Teaching Inequality to ECON 101 students

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Abstract: The objective of this paper is to offer an approach for teaching inequality to Econ 101 students. A principal argument made is that it is necessary to teach inequality to Econ 101 students and that any discussion of inequality is incomplete without addressing taxation. Multiple ways of broaching inequality are shown by a review of salient points from various textbooks and think tank analyses. The renewed approach is developed by motivating students through popular memes, data analysis, a comparative outlook of salient ideas, and a simple simulation exercise to study the impact of an increase in the top tax rate on tax revenues.

Keywords: inequality; Econ 101; top 1%; corporate taxes; wealth tax; top tax rates; teaching economics.

Biographical notes: Junaid B. Jahangir is an Assistant Professor of Economics at MacEwan University. His academic career started with some research in Energy Economics. In 2012, the book Follow the Money: Where is Alberta's Wealth Going? Was published with Kevin Taft and Mel McMillan. Lately, he is interested in a renewed perspective to teaching economics to undergraduate students.

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1. Introduction

Many introductory microeconomics courses assign the Mankiw, Kneebone, and McKenzie (2020a) text to undergraduate students in Canada. Mankiw's co-authors are from the University of Calgary, and they provide the Canadian context. These courses emphasize Mankiw's ten principles of Economics, the supply and demand model, elasticity, and government intervention, usually in the first half of the course, followed by producer theory and market structure. Emphasis is on solving for market equilibrium, calculating elasticities, and finding the profit maximizing solution. Steeped in calculations of marginal analysis, the course hardly leaves any time for addressing inequality, which is more often not covered in Econ 101. This is in stark contrast to the Samuelson text that had reduced marginal analysis in order to address contemporary economies rather than neoclassical economic theory (Bowles and Carlin, 2020). Additionally, even in the chapter on

inequality, Mankiw et al. focuses on poverty reduction instead of contemporary discussions on the Top 1%, the push towards increasing corporate taxes, and implementing wealth taxes. The objective, therefore, in this paper is to offer a renewed approach to teaching inequality to Econ 101 students.

One motivation for this paper arises from the fact that during the COVID-19 pandemic in 2020, the wealth of Canada's 44 billionaires (who constitute 0.0001% of the population and have a total wealth of $270 billion (Hemingway 2021)) increased by 63.5 billion, and many corporations continued to pay out dividends and bought back shares to boost share prices even as 636,000 jobs were lost, while many frontline workers saw their brief pandemic pay taken away (Tencer, Jan 27, 2021; Hemingway, 2021). Additionally, 50% of the Top 100 Canadian CEOs received a raise or retained their full compensation compared to 50% of workers making $17 and less, who lost their jobs or majority of their working hours in April and May of 2020 (Macdonald, 2021). Another motivation for this paper is because how neoclassical economics is taught to students paralyzes their thinking on prescribing any effective policy towards tackling inequality. Consider, for instance, that students are taught about the disemployment effects of raising the minimum wage and are advised that large income transfers disincentivize people to find jobs. Similarly, students are taught that increasing corporate taxes or top marginal income tax rates would incentivize entrepreneurs to reduce work effort and move to another country (Van Staveren, 2021, p. 97). Pushing back against such a grim outlook, Blanchard and Rodrik (2021) hope that economists would promote effective policy reform towards tackling inequality instead of offering the usual counter arguments that "we can't afford it," "we don't have enough evidence," or that "incentives will be distorted" (p. xx). All of this necessitates a renewed approach to teaching inequality instead of the usual naysaying in neoclassical Economics textbooks.

This paper is structured around five sections. The next section reviews undergraduate Economics textbooks which uphold the mainstream neoclassical paradigm or the alternative perspective. The third section focuses on analyses by think tank institutes to address inequality and taxation. The fourth section provides a renewed approach on teaching inequality to ECON 101 students through meme motivation, data analysis, comparative review of the salient ideas, and a simulation exercise. The final section offers concluding remarks.

2. Review of undergraduate Economics textbooks

2.1 Reorganizing the Mankiw, Kneebone, and McKenzie (2020a) text

The Mankiw et al. text does not address inequality until Chapter 20, where the authors state that the invisible hand does not ensure an equitable allocation of resources (p. 439). However, this idea is not fleshed out through corporate market power enabling large firms to keep wages low, thwart competition, and limit innovation. The chapter introduces data through average market income by quintiles and the before/after-tax Gini coefficients through time. However, students are better engaged by conducting basic data analysis themselves (Mankiw concedes that statistical tools can be employed in Econ 101, if high school students are sufficiently well-trained (Mankiw, 2021).

