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Balancing Fairness: Public Evaluations of Vertical, Horizontal, and Exchange Equity in Tax

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Abstract

How individuals evaluate different dimensions of tax policy, and the fairness they perceive in each, plays a critical yet understudied role in shaping tax attitudes. We employ a multidimensional framework of distributive tax fairness (vertical, horizontal, and exchange equity) and test how citizens balance these dimensions in a conjoint survey experiment. We embed the experiment in a nationally representative survey of 1,264 Canadian adults, asking respondents to select which of two hypothetical tax profiles is fairer. We estimate average marginal component effects (AMCEs) of varying tax rates and benefit levels on fairness judgments. The results show a strong preference for progressive taxation, with vertical equity exerting the greatest influence on fairness evaluations of tax policy. Respondents also evaluated policies with significant disparities in tax rates among equal earners as less fair, although horizontal equity had a smaller overall effect. Exchange equity mattered as well, but its influence was more moderate, with diminishing returns as benefits increased. We perform additional analysis on key social and political segments, including income and political ideology, to evaluate how different subgroups assess tax fairness concerns.

Keywords: tax fairness, distributive justice, vertical equity, horizontal equity, exchange equity, conjoint analysis, public opinion

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1. Introduction

Perceptions of fairness are central to both public support for taxation (Barone & Mocetti, 2011; Citrin, 1979; Svallfors, 2013; Welch, 1985) and compliance with tax laws (Marshall et al. 2024; Pántya et al., 2016), making them a critical pillar of modern tax systems. Understanding how individuals evaluate tax fairness provides insight into the behavioral and normative foundations of economic policy attitudes. Although distributive tax fairness has long been studied – how tax burdens are allocated across taxpayers – much of the earlier work has tended to emphasize vertical equity, commonly operationalized as support for progressive taxation or redistribution through taxation (Kaplow, 1996; Cowell, 1992). This focus leaves unresolved how individuals reconcile potentially competing distributive principles when evaluating tax policies.

Tax fairness research shows that distributive tax fairness is not unidimensional. In addition to vertical equity, individuals may consider horizontal equity and exchange equity (Cuccia & Carnes, 2001; Maroney et al., 2002). Vertical equity is the notion that taxpayers with different incomes should pay different amounts in taxes, and that higher-income taxpayers should pay a disproportionately greater share of taxes (Musgrave 1959). Horizontal equity is the notion that taxpayers with similar incomes should pay similar amounts in income taxes. Exchange equity reflects the alignment between taxes paid and government benefits received. Marshall et al. (2024), in a meta-analysis of various types of fairness and tax compliance, find that distributive fairness is the most consistent predictor of compliance, with the strongest effects emerging from exchange equity versus vertical equity and horizontal equity. These findings raise questions about the extent to which judgments of tax fairness are driven by concerns about vertical equity, such as progressivity, versus other distributive dimensions like horizontal and exchange equity.

While previous studies have broadened the conceptual scope of tax fairness (e.g., Farrar et al., 2020; Alm et al., 2010), most examine individual fairness principles in isolation or rely on stylized survey items that do not capture the tradeoffs inherent in real-world tax design. Asking a single survey question about one fairness dimension and then using it as a predictor in a regression model can obscure how multiple fairness logics operate simultaneously in decision-making. In practice, individuals may consider a combination of fairness principles that pull in different directions. If respondents weigh these dimensions differently depending on policy context or subgroup characteristics, theoretical approaches may mischaracterize the micro-foundations of tax preferences and compliance behavior.

This paper takes a first step toward addressing these issues. Using a distributive justice framework, we examine how respondents assess tax policy fairness when presented with competing attributes that reflect vertical, horizontal, and exchange equity. While other tax fairness dimensions such as procedural justice and informational justice may also relevant, we restrict our scope to distributive fairness, which remains central in both theory and empirical work (Marshall et al. 2024). We deliberately keep this grouping narrow for conceptual coherence and to avoid overwhelming respondents with too many dimensions, particularly in a complex policy domain like taxation. We see this as an initial effort to measure how citizens prioritize different distributive logics when evaluating tax policy, while leaving future research to expand the scope to other dimensions of fairness.

We address two questions. First, how do Canadians weigh the relative importance of vertical, horizontal, and exchange equity when evaluating the fairness of tax policies? Second, how does the prioritization of these fairness dimensions vary across respondent characteristics such as political ideology, age, income, and tax knowledge?

Our empirical strategy relies on a conjoint survey experiment embedded in a nationally representative sample of 1,264 Canadian adults. The design enables us to isolate the marginal effects of each fairness dimension on respondents' evaluations of hypothetical tax profiles. Canada represents a typical case for this analysis. It is a high-capacity OECD democracy with low levels of tax noncompliance, widespread support for the welfare state, and a longstanding tradition of progressive taxation. In this context, fairness judgments are more likely to shape public opinion than concerns about enforcement or institutional breakdown.

We find that vertical equity is the most influential component, with respondents consistently rating profiles where the wealthy pay higher rates as fairer. Exchange equity has a moderate but consistent effect, with individuals preferring tax-benefit matches and penalizing both surpluses and deficits. Horizontal equity plays a smaller role and is only salient in cases of large disparities between similar earners. These results are stable across specifications and validation checks. Across subgroups, we observe variation in how respondents weigh fairness dimensions. Left-leaning individuals place greater emphasis on vertical and exchange equity compared to right-leaning respondents. Younger respondents assign more weight to exchange equity, while lower-income respondents place more emphasis on vertical equity. We find that greater or lesser technical understanding of the tax system, as measured by tax knowledge, does not produce systematic differences in fairness judgments. The next section reviews existing research on tax fairness, compliance, and tax policy preferences, highlighting gaps between these literatures.

2. Related literature

In this section we review two streams of literature to situate our study. The first stream pertains to distributive justice (fairness). The second pertains to tax fairness and respondent characteristics. Each is discussed in turn.

2.1 Tax fairness as distributive justice

In general, fairness is a perception (Messick & Sentis, 1979) and is a comparative judgment (Li et al., 2017). For a fairness perception to occur, an individual must have a comparative reference point, which can be actual or imagined (Van den Bos & Van Prooijen, 2001). After the comparison occurs, an individual can perceive fairness (if the comparison matches their expectations) or unfairness (if the comparison does not match their expectations). Fairness is important because perceptions of fairness lead to cooperative and compliant attitudes and behaviours whereas perceptions of unfairness lead to uncooperative and retaliatory attitudes and behaviours (Skarlicki et al., 1999).

Building on fairness models from organizational justice research (Colquitt, 2001), tax scholars have conceptualized tax fairness as a multidimensional construct, with particular emphasis on distributive fairness, that is, the perceived equity of tax burdens and benefits across different taxpayers. Within the tax compliance literature, three primary dimensions of distributive fairness have been widely recognized: horizontal equity, vertical equity, and exchange equity (Maroney et al., 2002; Marshall et al., 2024). Horizontal equity is 'equal treatment of equals' and means that taxpayers who have similar incomes and similar circumstances should pay similar amounts of income taxes. Vertical equity is 'unequal treatment of unequals' and means that taxpayers who have dissimilar incomes should pay dissimilar amounts of income taxes (Musgrave & Musgrave, 1989). Vertical equity also captures the notion of tax progressivity, which is that wealthier taxpayers should not only pay more in income taxes than less wealthy

taxpayers but should pay taxes at a higher rate. Exchange equity pertains to the notion of value-for-money when taxpayers receive public goods, paid for by their tax dollars.[1]

Meta-analytic findings suggest that exchange equity exerts the strongest influence on compliance, followed by vertical equity, with horizontal equity having a weaker but still notable effect (Marshall et al., 2024). This research underscores that fairness is not a single construct but rather a set of distinct fairness considerations that taxpayers weigh when assessing allocative aspects of a tax system. However, while tax compliance research has established that positive fairness perceptions encourage compliance, far less is known about how these same fairness dimensions shape public evaluations of the fairness of tax policies.

Although tax fairness research has examined vertical, horizontal, and exchange equity, prior studies have typically treated these dimensions in isolation (Marshall et al., 2024), leaving open the question of how individuals weigh the relative importance of these fairness considerations when evaluating tax policies. This evaluation is particularly important because tax policy decisions often require balancing these concerns. For example, a policy can enhance vertical equity while weakening horizontal equity: the U.S. Earned Income Tax Credit is designed to support low- and moderate-income workers, but eligibility and credit size vary sharply by family circumstances (especially the number of qualifying children), meaning households with similar earnings can face different net tax burdens. A different trade-off appears in exchange equity: in Canada, Old Age Security is financed through general tax revenues rather than individual contributions, while the Canada Pension Plan is contributory and retirement benefit amounts are calculated based on contribution history and earnings. Conversely, reforms that simplify the income tax by adopting a flat rate and limiting tax exemptions (e.g., Estonia's 1994 flat personal income tax) can strengthen equal treatment at a given income level while reducing progressivity.

