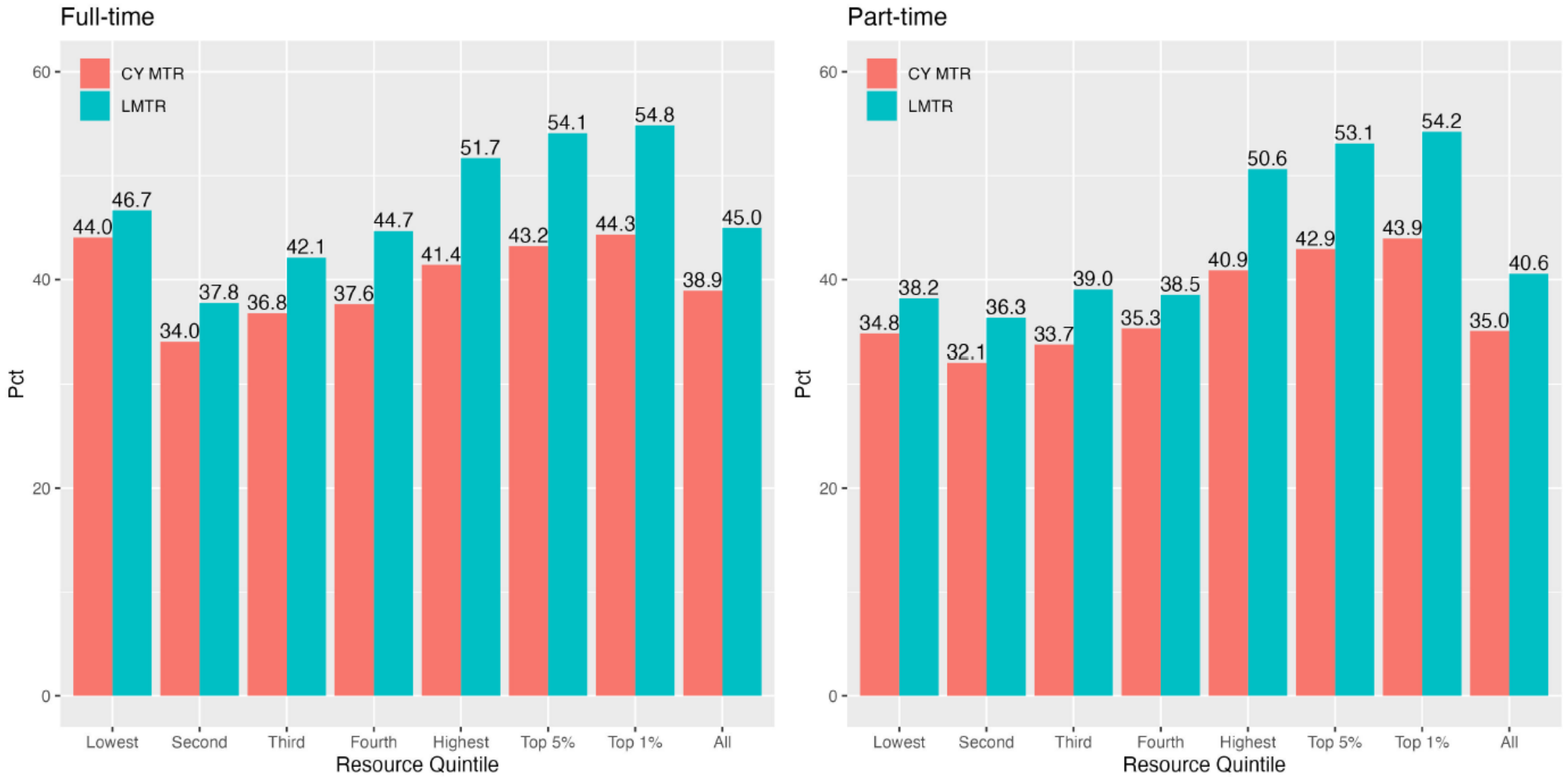
Table 6: Breakdown of LMTR and CMTR sources, Lowest Resource Quintile

	C Baseline	C Marginal	C Diff	L Baseline	L Marginal	L Diff
Federal Income Tax	2,467	2,625	158	31,119	31,298	179
State Income Tax	436	458	22	5,089	5,117	28
Other Taxes	2,123	2,186	63	35,853	35,944	92
Total Taxes	5,025	5,269	244	72,060	72,360	300
SNAP	1,131	1,096	-34	8,952	8,885	-66
TANF	47	46	-1	85	84	-1
Section 8	225	224	-1	2,119	2,118	-2
CCDF	530	498	-31	2,083	2,051	-32
Social Security	736	736	0	75,473	75,491	17
SSI	270	256	-14	5,499	5,471	-28
Other Transfers	4,581	4,550	-31	92,757	92,735	-22
Total Transfer Payments	7,520	7,406	-113	186,968	186,834	-134
Net Taxes	**-2,494**	**-2,138**	**356**	**-114,908**	**-114,474**	**433**

Results (2)

- Benefit loss is an important component of marginal tax rates among the poor
- The disincentive for labor force entry (rather than incremental income) is particularly high among the poor