In Chapter 18, Mankiw et al. present material that can inform the discussion on inequality in Chapter 20, though an express connection is not made. The authors indicate that while labour productivity increased at 1.12% per year, average Canadian wages increased at 0.61% and median wages at 0.09% during the period 1976 – 2016 (p. 411). While they postulate that this gap could be due to productivity gains in higher income occupations, they do not consider the possibility that the wages of CEOs and other senior executives could be much higher than their marginal revenue

product (MRP). In short, they uphold the market model instead of the search and bargaining models with imperfect information where rents are generated in the job matching process and which allow higher CEO compensation based on CEO bargaining power.

Returning to Chapter 20, Mankiw et al. introduce a dense discussion on the problems in measuring inequality because of in-kind transfers and the distinction between lifetime versus annual income and permanent versus current income. However, it is not clear if capturing such nuance is necessary at the Econ 101 level and whether this is better replaced by a discussion on the causes of inequality and the policies to tackle it. This would include a discussion on globalization and outsourcing/offshoring of companies and jobs, rapid technological development and the impact of automation on jobs, and policies in alleviating inequality through taxes, minimum wage, and unions. To be fair, they provide a brief news item on these causes, as an aside in Chapter 5 of the macroeconomics text (Mankiw et al., 2020b, p. 114-115). However, the tripartite classification offered by Green, Riddell, and St. Hilare (2016); and Blanchard and Rodrik (2021) (who seem to be mainstream neoclassical ideologically) to tackle inequality through pre-labour market policies, labour market policies, and post-labour market policies seems to be a more effective approach to address inequality.

Mankiw et al. (2020a) address taxes but not in any connection with inequality. In Chapter 8, the authors suggest decreasing corporate income taxes (CIT) and personal income taxes (PIT) but raising sales taxes (p. 184). In Chapter 12, they mention that the burden of higher corporate taxes can be borne by consumers through higher prices, workers through lower wages and shareholders through lower profits.[1] The authors indicate that many shareholders are far from rich and have their pension funds in corporation shares.[2] They illustrate how the burden of corporate taxes shifts from capital to labour, as increasing CIT leads to lower investment,[3] as firms invest

elsewhere in housing, other industries, or in low wage countries, which leads to lower capital stock per worker, lower labour productivity, lower demand for labour, and therefore lower wages.

Similarly, they build the case that PIT discourages hard work and reduces saving.[4] They do so with a concrete example where $1000 invested for 40 years at 8% yields $21,720 but including a 25% tax on interest income reduces the effective interest rate to 6% and the future value to only $10,290 (p. 270). Likewise, they state that the burden of taxes on luxury items like fur is not necessarily borne by wealthy consumers but rather poor workers (p. 276). Such an approach paralyzes the thought of using taxation to tackle inequality. However, Mankiw et al. also mention the principles of taxation that seemingly temper the naysaying discourse on raising taxes. Specifically, based on the benefits principle, the ability to pay principle, and the vertical equity principle, wealthy people should pay higher taxes because they benefit more from police protection and have a greater ability to bear the burden of supporting the government (pp. 273-274).

In short, teaching inequality using the Mankiw et al. text requires some reorganization of the material by giving less time to the problems of measuring inequality, by shifting the focus away from poverty towards inequality, by using the broad structure to address inequality, as offered by Green, Riddell, and St. Hilare (2016); and Blanchard and Rodrik (2021), and by patching material from various chapters of the microeconomics and the macroeconomics texts.

2.2 Salient themes from other neoclassical texts

Unlike Mankiw et al. (2020a), Ragan (2020) retains the focus on inequality, presents the data through the income share of the Top 1% and the ratio of the 90th to the 10th percentile income, and provides a discussion on the causes of inequality along with the policies to tackle it. While Ragan does not have a separate chapter on inequality, he piques student interest by mentioning that

in 2016 the average CEO compensation of the 100 highest paid CEOs in Canada was 209 times greater than the pay of the average Canadian worker, an increase from the 1980s when the factor was only 40 (p. 345). He asserts that, unlike Marx,[5] who opined that with economic progress, capitalists would become better off, in contemporary economies it is CEOs, senior executives and professional entertainers and athletes, who earn high incomes as part of the Top 1%, as many capitalists are owners of small retail stores with relatively low incomes (p. 339-340). Specifically, in 2014, 65% of the total earnings of the Top 1% came from wages and salaries (p. 343). Ragan provides information on Canada that comports with the U.S. experience: post-WWII until the mid-1980s, the income share of the middle class grew and that of the Top 1% declined but the situation has since reversed (p. 342).