Additionally, this paper builds on existing tax research about distributive fairness perceptions by examining how these fairness perceptions intersect with individual-level characteristics, including ideological polarization, political knowledge, generational differences, and economic self-interest. Rather than treating fairness considerations as independent determinants of tax preferences, we investigate how individuals' prioritization of vertical, horizontal, and exchange equity is reflected in their fairness evaluations of tax policies. Given that tax fairness is not merely an abstract concept but one that informs real-world policy debates, understanding how fairness concerns reflect deeper political and economic divisions provides a more comprehensive picture of public attitudes toward taxation. The next section situates tax fairness within these broader policy debates, outlining how ideological differences, knowledge gaps, generational dynamics, and redistributive preferences moderate fairness evaluations.

[1] Musgrave & Musgrave (1989, p. 218) note that an equitable tax system means that "each taxpayer should contribute his or her fair share to the cost of government. But there is no such agreement about how the term fair share should be defined." They also note that two lines of reasoning are typically brought to bear on this discussion. One is the so-called benefit principle, in which "an equitable tax system is one under which each taxpayer contributes in line with the benefits which he or she receives from public services" (p. 219). The other is the ability-to-pay principle. Musgrave & Musgrave (1989, p. 223) comment, "Taxation according to ability to pay calls for people with equal capacity to pay the same, and for people with greater ability to pay more. The former is referred to as horizontal equity and the latter as vertical equity." Thus, the benefit principle relates to exchange equity and the ability-to-pay principle relates to both horizontal equity and vertical equity. Musgrave & Musgrave (1989) also note that the benefit principle dates back to at least the time of economist Adam Smith (died 1790) and that the ability-to-pay-principle dates to the sixteenth century and thus predates the benefit principle. Spicer & Lundstedt (1976, p. 296) may have been the first to label the benefit principle as "exchange equity", as they wrote, "A taxpayer may be seen as exchanging purchasing power in the market in return for government service."

2.2 The Intersection of Tax Fairness and Respondent Characteristics

While tax fairness has traditionally been studied as a discrete concept within the tax compliance and tax policy literatures, it is deeply intertwined with broader policy debates concerning ideological polarization, issue-specific knowledge, generational differences, and redistribution. Tax policy preferences are shaped by larger political, economic, and informational contexts that influence how individuals assess taxation and government spending. Understanding how individuals weigh vertical, horizontal, and exchange equity requires examining tax fairness through these broader theoretical frameworks, rather than as an independent determinant of fiscal preferences. The following section identifies four moderating factors that we expect will interact with dimensions of distributive fairness, beginning with ideological differences, one of the strongest predictors of taxation and spending attitudes (Rudolph & Evans, 2005), as well as tax knowledge, generational differences, and economic self-interest.

2.2.1 Ideological differences

The three distributive fairness dimensions (vertical, horizontal, and exchange equity) are unlikely to be ideologically neutral as they reflect and reinforce broader divides over taxation and redistribution. Vertical equity remains one of the most contentious points in fiscal politics, with conservatives generally opposing steeply progressive tax rates and progressives advocating for higher taxation of top earners to reduce inequality (Ballard-Rosa et al., 2017). Exchange equity plays a central role in debates over the welfare state, where conservatives tend to favor policies that maintain a closer link between contributions and government-provided benefits, while progressives support broader redistribution through public goods and social programs (Rudolph, 2009, Tuxhorn et al., 2019). Horizontal equity is often viewed as less ideologically charged. However, it can serve as a justification for both progressive and regressive policies, depending on how tax deductions and credits are structured.

Building on these distinctions, we compare how left-, center-, and right-leaning respondents evaluate vertical, horizontal, and exchange equity in tax policy to assess the extent to which fairness evaluations differ by ideology. This empirical analysis contributes to broader discussions on political polarization and taxation (e.g., Bremer & Bűrgisser, 2025; Kuehnhanss & Heyndels, 2018; Lozza et al., 2013) by identifying whether fairness evaluations reflect deeper ideological commitments or are shaped by alternative considerations, such as economic self-interest, discussed subsequently.

2.2.2 Tax knowledge

Tax policy preferences are also influenced by tax knowledge and information availability. Policy research has consistently shown that many citizens have a limited understanding of how taxation and redistribution function, leading to attitudes that may appear inconsistent or misaligned with material interests (Eriksen & Fallan, 1996; Bartels, 2005). For example, some individuals strongly support public services yet oppose the taxation required to sustain them due to unfamiliarity with government budgets, a pattern that aligns with the "something for nothing" hypothesis (Citrin, 1979; Sears & Citrin, 1982). Others may hold inaccurate perceptions of the distributional impact of tax policies, underestimating the degree of progressivity or misidentifying which income groups benefit most from tax expenditures (Bartels, 2005, Kuziemko et al., 2015). These informational gaps can have significant implications for fairness perceptions, shaping how individuals interpret the legitimacy of tax burdens and government spending.

The influence of tax knowledge is especially relevant when examining horizontal and exchange equity preferences. Citizens who are more informed about tax policy may be more tolerant of tax deductions and credits that create horizontal inequities, understanding them as instruments for economic incentives (e.g., tax breaks for homeowners or students). Conversely, less-informed citizens may see such policies as unfair or arbitrary. Similarly, knowledge about government spending could shape attitudes toward exchange equity, with uninformed respondents potentially underestimating the extent to which they benefit from public goods and social programs. In the analysis section, we assess whether tax knowledge moderates fairness evaluations. Specifically, we test whether individuals with better tax knowledge exhibit different patterns of evaluation compared to those with limited knowledge.

2.2.3 Generational differences

Generational differences play a significant role in shaping political and economic attitudes, particularly concerning redistribution and taxation. Younger and older generations experience taxation and government benefits differently: younger individuals often pay taxes without yet receiving major government transfers such as pensions or healthcare subsidies, whereas older individuals are more likely to rely on state benefits. Prior research suggests that age and life-cycle effects significantly influence perceptions of tax equity. For instance, older individuals, particularly those currently taxed on social security benefits, respond more positively to exchange equity explanations for taxation (Maroney et al., 2002). Conversely, younger participants may prioritize long-term equity exposure in pension funds, with a one-year increase in average age of active participants leading to a 0.5 percentage point reduction in strategic equity exposure (Bikker et al., 2012).

Existing research suggests that these generational divides extend to perceptions of tax fairness and compliance. Jurney et al. (2017) found that Millennials were less likely to support progressive taxation than Gen X and Baby Boomers, potentially reflecting concerns about future tax burdens relative to expected benefits. However, their study also found that Baby Boomers' views on exchange equity differ significantly from both Millennials and Gen X respondents. MacManus (1995) argued that intergenerational competition over tax-funded benefits is intensifying, with older generations increasingly advocating for higher taxes to sustain government programs, while younger generations lean toward fiscal restraint. This shift represents a reversal from past trends, where younger voters traditionally favored higher taxation and redistribution.

If younger individuals exhibit fairness judgments in favor of vertical and exchange equity, this finding suggests that shifting economic conditions are reshaping public attitudes toward taxation across age groups. Furthermore, if older respondents demonstrate greater concern for exchange equity and sustaining government benefits, the finding would reinforce the argument that generational shifts in taxation attitudes are driven not only by ideology but also by economic self-interest and life-cycle effects.

Beyond these vertical and exchange equity considerations, studies by Mangoting et al. (2020) and Tjondro et al. (2019) indicate that Millennials and Gen Z have different perceptions of tax audits compared to older generations. While these studies focus primarily on compliance behavior rather than fairness evaluations, they highlight how generational perspectives on taxation are shaped by broader economic and social conditions. Importantly, they suggest that younger generations may also respond differently to tax policies affecting horizontal equity, particularly in contexts where tax enforcement mechanisms are perceived as inequitable.

2.2.4 Economic self-interest

Assessments of tax fairness are deeply intertwined with broader support for redistribution (Korpi & Palme, 1998; Beramendi & Rehm, 2016). Individuals' willingness to redistribute wealth through taxation is shaped by multiple factors, including economic self-interest and beliefs about economic deservingness (Alesina & Angeletos, 2005; Fong, 2001).