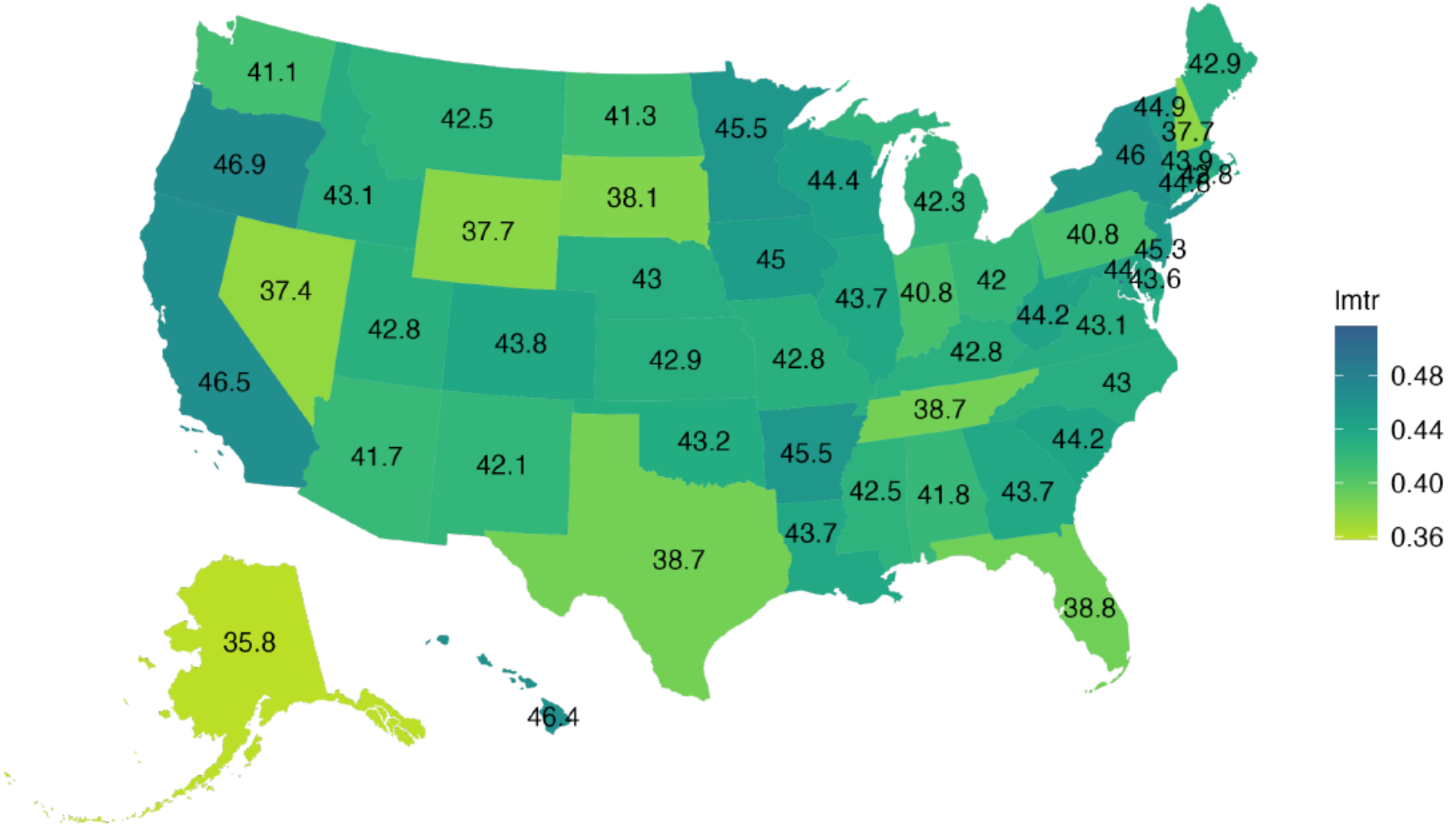
Figure 5: Median LMTR and CMTR From Labor Force Entry, Pre-Retirement Age and Non-working SCF Households



Results (2)

- Benefit loss is an important component of marginal tax rates among the poor
- The disincentive for labor force entry (rather than incremental income) is particularly high among the poor
- Marginal tax rates vary considerably across states, controlling for family characteristics

Figure 6: Cross-State Variation in Median LMTRs (Age 30-39, Lowest Resource Quintile)



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- Marginal tax rates vary considerably across states, controlling for family characteristics
- Equalizing marginal tax rates within each resource group could reduce efficiency loss from marginal tax rates considerably

Table 9: Percent Deadweight Loss By Resource Group, Imputed Welfare Participation

	Population Weighting			Income Weighting		
Res. Group	Low	Mid	High	Low	Mid	High
Bottom	12.3	18.2	24.1	8.9	13.2	17.5
Second	1.2	1.8	2.4	0.9	1.3	1.7
Third	0.3	0.4	0.5	0.3	0.4	0.5
Fourth	0.3	0.4	0.6	0.3	0.4	0.6
Highest	0.6	0.8	1.1	0.6	0.8	1.1
All	1.3	1.9	2.5	0.7	1.0	1.4

Conclusions