Unlike Mankiw et al. (2020b), Ragan presents the causes of inequality in the main body of the text. He highlights globalization with outsourcing of jobs, declining unions, technological change and automation that increases the demand for high skilled workers and reduces the demand for middle skilled workers, who may not always be able to upgrade their education and skills, and thus end up competing for low skilled jobs that lowers wages and therefore exacerbates inequality. While Ragan presents the dominant narrative that inequality is explained by the failure of workers to acquire higher skills, even college graduates are falling victim to long trend inequality, as the increase in inequality between 1980 and 2015 has occurred more within education groups than between university and high school graduates (Green, Riddell, and St-Hilaire, 2016). In short, any discussion on inequality must contain the three main causes of inequality: technological change, globalization, and the policy environment that comprises declining unions and stagnating minimum wages.

Unlike Mankiw et al. (2020a), Ragan does not deflect from inequality to poverty, arguing that the former itself matters for it reduces social cohesion and intergenerational social mobility, and is harmful to democracy, as the wealthy influence government policy. He distinguishes between policies like taxing the rich and tackling pre-tax inequality by restricting outsourcing and preventing consumers from accessing low priced foreign goods, though he views the latter with skepticism, as they rest on protectionism. He is also skeptical of policies that improve access to education, arguing that such policies pay off over the long term but do little to impact short-term income inequality (p. 348). All of this implies that instead of pre-tax policies on education and protectionism, emphasis must be placed on taxing the rich, especially given Piketty's argument that whereas the income of workers grows at the lower rate of economic growth, the wealth of high-income individuals grows at the higher rate of return on capital, which exacerbates inequality (p. 345).

Amongst other Canadian economics texts that uphold the neoclassical paradigm, Hubbard et al. (2018) show labour market graphs for high skill, medium skill, and low skill workers to explain inequality. Specifically, they mention that the supply of high skill workers is inelastic for it takes time and effort for specialized training. They mention that such workers are complements to robotic technology, therefore, an increase in their demand increases their wages (p. 373). On the other hand, medium skill workers are substitutes for robotic technology and therefore their demand declines, and they end up competing with low skill workers such as food workers and janitors (p. 374). Thus, in the neoclassical paradigm, income inequality results because the wages of low skill workers decline with increased supply, and the wages of high skill workers increase with increased demand. Hubbard et al. (2018) state that inequality reflects income from superior skills and entrepreneurial ability, and that higher taxes would reduce risk taking, work, saving, and

investment (p. 418). In short, they completely sideline the role of corporate power and the rising share of the Top 1% to rationalize inequality as a product of individual ability rather than a consequence of the policy environment.

Overall, the neoclassical paradigm is clear in teaching students that increasing the PIT would disincentivize work, saving and investment; the burden of the CIT is shifted to labour, and that inequality is a result of the demand for high skill workers, entrepreneurial ability and talent. In such a framework, there is limited role for taxation; and poverty alleviation is led through the working income tax benefit (WITB), analogous to the U.S. based earned income tax credits (EITC). However, economists who reject the neoclassical paradigm have offered alternative perspectives in their texts, which are reviewed next.

2.3 Salient themes from alternative texts

Schneider (2019) crafts a whole chapter on corporations before addressing inequality. Through various examples, Schneider showcases how large corporations, instead of focusing on long term growth and innovation end up focusing on accounting tricks and the pursuit of short-term profits (p. 375). He views this outcome as a result of the firms compensating CEOs with stock options to address the principal agent problem between the owners (shareholders) and managers (senior executives) of the firm. This suggests that instead of investing in long term projects that generate employment, large firms end up hoarding cash and focusing on the stock market, in addition to amassing corporate market power, stifling competition and innovation. This perspective, therefore, allows students to question the merit of tax incentives in generating employment, as firms would seemingly divert the extra cash to stock buybacks and dividends.