Vertical equity aligns most directly with redistribution, as progressive taxation serves as a primary mechanism for reducing income inequality. However, the extent to which citizens evaluate redistribution as fair also depends on their views of exchange equity and horizontal equity. For example, individuals skeptical of redistribution may oppose exchange equity if they perceive it as enabling excessive government spending. Alternatively, those who favor redistribution may tolerate greater horizontal inequities if they view tax deductions and credits as progressive policy tools. If lower-income respondents are more likely to evaluate vertical and exchange equity as fair, it would support the argument that economic self-interest shapes redistributive fairness judgments. Conversely, if high-income respondents show limited opposition to evaluating progressive taxation as fair, this finding suggests that fairness evaluations of redistribution extend beyond purely material considerations. Thus, we believe that economic self-interest, proxied by relative income level, can impact individuals' perceptions of tax fairness.

3. Data and Methods

To investigate how Canadians judge tax fairness across various dimensions of distributive justice, we conducted a survey of 1,264 Canadian adults through EKOS Research Associates' Probit online survey panel. The survey was fielded between August 1 and August 11, 2024, with a median completion time of 11.6 minutes. The EKOS Probit panel is a probability-based panel designed to represent the general Canadian population, including both online and offline participants, as well as those who use only cell phones or landlines. The panel consists of over 120,000 randomly recruited individuals, all of whom are initially contacted by telephone using random digit dialing (RDD), and recruitment is confirmed through live interviews. The recruitment process mirrors the demographic composition of Canada as defined by Statistics Canada, ensuring that the panel is representative of the general population. No financial incentives are provided to panel participants.

The core of the survey is a conjoint analysis designed to evaluate how Canadians weigh various aspects of tax fairness when considering tax policy options. Rather than asking respondents directly about each fairness dimension in isolation, which risks eliciting socially desirable responses or obscuring fiscal trade-offs, the conjoint approach forces respondents to make realistic choices between various forms of fairness. By randomly varying tax policy profiles along multiple fairness dimensions, the conjoint design provides a causal estimate of how much weight individuals assign to vertical, horizontal, and exchange equity in their decision-making. This method captures implicit preferences that may not be fully articulated in direct survey responses. This method has also been previously applied to elicit preferences for varying tax policy attributes, e.g., regarding tax rate and tax base changes (Blaufus et al., 2013).

As previously discussed, vertical equity is a central feature of tax systems, particularly in democracies, as it underpins progressive taxation by ensuring that higher-income individuals contribute a greater share of their earnings. To evaluate fairness perceptions of progressivity, our study presented respondents with scenarios where a lower-income taxpayer consistently paid 20% of income in taxes, while the rate for a wealthier individual varied across five levels: 16%, 20%, 24%, 28%, and 32%. Fixing the lower-income rate at 20% created a stable reference

point, allowing us to isolate judgments about the distribution of tax burdens and measure support for systems ranging from regressive (16%) to moderately progressive (32%). To maintain clarity and comparability, broad categories of "poor" and "rich" were deliberately selected rather than assigning specific income values. This approach mitigates potential biases in income classification, where perceptions of "middle class" or "high income" vary among respondents. By framing the comparison in relative rather than absolute terms, we ensure that fairness evaluations of vertical equity capture attitudes toward progressivity itself, rather than confounding effects tied to subjective income thresholds.

Horizontal equity, in contrast, pertains to the idea that individuals with the same income should be taxed at the same rate. To examine respondents' tolerance for differential tax treatment, we systematically varied the tax burden between two taxpayers with identical earnings by adjusting their access to deductions and credits. Scenarios included both taxpayers paying an identical rate of 20% or one taxpayer receiving deductions that reduced their rate to 16%, 12%, 8%, or 4%, while the other remained at 20%. By mirroring real-world tax policy structures, where deductions and credits often create effective tax rate differences among similarly situated taxpayers, this approach provides insight into the conditions under which tax structures are judged as fair or unfair with respect to horizontal equity.

Exchange equity formed the third central dimension of our conjoint design, capturing perceptions of fairness in the balance between taxes paid and government benefits received. This dimension examines the extent to which individuals feel they are getting a fair "deal" from the government in exchange for their tax contributions. The attributes varied amounts of benefits and services received for every $100 paid in taxes, ranging from $140 to $60. By offering a range of scenarios from highly favorable (receiving $140 in benefits) to less favorable (receiving only $60), we aim to gauge how respondents balance the trade-off between tax payments and perceived returns.

This focus on exchange equity also ties into the "something for nothing" hypothesis, introduced by Anthony Downs. Downs (1957) argued that citizens often perceive a mismatch between the visible costs of taxation and the less visible benefits of public spending. Taxes are highly salient, as they appear explicitly on paychecks and tax bills, while the benefits from public spending are more implicit and taken for granted. This disconnect can lead to a policy bias against taxes, even when people value the services funded by those taxes. The "something for nothing" hypothesis suggests that citizens desire high levels of public spending but are unwilling to support the corresponding tax levels required to fund those services (Citrin, 1979; Hansen, 1998; Sears & Citrin, 1982). By varying the balance between taxes paid and benefits received, our design also enables us to test whether citizens judge scenarios where benefits exceed taxes as fairer, or whether they are willing to accept a balanced exchange. These tests allow us to evaluate whether observed tensions in fairness evaluations stem from unrealistic expectations for public spending relative to taxes paid or instead reflect more pragmatic views on the trade-off between contributions and benefits.

Table 1 outlines the dimensions and their corresponding attributes. The conjoint analysis was conducted using the Qualtrics platform, which does not allow for randomized ordering of the dimensions. To minimize potential order effects, we created two versions of the survey. In the first version, the dimensions were ordered as follows: vertical equity, horizontal equity, and exchange equity. In the second version, the dimensions were ordered as follows: horizontal equity, exchange equity, and vertical equity.

[insert Table 1 about here]

Figure 1 presents a screenshot of the conjoint analysis task as it appeared to respondents during the survey. Each respondent reviewed five pairs of tax policy profiles, with attributes randomly assigned across the three fairness dimensions. For each pair, respondents answered two questions: "Which tax policy do you think is more fair?" and "Which tax policy do you prefer?" Our primary dependent variable is the fairness question. This binary measure is coded as "1" if a profile was selected as the fairer option in a given pair and "0" otherwise. The preference question is used in the supplementary material as a robustness check to confirm the consistency of our main findings.

We regress this fairness judgment on dummy variables for each attribute within the three tax fairness dimensions, using the parity conditions as baselines: "poor pays 20%, rich pays 20%" for vertical equity; "both pay 20% (identical credits and deductions)" for horizontal equity; and "a taxpayer receives $100 in benefits and services" for exchange equity. These baselines reflect neutral scenarios, equal treatment for similar or dissimilar taxpayers and a balanced exchange between taxes paid and benefits received, against which departures can be interpreted as judgments of greater or lesser fairness.

[insert Figure 1 about here]

Before beginning the survey, all respondents were presented with a consent form outlining the purpose of the study, eligibility criteria, and their rights as participants. After providing consent, participants answered several demographic questions. These included basic information such as age, race, gender, employment status, education level, and province of residence.

In addition to demographic questions, we included several measures aimed at analyzing differences in fairness perceptions across subgroups, allowing us to explore heterogeneous effects related to key moderators: age, income, ideology, and tax knowledge. Respondents were asked a self-placement question to assess their political ideology on a left-right scale. Household income and age are used to examine economic and generational differences in perceived fairness. Additionally, we included measures of tax knowledge to explore whether familiarity with the tax system influenced respondents' evaluations of fairness. A full list of survey questions and responses is included in the supplementary material.

4. Results

The analysis estimates the average marginal component-specific effect (AMCE) of a change in traits of one of our three tax fairness dimensions (vertical equity, horizontal equity, and exchange equity) on the probability that a tax policy profile is judged by the respondent as more fair (Hainmueller et al., 2014). Following the estimation procedure proposed by Hainmueller et al. (2014), we estimate AMCE using simple linear regression estimators (OLS, ordinary least squares), with standard errors clustered by the respondent to account for potential non-independence in the data associated with correlated errors within-subjects. We use survey weights for all models. The cases were weighted using the 2021 Canadian Census data across age, gender, region, and education level. The unit of analysis is the rated tax policy profile, summing to 12,640 observations in total (5 comparisons of paired profiles x 2 tax policy profiles per comparison x 1,264 respondents).

Figure 2 contains a coefficient plot showing the main results from the conjoint analysis. The dots represent the point estimates, and the lines indicate 95% confidence intervals for the AMCE of each attribute value on the probability that respondents selected a particular tax policy profile as the fairer choice. The reference categories (Vertical: poor 20%, rich 20%;

Horizontal: both 20%; Exchange: $100 benefits) are represented as dots centered on zero, without confidence intervals.

[insert Figure 2 about here]

Starting with the exchange equity dimension, we find that respondents demonstrated a curvilinear pattern in fairness judgments, with the baseline of receiving $100 in benefits emerging as the point of reference. Profiles where taxpayers received less than $100 were penalized: receiving only $60 in benefits reduced the probability of being judged fairer by 7.1 percentage points (SE = 1.7, $p < 0.01$), and receiving $80 reduced it by 3.7 percentage points (SE = 1.6, $p = 0.02$). Profiles with more than $100 in benefits also saw declines: receiving $120 lowered the probability of selection by 2.8 percentage points (SE = 1.6, $p = 0.09$), and receiving $140 reduced it by 7.9 percentage points (SE = 1.7, $p < 0.01$). This pattern indicates that respondents favor a balanced exchange, where benefits align with contributions, and view both shortfalls and windfalls as less fair. Notably, these findings run counter to the expectations of the something for nothing hypothesis, which predicts that citizens would prefer policies where benefits substantially exceed taxes paid.

Regarding vertical equity, respondents consistently saw tax policies as fairer when wealthier individuals bore a greater share of the tax burden relative to the parity baseline (poor pays 20%, rich pays 20%). When the rich paid only 16% (a regressive scenario) the probability of being judged fairer fell by 19.3 percentage points (SE = 1.5, $p < 0.01$). By contrast, when the rich paid 24%, the probability of selection increased by 15.3 percentage points (SE = 1.6, $p < 0.01$); at 28%, it increased by 19.5 percentage points (SE = 1.8, $p < 0.01$); and at 32%, by 19.8 percentage points (SE = 2.0, $p < 0.01$). While the effect tapers at the highest levels, the overall pattern underscores a strong public tendency to evaluate progressive taxation as fairer.

For the horizontal equity dimension, where taxpayers with the same income are taxed differently due to credits or deductions, respondents generally penalized deviations from equal treatment relative to the baseline of both paying 20%. Smaller disparities produced negligible and statistically insignificant effects (–0.8 percentage points when one paid 16%; –1.3 percentage points when one paid 12%). Larger disparities generated stronger penalties: when one taxpayer paid only 8%, the likelihood of selection dropped by 3.6 percentage points (SE = 1.7, $p = 0.04$), and when one paid only 4%, the penalty reached 10 percentage points (SE = 1.8, $p < 0.01$). These results indicate that respondents are tolerant of minor horizontal inequities but penalize extreme differences as unfair.

In comparing the three dimensions, vertical equity had by far the largest influence on respondents' judgments about the fairness of tax policy profiles. The increase in the probability of selection as the tax rate for the wealthy rises, 39.1 percentage points from a 16% tax rate to a 32% tax rate, demonstrates that respondents strongly favor progressive taxation. This result aligns with broader discussions in both academic literature and public discourse, where taxation is frequently viewed as a primary mechanism for income redistribution. The importance of progressive taxation is often highlighted in policy debates in the news and casual conversations about fairness, particularly in discussions about reducing income inequality. Given the public's growing awareness of wealth disparities, the clear preference for taxing the wealthy more heavily reflects a shared belief that taxes should play a key role in redistribution.

By contrast, exchange equity had a more modest but still significant impact on respondents' fairness evaluations, particularly when benefits deviate from taxes paid. The decrease in selection probability for both shortfalls and windfalls suggests that respondents prioritize reasonable returns for taxes paid but do not expect excessive benefits. Horizontal equity, while influential, had a lesser effect compared to vertical equity. Although respondents disapproved

of large disparities in tax rates between taxpayers with the same income, the penalties for horizontal inequity were less pronounced than the priority for progressive taxation.

4.1 Results by respondent characteristics

The baseline results provide a broad understanding of how different dimensions of tax fairness (vertical equity, horizontal equity, and exchange equity) influence fairness evaluations of tax policies. However, our empirical design allows for a more nuanced analysis by examining how these effects vary across key respondent characteristics. As discussed earlier, tax policy preferences are shaped not only by perceptions of the tax system itself but also by broader political, economic, and informational contexts. Which tax policy is seen as fairer may reflect the individuals' financial circumstances, ideological commitments, and levels of tax knowledge, rather than being solely determined by abstract fairness principles. To analyze potential differences between groups of respondents, we rerun our main analysis using sample splits based on the respective respondent characteristic. To assess the significance of differences in effects, we additionally rerun regressions including interaction terms between the three dimensions of fairness and respondent characteristics (ideological differences, tax knowledge, generational differences, economic self-interest).

4.1.1 Ideological differences

Given the increasing ideological polarization in Western democracies, including Canada, fairness evaluations are likely to reflect these broader divides. To explore whether there are ideological differences in fairness judgements, we examine how respondents identifying as left, center, and right view different dimensions of tax fairness. These ideological distinctions allow us to evaluate whether fiscal conservatism or liberalism shapes fairness judgments about redistribution and equity in tax policy. To classify respondents by political ideology, we used a survey question asking, "Where would you place yourself on a scale from 0 to 10, where 0 means left and 10 means right?" Respondents selected a position on this scale, which we then recoded into three broad ideological categories: left, center, and right. Specifically, we recoded responses as follows: scores of 0 to 4 were categorized as "left," a score of 5 was categorized as "center," and scores of 6 to 10 were categorized as "right."

We present the results of ideological differences across the three fairness dimensions in Figure 3. Our analysis indicates that respondents on the political left exhibit a strong preference for policies with high levels of redistribution across all dimensions. For example, they strongly evaluate progressive taxation as more fair within the vertical equity dimension.[2] This aligns with a view that tax systems should act as mechanisms for redistribution, ensuring a fairer distribution of wealth. In exchange equity, left-leaning respondents tend to judge profiles as unfair when benefits fall short of taxes paid, reflecting support for a strong welfare state. They show tolerance for horizontal disparities but penalize extreme differences in tax burdens for individuals with the same income.

[2] Among respondents on the left, moving from the parity baseline where both poor and rich pay 20% to a regressive structure where the rich pay only 16% lowered the probability of a profile being judged as fairer by 18.0 percentage points (SE = 2.1, $p < 0.01$). By contrast, increasing the tax rate for wealthy individuals to 24% raised the probability of being judged fairer by 22.3 percentage points (SE = 2.3, $p < 0.01$), and at 28% by 31.7 percentage points (SE = 2.5, $p < 0.01$). The strongest fairness evaluations appeared at 32%, which increased the probability by 36.5 percentage points (SE = 2.6, $p < 0.01$), demonstrating overwhelming support among left-leaning respondents for progressive taxation.

[insert Figure 3 about here]

Respondents in the center generally share similar fairness judgments favoring progressive taxation. However, they show more tolerance towards tax profiles where benefits are lower than taxes paid and only judge tax profiles as unfair when benefits are substantially higher than taxes paid ($140 in benefits). At the same time, their tolerance for significant horizontal disparities is low, suggesting a balanced approach to tax fairness that accommodates both concerns about individual benefit and equal treatment. Their evaluations reflect a middle ground, consistent with centrist ideological views that often blend fiscal conservatism with liberal ideals.

Self-reported conservative respondents exhibit distinct patterns that align with traditional views of fiscal conservatism. They disapprove of regressive tax systems, judging them as less fair to a degree comparable to respondents in the center and on the left. However, unlike those groups, conservatives do not view more progressive taxes as fairer; flat and moderately progressive structures are evaluated similarly.[3] In terms of exchange equity, conservatives disfavor profiles where benefits substantially exceed taxes paid, particularly the $140 scenario. By contrast, variation in horizontal equity has little influence on their fairness assessments, suggesting that unequal treatment of similar earners does not strongly shape their evaluations.

4.1.2 Tax knowledge

Do informed respondents of the tax system hold different views on tax fairness than those who are less informed? To explore this question, we analyze responses based on whether participants correctly answered two tax knowledge questions, one assessing vertical equity (VE) knowledge and the other assessing horizontal equity (HE) knowledge. The VE knowledge question asked respondents to compare the total tax liability of two couples, one in which both individuals earned equal salaries and another where one partner earned all the income, requiring an understanding of progressive taxation. The correct answer was that the couple with a single high-income earner would pay more tax. The HE knowledge question asked respondents to compare the tax burdens of two self-employed individuals with identical earnings but different ages, where the correct answer was that the younger taxpayer would pay more due to age-based tax benefits. These questions were adapted from Pham et al. (2020), who developed them to assess Canadians' knowledge of tax law.