Pertaining to the causes of inequality, Schneider emphasizes the trend in lowering taxes on the wealthy, and that wealth inequality is more extreme than income inequality because the wealthy can save extra income through stocks, bonds, and interest-bearing accounts. This suggests that financialization of the economy is a substantive determinant of inequality apart from globalization, technological change, and the policy environment. Additionally, Schneider rejects the idea that "trickle-down" economics creates jobs, stating that inequality contributes to the election of far-right political parties (p. 516). Economists who uphold alternative perspectives, therefore, argue for taxation to curb corporations and the wealthy from influencing government policy. However, Dahlby and Ferede (2013) argue that to reduce the lobbying influence, better options include election financing reforms, transparent reporting, and sanctions for infringement. Similarly, others skeptically state that in a U.S. presidential campaign, it requires less than a million dollars to obtain individual access to the candidate, and that not even a 6% wealth tax would attenuate the ability of the wealthy to make political contributions (Blanchard and Rodrik, 2021, p. 143-144).[6]

Amongst other textbooks with alternative perspectives, Goodwin et al. (2019) argue that the wealth of the Top 1% is due to rent seeking instead of productivity (p. 263). They mention that 46% of the increase in inequality can be attributed to financialization of the economy compared to 19% to globalization, 10% to technological change, and 25% to institutional factors (p. 690). Additionally: countries that cut taxes did not grow faster than those that did not (p. 693). In terms of policy prescriptions, they support instituting a small tax on financial transactions to discourage short term speculation, restricting companies from buying back their stocks, linking executive pay to productive performance of companies instead of share prices, and adding worker representatives on corporate boards (p. 696). Finally, in terms of data analysis, where Schneider (2019) shows graphs illustrating productivity outstripping real wages (p. 515), Goodwin et al. show how

economic gains have been captured by rising corporate profits compared to the almost stagnant real median weekly wage (p. 236). Collecting data to illustrate such graphs is a useful exercise for Econ 101 students contingent on data availability, and if the complexity of data collection and assembly does not make it unnecessarily cumbersome and thwart student learning. Goodwin et al. also conduct a simple longitudinal exercise of comparing marginal tax rates with average growth rates, an exercise that is followed through in Section 4 of this paper.

To recapitulate, both Schneider and Goodwin et al. explain inequality less by globalization and technological change and more by the policy environment of low taxes, the institutional environment of weak unions and corporate market power, and the financialization of the economy that leads to excessive CEO compensation. Therefore, in terms of tackling inequality, they reject the neoclassical prescription of lowering taxes to encourage entrepreneurship whose benefits do not trickle down through greater employment. Instead, they prescribe supporting the minimum wage and unions, increasing top marginal tax rates, instituting wealth taxes, and introducing restrictions and regulations on corporations to push back at the economy's increased financialization.

Reardon, Madi, and Cato (2018) offers separate chapters on 'power and the distribution of resources,' and 'inequality, poverty, and disempowerment.' Written within the context of the 17 UN Sustainable Development Goals (SDGs), it completely rejects the standard pedagogical format of texts (of which heterodox economists feel obligated to follow). Similarly, another alternative is Komlos (2019a).

Thus, introducing students to the topic of inequality through a comparative framework, as will be shown in Section 4, enables a richer understanding of the issue than providing them with either the neoclassical or the alternative perspective alone.

3. Review of Canadian think tank analyses

While the neoclassical textbooks in Section 2 were focused on the Canadian context, the textbooks with alternative perspectives were written for the U.S. However, to keep the Canadian context paramount, a review of Canadian think tank analyses is warranted. These analyses present Canadian data and focus the discussion on corporate taxes, wealth taxes, the Top 1%, and CEO compensation. A review of papers issued by think tanks is presented by first highlighting the neoclassical viewpoint and then the alternative perspectives on combating inequality.

3.1 The neoclassical viewpoint

In Canada, Dahlby and Ferede (2013) opine that inequality may allow high net-worth angel investors to fund a large number of innovative investments, and that populist pressure for redistribution may lead to growth-sapping regulations, make property rights insecure, lead to unrest, and instigate the elite to invest in safe havens abroad. They argue that more unequal income distribution may lead to a higher saving rate, more investment, and therefore higher growth. They also state that studies with better data and econometric techniques find that higher inequality is associated with faster economic growth. Additionally, they argue that there is little scope for raising the top marginal tax rates in Canada. Likewise, Ferede (2019) bolsters the idea that tax increases reduce work incentives, decrease saving, investment, and encourage tax planning, avoidance and evasion. Finally, he opines that allocating more resources to the Canada Revenue Agency to minimize tax evasion is unlikely to have a significant impact on tax avoidance. McKenzie and Ferede (2017) argue that the costs of raising CIT rates are borne through wage reductions by large (and diffuse) number of individuals over the long run. Similarly, Boadway and Pestieau (2019) argue that wealth taxes are inferior to capital income taxes, as rates of return are

easier to measure than asset values, especially those of intangibles. Instead, Boadway and Tremblay (2016) advocate eliminating dividend tax credits and the partial capital gains tax exemption.