The results, presented in Figure 4, indicate that respondents with high and low levels of tax knowledge exhibit similar fairness evaluations across all three dimensions. Despite differences in their understanding of tax rules, both groups strongly viewed progressive taxation as fairer, showed limited concern for minor horizontal inequities, and displayed a curvilinear pattern in evaluations of exchange equity, with diminishing sensitivity to benefit increases beyond a certain threshold. These findings indicate that tax knowledge has limited influence on how respondents evaluate the fairness of tax policies. The similarity in evaluations across knowledge levels suggests that other factors, rather than detailed policy knowledge, are more influential in shaping fairness judgments.

[insert Figure 4 about here]

[3] Among right-leaning respondents, fairness evaluations of progressivity were weaker but remained positive. Relative to the 20% parity baseline, reducing the rich's tax rate to 16% lowered the probability of being judged fairer by 21.5 percentage points (SE = 2.6, $p < 0.01$). Increasing the rate to 24% raised it by 6.0 percentage points (SE = 2.8, $p = 0.03$), and at 28% by 1.9 percentage points (SE = 3.0, $p = 0.51$). At the highest level of 32%, the probability decreased by 3.1 percentage points (SE = 3.2, $p = 0.33$).

The most notable but still marginal differences between the two knowledge groups appear with respect to horizontal equity. Respondents with higher tax knowledge were more tolerant of tax rate disparities from deductions and credits. For example, when one taxpayer paid 16% and another 20%, their fairness judgments did not change (+0.1 percentage points, not significant). Even at the most extreme case (4% vs. 20%), fairness evaluations dropped by only 5.7 percentage points (SE = 3.7, p = 0.12). In contrast, low-knowledge respondents were more sensitive: fairness decreased by 5.2 percentage points (SE = 1.9, p = 0.01) when one paid 8% and another 20%, and by 11.1 percentage points (SE = 2.0, p < 0.01) at the 4% vs. 20% disparity. Group differences were nearly significant at the 8% scenario (7.9 percentage points, SE = 4.3, p = 0.07), while differences remain insignificant for all other levels of horizontal equity.

4.1.3 Generational differences

Next we look at generational differences: Do younger and older generations hold different views on what constitutes fair tax policy? In our analysis, we split our sample by the median age of 52, dividing respondents into two groups: an "Older Generation" (age 53 and above) and a "Younger Generation" (age 52 and below). As Figure 5 shows, we observe the most pronounced generational difference in exchange equity.

[insert Figure 5 about here]

Younger respondents were sensitive to imbalances between taxes paid and benefits received. Receiving only $60 in benefits reduced fairness ratings by 14.1 percentage points (SE = 2.3, p < 0.01), and $80 by 7.5 percentage points (SE = 2.2, p < 0.01). Excessive benefits were also penalized: $140 yielded a 10.9 point decline (SE = 2.4, p < 0.01). In contrast, older respondents were largely indifferent, no benefit level significantly shifted their fairness assessments relative to the $100 baseline.

Generational differences in vertical and horizontal equity were more muted. Both groups favored progressive taxation, though younger respondents penalized regressive tax structures more heavily, while older respondents more strongly rewarded progressive ones. On horizontal equity, both groups disfavored unequal treatment of equal earners, but older respondents showed somewhat stronger aversion to extreme disparities.

4.1.4 Economic self-interest

Lastly, we examine whether income level moderates respondent's judgments about the fairness of tax policies by dividing respondents into two groups: those earning above $75,000 per year and those earning below this threshold. This division enables a direct comparison of fairness evaluations across income groups and provides insight into whether differences align with theories of financial self-interest. This cutoff was chosen as it closely aligns with both the national median income and the median value in our survey data. Figure 6 presents the AMCE estimates for each fairness dimension by the two income categories.

[insert Figure 6 about here]

The results show small but important differences in how high- and low-income respondents weigh fairness dimensions. In the vertical equity dimension, both income groups strongly judged progressive taxation as fairer, though the effect was somewhat stronger among lower-income respondents. Relative to the baseline of parity (poor pays 20%, rich pays 20%), a regressive tax structure where the rich paid only 16% reduced fairness evaluations by 20.5 percentage points

(SE = 2.2, $p < 0.01$) among high-income respondents, compared to 18.4 percentage points (SE = 2.1, $p < 0.01$) among low-income respondents. At the other end of the scale, when the rich paid 32%, fairness evaluations increased by 15.2 percentage points (SE = 2.9, $p < 0.01$) among high-income respondents, compared to a much larger 24.9 percentage points (SE = 2.8, $p < 0.01$) among low-income respondents. The difference in AMCE between the two groups at the highest level of progressivity is statistically significant, suggesting that progressive taxation resonates more strongly with lower-income individuals, likely reflecting their greater reliance on redistributive policies.

In the exchange equity dimension, both groups viewed benefits below the $100 baseline as less fair, though the penalties were larger for low-income respondents. Receiving $60 reduced fairness evaluations by 9.2 percentage points (SE = 2.4, $p < 0.01$) among low-income respondents, compared to 5.3 percentage points (SE = 2.6, $p = 0.04$) among high-income respondents. Neither group viewed higher-than-baseline benefits positively, and both judged $140 in benefits as less fair. These findings run counter to a "something for nothing" hypothesis: respondents did not reward excessive returns from government services, regardless of income. Instead, they preferred balanced exchanges.

Turning to horizontal equity, both groups showed tolerance for small disparities between taxpayers with equal incomes, but differences emerged at more extreme cases. Among high-income respondents, fairness evaluations decreased by 5.2 percentage points (SE = 2.4, $p = 0.03$) when one taxpayer paid 8% and the other 20%, and by 11.6 percentage points (SE = 2.8, $p < 0.01$) when one paid 4% and the other 20%. Among low-income respondents, smaller disparities had no significant effect, while the largest disparity (4% vs. 20%) reduced fairness evaluations by 7.5 percentage points (SE = 2.4, $p < 0.01$). However, differences between the two groups remain insignificant for all levels of horizontal equity. This suggests that while neither group strongly penalizes small horizontal disparities, high-income earners exhibit slightly greater sensitivity to moderate and extreme differences.

These findings reinforce the overarching result that vertical equity is the strongest determinant of assessments of the fairness of tax policies, regardless of income category. The stronger emphasis on progressivity among low-income respondents aligns with redistributive preferences often observed in the literature, whereas high-income respondents' greater sensitivity to extreme horizontal differentials may reflect concerns about fairness within their income group. Future research could further explore whether high-income individuals' resistance to large horizontal disparities extends to specific tax policies, such as deductions for homeownership or capital gains exclusions, which primarily benefit wealthier taxpayers.

4.2 Robustness analyses

To ensure the robustness of our main results we perform several additional tests. First, we compare the results of our main analysis between participants below and above the median survey completion time to assess whether attentiveness influences our findings. The overall pattern of perceived fairness, i.e., a curve-linear reaction to exchange equity, a strong preference for vertical equity, and horizontal equity only mattering when resulting in extreme tax rate differences, remains identical between these two groups. The biggest difference occurs with respect to horizontal equity where participants that spend more time on the survey penalized large deviations more strongly. However, none of the results differ significantly between the two groups.

Second, we compare the results of our main analysis between the two versions of our survey. These differed in the order of fairness dimensions in each vignette to control for potential

ordering effects. Again, the overall pattern of perceived fairness remains unchanged and the results of the comparison do not indicate clear order effects, e.g., dimensions listed first eliciting consistently stronger reactions than those listed second and third. While participants in survey version two, i.e., those seeing fairness dimensions in the order of horizontal equity, exchange equity, and vertical equity, showed stronger negative reactions to violations of horizontal equity, the differences in terms of exchange and vertical equity between the two survey versions were more complex. Regarding exchange equity, participants in survey version two showed weaker negative reactions to tax profiles where benefits are lower than taxes paid and stronger negative reactions to tax profiles where benefits exceed tax payments. In addition, this group reacted more negative (positive) to regressive (highly progressive) tax structures.[4]

Third, we repeat our main analysis without including survey weights. All results remain unchanged. Fourth, we repeat our main analysis excluding participants that looked at tax policy profiles but did not select either of the two profiles as the fairer one. We did not force participants to make a choice between the two profiles to allow for indifference. Nevertheless, participants may also simply click through profiles or terminate the survey early on leaving the final question unanswered. Given that we cannot clearly distinguish between the underlying motives, these cases were included in our main analysis with a value of 0 for perceived fairness for both tax profiles presented in a choice situation. When excluding these participants all results remain unchanged.