3.2 Income inequality and the top tax rate

According to Klein (2012), inequality matters in Canada because since the mid-1990s inequality has grown faster in Canada than in the U.S., and because Canada's tax and transfer system is not reducing inequality as much as it did before the mid-1990s. Inequality matters because the average Canadian household is working 200 hours more, whereas the Top 10% didn't increase work hours between 1996 and 2004. And even though Canadians are getting better educated, delaying family formation, and working harder, they are just getting by and are stagnating (Yalnizyan, 2007).

MacDonald (2021) mentions that while an average worker's salary was CAN $53,482, the top 100 CEOs obtained an average compensation of 10.8 million in 2019. According to Yalnizyan (2010), while the share of the Top 1% was reduced from WWII to the late 1970s, since then the income share of the Top 1% has doubled and that of the Top 0.01% quadrupled. Specifically, where the compensation of Canada's top 100 CEOs increased by 262% from 1998 to 2005, the average Canadian worker only saw a 15% increase (Yalnizyan, 2007).

Osberg (2015) argues that there is scant evidence that high earners emigrate in response to higher top tax rates, as they move based on net advantage that includes both the cost of taxes and the benefit of public goods like pothole free roads, crime free public spaces and parks. He states that the labour supply response of high earners to changes in the top marginal income tax rates is quite small because the significance of relative income, social standing, rank, and competitive

consumption of status goods prompts one to remain motivated and work hard. He adds that the existing top marginal tax rate in Canada is below the revenue maximizing rate. Alluding to the income effect, he opines that higher hourly wages may decrease work hours; and therefore the reduction in net wages by increasing the top marginal tax rate can actually increase labour supply, the tax base, and therefore tax revenue.

3.3 Wealth inequality and wealth taxes

Hemingway (2020) mentions that wealth inequality is more extreme than income inequality, as Canada's 87 richest billionaire families have 4448 times more wealth than the average family and as much as the bottom 12 million Canadians combined. This is because people who earn more can save more, and returns on larger portfolios are larger (Macdonald, 2018). Over the past decade, the number and wealth of Canadian billionaires has more than doubled, while during the pandemic the wealth of the top 44 billionaires increased more than 50 billion even as they cut the pandemic pay for their low paid workers (Canadians for Tax Fairness, 2020b). Additionally, during the pandemic, the top 5 billionaires donated 0.09% of their wealth even as their fortunes grew more than 9%; thus, charity organizations and foundations by the top billionaires are a poor substitute for taxing and redistribution (Canadians for Tax Fairness, 2020b).

Jackson (2020) opines that CEOs are compensated far in excess of their real productive contributions and that firms like Google and Amazon drive down wages, fight unions and lobby governments for their interests. He supports wealth taxes in contrast to those who believe that taxing wealth is tantamount to double taxation and who instead support capital income and inheritance taxes. Jackson instead argues that inheritance taxes allow wealth to accumulate tax free for many years. He rejects the idea that wealth taxes would reduce investment, noting that tax cuts

since the 1980s have failed to boost investment; additionally, a wealth tax would incentivize the rich to look for productive investments instead of simply hoarding cash. On the other hand, Summers argues that more than three quarters of the wealth taxes in Europe two decades ago have been eliminated because of their impracticality (Blanchard and Rodrik, 2021, p. 146).

However, Zucman states that Europeans can avoid paying taxes by moving to other countries, which differs from Canada (Blanchard and Rodrik, 2021, p. 271-273). European wealth taxes have had many loopholes, exemptions and deductions, without information exchange between European banks. This can be remedied in Canada by removing loopholes, exemptions, and deductions, by levying a steep exit tax if people renounce citizenship to avoid wealth taxes, and by international cooperation that would allow Canada to obtain information on the foreign accounts of Canadians each year.

3.4 Corporate taxes

Kalra (2020) argues that cutting CIT does not create jobs but takes money away from healthcare and long-term care homes that have faced the brunt of the pandemic. Likewise, Brennan (2015) rejects the neoclassical idea that reducing the CIT would lower the cost of capital, increase investment in productive projects, increase employment and therefore wage income. Instead, he argues that the period 1950–1980 had high CIT rates and GDP/employment growth but post-1980 CIT cuts were associated with anemic GDP and employment growth. Alluding to the idea that unemployment and idle capacity reduce the bargaining power of workers, he opines that moderate stagnation and unemployment benefit corporations. On their part, Canadians for Tax Fairness (2020c) argue that corporate taxes trickle up, leading to corporate concentration, share buybacks, dividend payouts and higher CEO pay; and therefore, corporations that received federal aid during

the pandemic should be prohibited from share buybacks, dividend payouts, and executive bonuses for at least one year.