As a final robustness check, we compare our main results between the two dependent variables: perceived fairness and preferred policy. Starting with exchange equity, respondents penalize tax policy profiles where benefits exceed (are below) taxes paid more (less) when choosing the fairer tax policy. For example, profiles where taxpayers receive $120 in benefits for $100 in tax payments resulted in a decrease in perceived fairness of -2.8 percentage points (SE = 1.6, p = 0.09). In terms of preferred policy these profiles did not differ significantly from the parity baseline (-1.4 percentage points, SE = 1.6, p = 0.38). A similar difference occurred in terms of horizontal equity. Profiles where one taxpayer pays 20% and the other 8% resulted in a 3.5 percentage point decrease (SE = 1.7, p = 0.04) in perceived fairness compared to -2.1 percentage points (SE = 1.7, p = 0.22) in preferred policy. However, none of the results differ significantly between the two dependent variables showing that participants do wish the government to implement tax policies that they believe to be fair.

5. Discussion

This paper examines how individuals weigh different dimensions of fairness (vertical equity, horizontal equity, and exchange equity) when evaluating tax policies. Our findings demonstrate that vertical equity, or tax progressivity, is by far the strongest predictor of fairness evaluations. Respondents consistently judged tax profiles as fairer when higher-income individuals paid a proportionally greater share of their income in taxes, reinforcing the dominant role of progressivity in shaping public perceptions of fairness in taxation. This result aligns with the broader tax policy literature, which has largely focused on progressive taxation as the central fairness concern in tax debates (Alesina & Giuliano, 2011; Ballard-Rosa et al., 2017). While our study expands the analysis of tax fairness to include horizontal and exchange equity, the relatively small effects of these factors suggest that, in the context of fairness evaluations, vertical equity remains the most important dimension for most individuals.

[4] The only significant difference between both survey versions occurs for exchange equity when comparing reactions to tax profiles where taxpayers receive $80 benefits for $100 taxes paid (+6.4 percentage points, SE = 3.1, p = 0.04). All other differences between survey versions remain insignificant (p > 0.05).

At the same time, our analysis of subgroup differences highlights important nuances in how tax policy preferences vary across income, ideology, age, and tax knowledge. As expected, ideology and income are key moderators: left-leaning and lower-income respondents were more likely to evaluate progressive taxation as fair, while right-leaning and higher-income individuals displayed greater skepticism. Similarly, generational differences suggest that younger respondents place greater emphasis on exchange equity, assessing policies in which government benefits fall short of taxes paid as unfair, whereas older respondents showed a more muted response and only penalize excessive benefits.

Surprisingly, tax knowledge did not produce substantial differences in fairness evaluations, with high- and low-knowledge respondents displaying similar patterns across all three dimensions. This finding is notable given prior research suggesting that information about taxation can shape fiscal attitudes (Bartels, 2005; Lupia, 2016). One possible explanation is that fairness judgments are more deeply rooted in ideological and normative beliefs than in technical understanding of the tax system. Alternatively, knowledge effects may be conditional on specific forms of tax complexity, meaning that respondents may not necessarily apply abstract tax knowledge to real-world fairness trade-offs. This opens an avenue for future research: to what extent does increasing knowledge about taxation shift fairness evaluations, and under what conditions does information change public judgments? Addressing these questions could provide important insights into whether fairness perceptions are malleable or largely shaped by deeper ideological commitments.

It is worth highlighting that our findings diverge from Marshall et al.'s (2024) meta-analysis, which identifies exchange equity as the most influential fairness dimension for tax compliance, followed by vertical and horizontal equity. On the one hand, this divergence could reflect key differences between compliance behavior and fairness evaluations of tax policies. In contrast to fairness evaluations, compliance is fundamentally a behavioral decision about whether to cooperate with the state, making individual–government relations particularly salient. Exchange equity, the perceived adequacy of public goods and services relative to taxes paid, may be more central to compliance because it speaks directly to whether the state fulfills its obligations in this relationship. By contrast, fairness evaluations of tax policies are more explicitly comparative judgments about the distribution of burdens across individuals, reflecting concerns about fairness between income groups. On the other hand, methodological differences may contribute to the discrepancy: our conjoint experiment isolates the causal effects of different fairness dimensions, whereas Marshall et al.'s meta-analysis synthesizes primarily observational studies of compliance that may reflect correlational rather than causal relationships. Future research could further investigate the conditions under which exchange equity dominates fairness considerations and whether vertical equity's primacy in policy evaluations holds in other institutional contexts.

Expanding this discussion of future research, our results also identify horizontal equity as an important but overlooked dimension that warrants greater scholarly attention. Respondents generally accepted even extreme differentials in tax treatment between taxpayers with the same income. This result may help explain why loopholes, targeted credits, and deductions remain politically viable, even when they disproportionately benefit specific groups, such as homeowners who claim mortgage interest deductions or families with many children. Despite the rhetoric of tax fairness, societies often tolerate significant deviations from strict equal treatment, allowing for a tax system that is riddled with carve-outs for politically salient constituencies. This tolerance raises several unanswered questions. For example, what causal mechanisms underlie this tolerance? Is it driven by limited awareness of disparities between similar income earners, by perceptions that credits and deductions serve legitimate policy purposes, or by a broader indifference to the complexity of the tax system? Clarifying these

mechanisms would help determine whether acceptance of horizontal inequity reflects misunderstanding, pragmatic justification, or apathy.

Exchange equity was the weakest predictor of fairness evaluations. Respondents showed a curvilinear preference for policies in which benefits equal taxes paid, penalizing both relatively low and high government benefits. Notably, these findings run counter to the expectations of the "Something for Nothing" hypothesis, which predicts that individuals prioritize extracting maximum value from the state by favoring policies where benefits substantially exceed taxes paid (Downs, 1957; Citrin, 1979; Sears & Citrin, 1982). Instead, respondents appear to favor a balanced exchange, where benefits align closely with contributions, rather than disproportionately high returns from government services. This suggests that public resistance to taxation may be driven less by an aversion to paying taxes and more by concerns about inefficiencies or misallocation of public funds.

Our results also highlight the value of interdisciplinary approaches to studying tax fairness. By drawing on insights from political science, economics, and tax compliance research, this paper demonstrates how integrating different disciplinary perspectives can yield a more comprehensive understanding of tax attitudes. Traditionally, tax policy research has focused on redistribution and progressivity, while economists and accountants have emphasized compliance, tax morale, and fiscal incentives. Our findings suggest that bridging these perspectives offers new avenues for exploring how fairness norms influence both individual behavior and policy design. Future research should continue to integrate these fields, particularly by examining how tax fairness considerations intersect with behavioral economic models and institutional tax structures.

From a policy perspective, these findings suggest that efforts to promote progressive taxation are likely to resonate with the public, as vertical equity remains a dominant fairness norm. Nevertheless, the extent of progressivity in vertical equity needs to be considered carefully, as there is recent survey evidence that the majority of Canadians do not want top tax rates to exceed 50% (Fuss & Munro, 2023). In addition, policymakers seeking to introduce new tax policies, whether progressive or regressive, could strategically frame them in terms of horizontal equity, given respondents' general acceptance of differential tax treatment. Despite fairness rhetoric often emphasizing equal treatment, our results indicate that voters tolerate significant tax disparities under certain conditions, such as when deductions or credits are perceived as justified. Likewise, arguments centered on exchange equity may have limited persuasive power, as individuals do not strongly prioritize receiving benefits in proportion to taxes paid. Instead, fairness evaluations appear to be anchored primarily in redistributive concerns rather than strict cost–benefit calculations.

While this study provides new evidence on how individuals weigh different fairness dimensions, it is important to consider potential limitations and additional avenues for future research. First, these findings are based on a Canadian sample, and while Canada shares key fiscal structures with other advanced democracies, cross-national comparisons could reveal differences based on institutional or political contexts. Canada's relatively low tax noncompliance, strong state capacity, and history of progressive taxation make it an ideal case for studying tax fairness, but similar analyses in countries with weaker institutions or higher levels of tax evasion could provide important comparative insights. Second, while the conjoint experiment isolates fairness trade-offs, real-world judgments may also be shaped by economic conditions, media framing, or partisan cues. Future research could extend this analysis by incorporating experimental designs that test how political rhetoric and framing influence fairness perceptions. A key question for further investigation is whether individuals prioritize vertical equity because of its dominance in public discourse or if this preference reflects deeper normative beliefs about economic justice. Understanding how these factors vary across institutional and political

settings will clarify whether fairness evaluations are context-dependent or grounded in more universal principles.

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Table 1: Conjoint Analysis Dimensions and Attributes

Dimension	*Description*	*Attributes*
Vertical Equity	Two taxpayers who earn different amounts (one poor, one rich):	Poor pays 20%, rich pays 16%
		Poor pays 20%, rich pays 20%
		Poor pays 20%, rich pays 24%
		Poor pays 20%, rich pays 28%
		Poor pays 20%, rich pays 32%
Horizontal Equity	Two taxpayers who earn the same amount:	Both pay 20% (identical credits and deductions)
		One pays 20%, the other pays 16% (different credits and deductions)
		One pays 20%, the other pays 12% (different credits and deductions)
		One pays 20%, the other pays 8% (different credits and deductions)
		One pays 20%, the other pays 4% (different credits and deductions)
Exchange Equity	In exchange for every $100 taxpayers pay in taxes:	A taxpayer receives $140 in benefits and services
		A taxpayer receives $120 in benefits and services
		A taxpayer receives $100 in benefits and services
		A taxpayer receives $80 in benefits and services
		A taxpayer receives $60 in benefits and services

Figure 1: Screenshot of conjoint task

	Tax Policy 1	Tax Policy 2
Two taxpayers who earn different incomes (one poor, one rich):	poor pays 20% of income in taxes, rich pays 32%	poor pays 20% of income in taxes, rich pays 28%
Two taxpayers who earn the same (gross) salary:	one pays 20% of income in taxes, the other pays 16% [because of different credits and deductions]	one pays 20% of income in taxes, the other pays 8% [because of different credits and deductions]
In exchange for every $100 taxpayers pay in taxes:	A taxpayer receives $140 in government benefits and services	A taxpayer receives $140 in government benefits and services
	○	○

Figure 2: Coefficient Plot of Average Marginal Component Effects (AMCE) for Perceived Fairness of Tax Policy