3.5 Combating inequality

Overall, to reduce inequality, Canadians for Tax Fairness (2021) advocate eliminating tax loopholes, raise the top income tax rate, restore corporate tax rates, introduce an annual wealth tax, and an excess profits tax. Additionally, they call for addressing the lower tax rates on capital gains and stock option deductions. This is because such investment income is taxed at half the rate as regular income (i.e., the dividend tax credit and preferential treatment of capital gains mitigate double taxation (Boadway and Tremblay, 2016)).

Similarly, Macdonald (2021) argues for applying the top marginal tax rate to salaries and bonuses received by senior executives in the form of stocks and stock options. Canadians for Tax Fairness (2020a) also argue for tax reforms to reduce tax evasion, which include ending double nontaxation agreements with tax havens, requiring large corporations to report taxes paid in each country, and treating multinational corporations as single entities for tax purposes to prevent them from avoiding taxes through subsidiaries.[7] In short, while the neoclassical viewpoint extols the merits of inequality and low taxes and at most allows for the elimination of preferential tax treatment, the alternative perspective is rooted in combating inequality through top income, corporate, and wealth taxes.

4. Towards a renewed perspective on teaching inequality

In this paper, I argued that it is necessary to teach inequality to Econ 101 students, a topic not usually covered, or if so, relegated to the end. It was shown that the neoclassical approach

adopted in Mankiw et al. (2020a) does not do justice to the topic of inequality, as it is focused on addressing poverty, whereas, according to Blanchard and Rodrik (2021), there is a growing consensus that policies should focus on more than just poverty reduction (p. xiii). It was also shown that any discussion of inequality is incomplete without addressing taxation. Additionally, instead of indoctrinating students with the neoclassical paradigm that is increasingly being challenged from a wide array of approaches including behavioural and experimental economics, radical political economy and modern monetary theory, students can be introduced to the topic of inequality through a comparative pluralistic framework. Therefore, the following approach is proposed to teaching inequality at the Econ 101 level.

4.1 Meme Motivation

Students can be motivated with popular Facebook memes (see Figure 1) that show how Loblaws grocery chain stores run by the Weston family in Canada saw record profits of 1.19 billion in 2020 amidst the pandemic, how the senior executives obtained 19.4 million in bonuses, and how the frontline essential grocery workers got a brief $2/hr raise only for it to be rescinded. Likewise, another meme shows that with an annual 3% wealth tax on net worth over a billion, as proposed by Senator Warren, Jeff Bezos would owe 5.7 billion, Elon Musk would owe 4.6 billion and Bill Gates would owe 3.6 billion, which would still leave them with 185 billion, 149 billion and 116 billion in wealth respectively. Students find such approaches far more engaging before they are led through the formal definitions of the Gini coefficients and Lorenz curves.

Such memes can lead to rich discussions on inequality. For instance, despite all his wealth, Bezos spent his money on space tourism instead of paying his workers more (Koren, 2021). In the context of the wealth of the billionaires like Bezos, Gates and Zuckerberg, instructors may

emphasize the ideas of Rawls (1999) and justice, that the current level of inequality has to do with the luck of being born in a privileged household, which can determine future outcomes. Additionally, instructors can highlight that the market has magnifying mechanisms, which enable the Top 1% to gain wealth (Frank and Cook, 1995), that meritocracy is a myth (Frank, 2016), that conspicuous consumption of the super-rich inflicts negative externalities (Frank, 2005), that relative incomes matter which is one reason that the current income distribution creates discontent (Komlos, 2019b), that concentration of wealth destabilizes the political system (Komlos, 2017), those with power can affect outcomes in their favor (Reardon et al. 2018), and that those who defend the current income distribution overlook racism that works against minorities (Koechlin, 2020). However, all these discussions will depend on the preparedness of the instructors with respect to the literature.

INSERT FIGURE 1

4.2 Data collection and analysis

Student interest can be sustained through data collection and analysis so that students remain invested in the topic rather than cursorily skim pre-prepared tables and graphs. To this end, students can undertake a preliminary data analysis at the Econ 101 level. Table 1 shows that students can easily collect data for their provincial jurisdiction in Canada from the CANSIM database. In the context of this paper, data is shown for Alberta (where I teach).