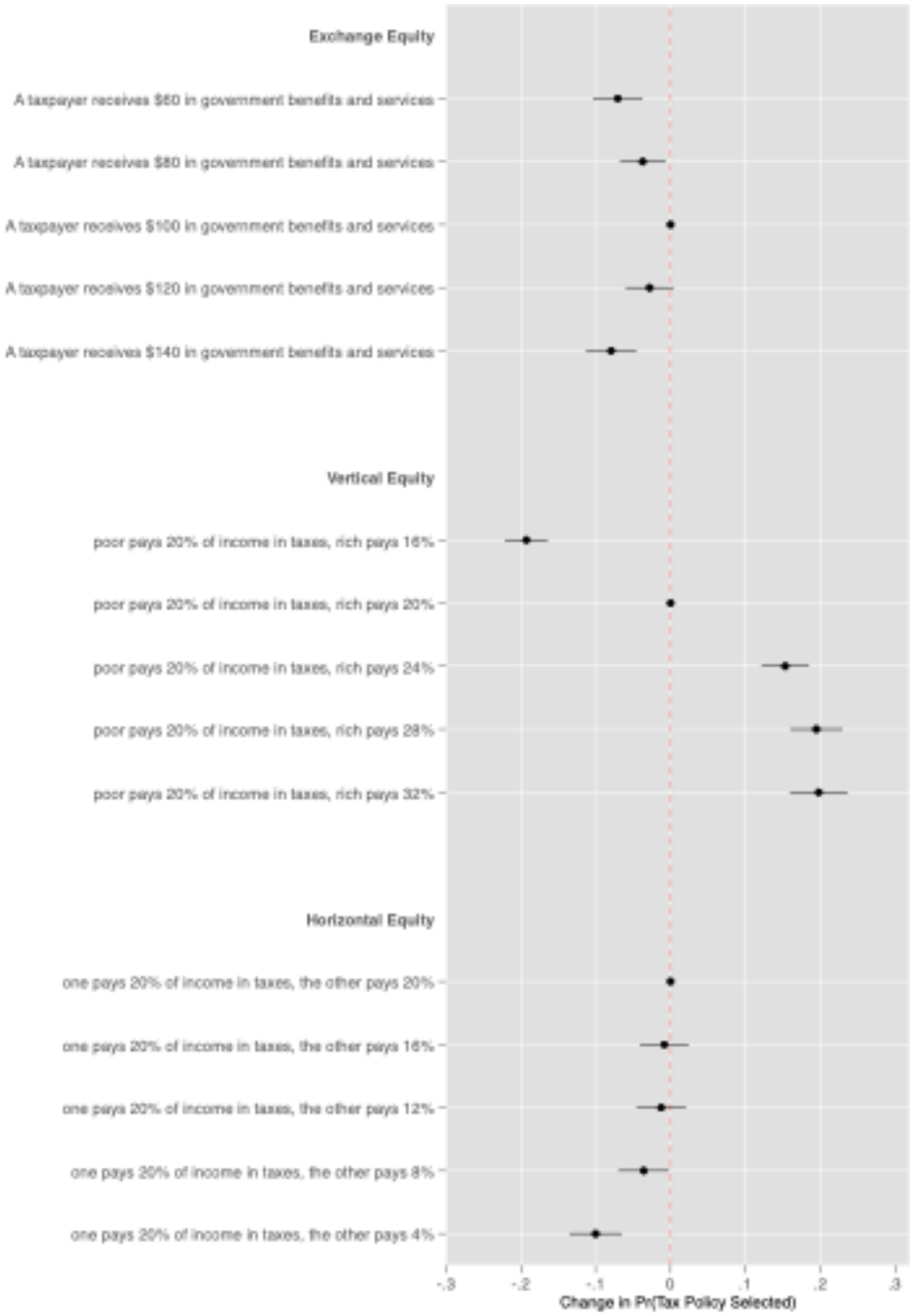

Figure 3: Comparing Political Ideology: Left, Right and Center

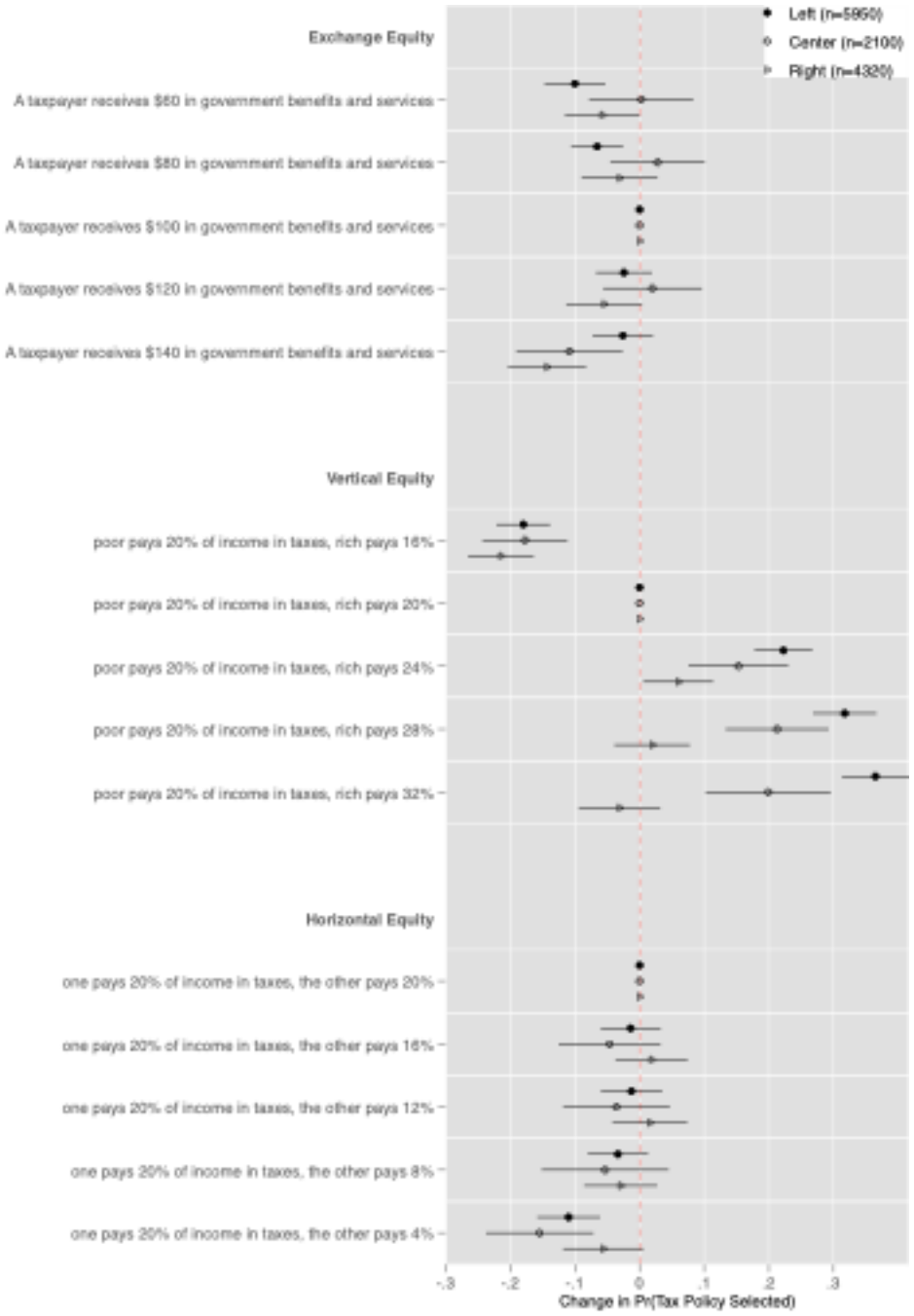

Figure 4: Comparing High and Low Tax Knowledge

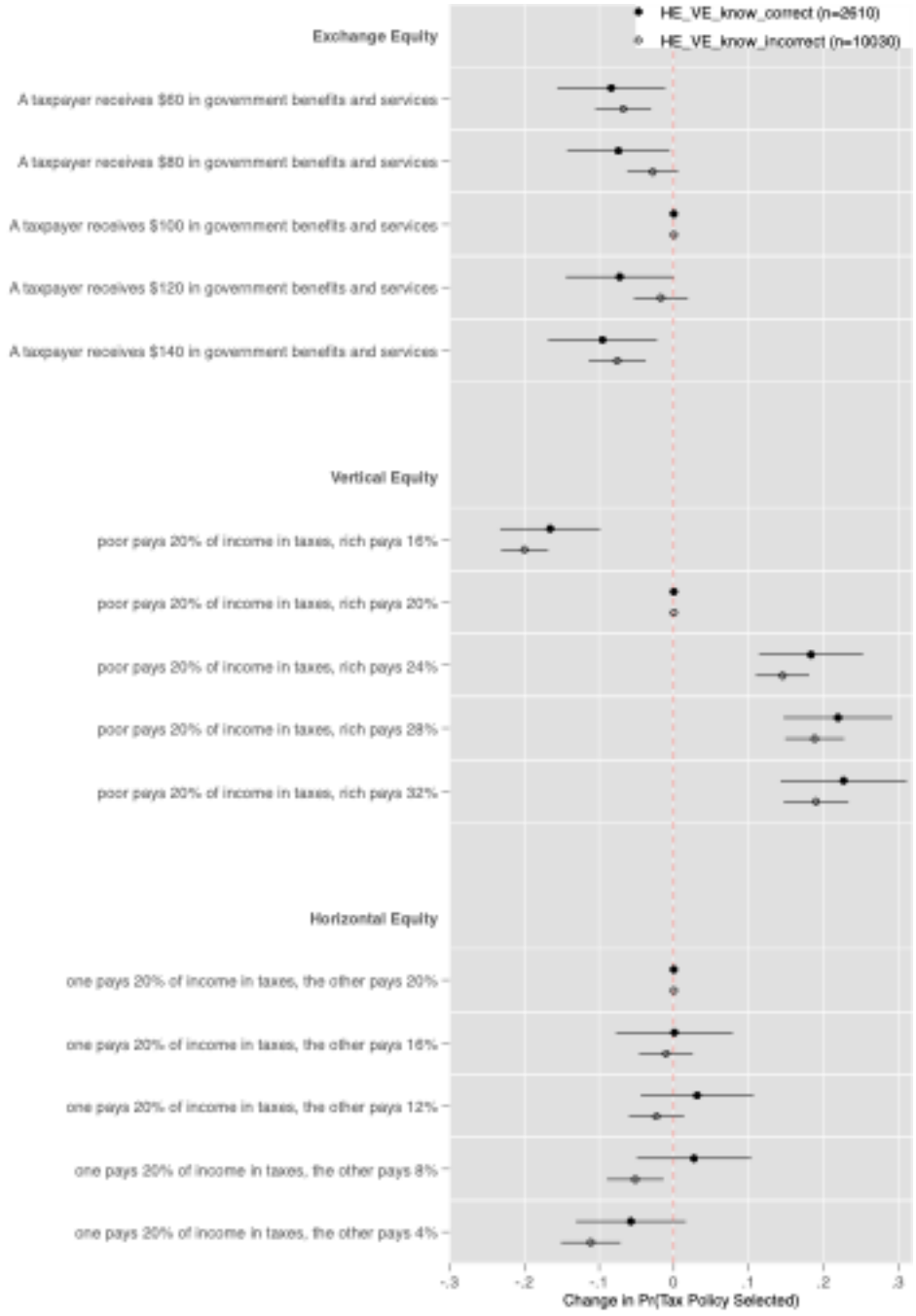

Figure 5: Generational Differences

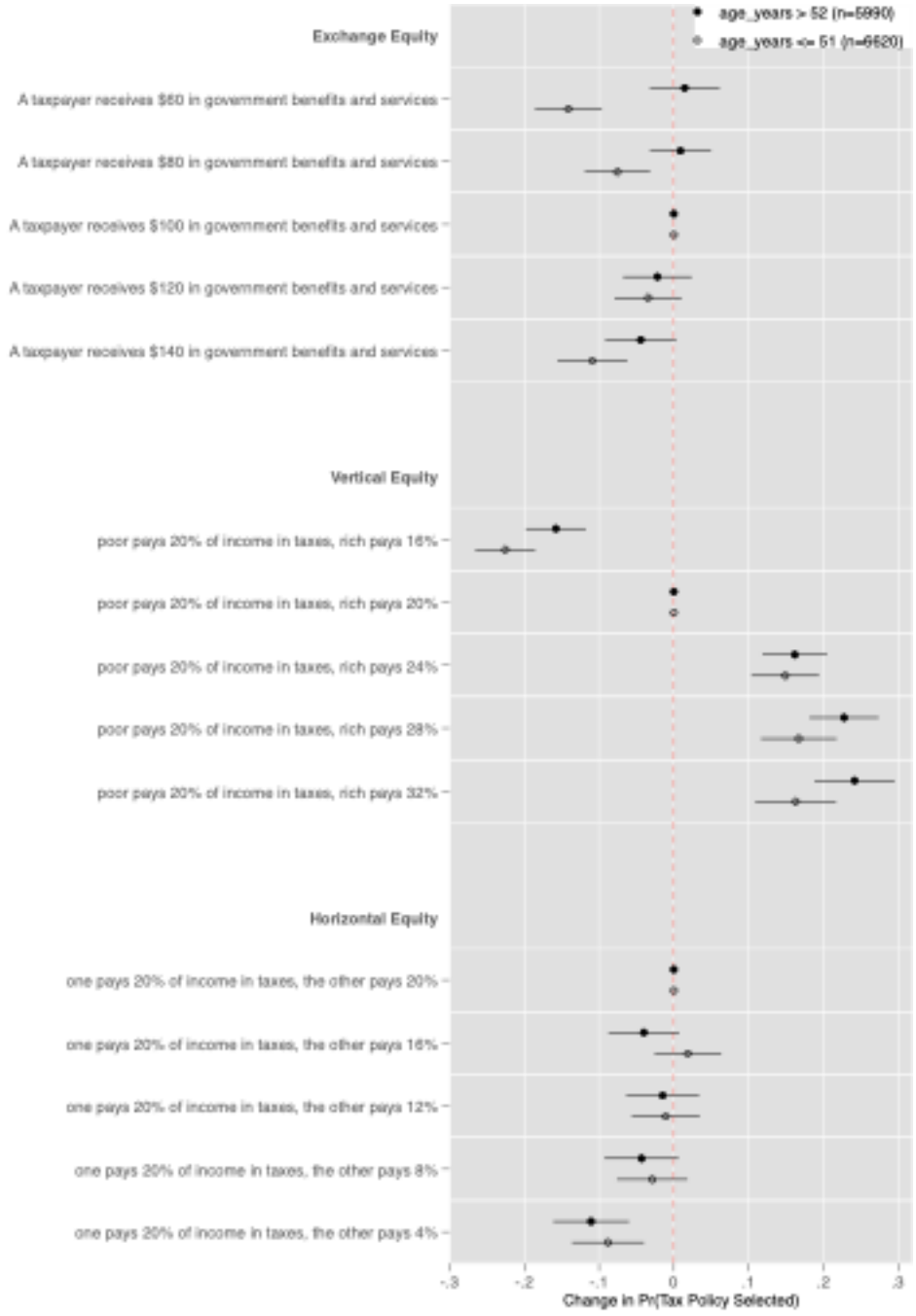

Figure 6: High v. Low Income Respondents