Based on CANSIM data series, Table 1 shows that inequality can be gauged three different ways:

- A comparison can be made between the market Gini coefficient and the after tax and transfer Gini coefficient for each decade for which data is available. The difference between the two increased from the 1970s to the 1990s (see Table 1) indicating that even as inequality was increasing, the tax and transfer system effectively reduced market

inequality. However, since the 1990s, this difference has been reduced, which substantiates Klein (2012).

- Compare the data on the average and the median income. The difference between them has increased considerably and consistently from the 1970s to the 2010s (see Table 1) indicating that inequality has increased in Alberta.
- Compare the income shares and the tax shares of the Top 1% with the Bottom 50%. From the 1980s to the 2010s the income share of the Top 1% almost doubled and that of the Bottom 50% halved (see Table 1). This would indicate that inequality has increased; however, students can then investigate the tax shares of both groups to discern that these shares have also about doubled and halved respectively. This leads to a good class discussion on how data can be marshaled by those on opposite sides of the political/economic spectrum. Whereas some would emphasize the data on income shares to prescribe raising taxes on the Top 1% in order to address increasing inequality, others may underscore the income tax shares to argue against any change in the status quo.

In addition, students can also compare statutory tax rates with economic growth (Goodwin et al. 2019). While a thorough analysis that keeps the impact of other variables constant is only possible through regression analysis, students can learn how the CIT was consistently reduced and about halved from the 1970s to the 2010s, and that similarly the top PIT rate was reduced from 66.3% in the 1970s to 42.1% in the 2010s. Yet, the rates of real per capita growth show an anemic picture for the 2000s and the 2010s. This allows students to ask whether it is worth reducing taxes even further if real per capita growth is predominately shaped by factors other than lower taxes. Additionally, this leads to discussing who actually benefits from lower tax rates. This motivates looking at data on worker productivity, average wages, and corporate profits. However, data limitations preclude collection, tabulation, and illustration of data that would confirm what some Canadian think tanks have already found: that despite increase in worker productivity, average real wages have stagnated, and that it is only corporate profits that have skyrocketed (Russell and Dufour, 2007; Uguccioni, Sharpe and Murray, 2016).

INSERT TABLE 1

4.3 Consolidating the discussion on inequality

With the memes and data analysis, students obtain an understanding of the import of inequality and the need to address it. This would take them to the causes of inequality and the three sets of ameliorative policies (i.e., pre-market, market, and post market). In this regard, they can discuss how the neoclassical and the alternative perspectives address the causes of inequality and the policies of accessibility to education, minimum wages, support for unions; and corporate, top income and wealth taxes. Indeed, introducing students to a comparative and pluralistic way of understanding inequality allows for a richer understanding than simply presenting them with a one-sided view.[8] Additionally, as noted in Blanchard and Rodrik (2021), the neoclassical position on these issues has already been challenged within the economics profession. Table 2 consolidates this difference in perspectives based on our review of textbooks and think tank analyses.

INSERT TABLE 2

4.4 Data simulation exercise

Advanced students, whether at the Econ 101 level or at higher levels, can also be engaged with a simulation exercise to gauge the impact of increasing the top tax rate on tax revenues. One motivation comes from Mankiw's argument (2021) that we should start introducing students to some of the empirical methods used in economics research. The simulation exercise becomes feasible when students are introduced to the distinction between the mechanical effect and the behavioural effect due to an increase in the top income tax rate. The former is the additional revenue generated due to the higher tax rate assuming the same tax base, whereas the latter incorporates the reduction in the tax base when the wealthy work less, substitute earnings for

capital gains that are taxed at a lower rate, move activities overseas, or engage in tax evasion (Mathur, Slavov, and Strain, 2012).

Additionally, students should be introduced to the concept of the elasticity of taxable income with respect to the net of the tax rate (1 – MTR), defined as the percentage by which the taxable income (tax base) varies with a 1% increase in the net of the tax rate. It is important to introduce students to this concept, as the current debate on the impact of raising the top tax rate is based on the value of this elasticity. Osberg (2015) places the value of this elasticity at 0.2 for Canada, and Ferede (2019) at 0.33. Based on this difference, Osberg's basic simulation exercise (2015) can be introduced to students to study the mechanical and behavioural effects of raising the top tax rate.

For the simulation exercise, data on the threshold income, number of tax filers, average income, and average income taxes paid by the Top 1% are all that are needed, and readily available from CANSIM (see Table 3). The simulation's objective is to gauge how much tax revenue can be generated if the top tax rate increased from the current average tax rate to 65%, as proposed by Osberg (2015). This is a significant exercise, as the current debate on increasing the top tax rate on the Top 1% rests on the idea that the behavioural effect reduces the tax base and therefore reduces the tax revenues generated. According to Osberg (2015), who used the average data during the period 2008 – 2012 for Canada, the amount of tax revenue generated from an increase of the top tax rate to 65% ranges from 15.7 billion to 19 billion.

This exercise can be repeated for Alberta for the period 2014 – 2018, based on Ferede's (2019) value of the elasticity of taxable income, who has advised against raising such tax rates, since the behavioural effect would overwhelm the simple mechanical effect of raising the top tax

rate. By combining Osberg (2015), arguing for raising the top tax rate, and Ferede's (2019) value of elasticity, who advises against raising the tax rate, both sides of the debate can be addressed. And specifically, first the mechanical effect of raising the top tax rate on the Top 1% is calculated, by calculating the average tax rate (i.e., dividing the average income taxes by the average income). Then the income that is exposed to the tax rate increase is calculated by subtracting the average threshold income from the average income. The mechanical effect is then calculated by multiplying the average number of tax filers with the increment in the average tax rate and the exposed income. Based on average data from 2014 – 2018 for Alberta, an increase from the current average tax rate of 32% to 65% yields tax revenues of 4.6 billion.

Table 3 then shows the calculations required to compute the behavioural effect of raising the top tax rate on the Top 1%. This is achieved by computing the percentage change in the tax base through the elasticity of the taxable income formula. This percentage change is applied to the old tax base, which is calculated as the product of the average number of tax filers and the average income, to compute the new tax base. Based on the new tax base, the new average income is computed by dividing the new tax base by the average number of tax filers. Then the new exposed income is calculated by subtracting the average threshold income from the new average income. Finally, the behavioural effect is calculated by multiplying the average number of tax filers with the increment in the average tax rate and the new exposed income. This process yields tax revenues of CAN $3.19 billion, i.e., based on the elasticity of taxable income; an increase in the top tax rate in Alberta would raise revenues anywhere from 3.2 billion to 4.6 billion. In short, such an exercise is easily conducted with instructor guidance through excel spread sheets, where students can experiment by changing the top tax rate or the elasticity of the taxable income. This simulation

exercise is also easily adaptable for non-Canadian instructors based on availability of data in their respective jurisdictions.

INSERT TABLE 3

5. Conclusions

A principal argument made in this paper is that it is necessary to teach inequality to Econ 101 students, a topic that is often not covered, or relegated towards the end of the course. It was shown that Mankiw et al.'s neoclassical approach does not do justice to the topic of inequality, as it is focused on just addressing poverty. It was also shown that any discussion of inequality is incomplete without addressing the topic of taxation. Moreover, it was argued that Mankiw et al. would need to be re-organized if it were to be used to teach inequality. However, instead of indoctrinating students with a neoclassical paradigm that is increasingly being challenged, it was shown how students can be introduced to the topic of addressing inequality through pre-market, market, and post-market policies.

The paper culminated with showcasing memes to spark student interest, followed by basic data analysis. This is a much better approach than presenting them with ready-made data and graphs that are often cursorily skimmed in class. Multiple ways of showcasing inequality were shown through data, followed by a comparative look at the subject through a review of salient points from various textbooks and think tank analyses. Finally, a simple simulation exercise based on the concept of the elasticity of taxable income was shown, which advanced students can work through to study the impact of an increase in the top tax rate on tax revenues. In short, based on motivation through memes, investing time in data analysis, showcasing a comparative outlook of salient ideas, and through a simple simulation exercise, student interest can be sparked on a

contemporary topic instead of inundating them with definitions, ready-made graphs, and an unnecessarily dull exposition.

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Figure 1: Memes on Inequality

Source: https://www.facebook.com/permalink.php?story_fbid=3367540280014941&id=182855901816744

Source: https://www.facebook.com/TheOther98/posts/6063705170307077

Table 1: Three different ways to understand inequality in Alberta

Decade	Gini coefficient			Market Income			Top 1%		Bottom 50%		Federal and Provincial taxes		real per capita growth rate
	Market	After tax	difference	Average	Median	difference	Income share	Tax share	Income share	Tax share	CIT	Top PIT	
1970s	0.356	0.292	0.064	70,700	62,275	8,425					48.5%	66.3%	
1980s	0.373	0.291	0.082	69,270	60,120	9,150	9.30%	15.84%	12.30%	4.44%	45.2%	50.7%	1.09%
1990s	0.406	0.301	0.105	65,640	52,590	13,050	12.07%	20.31%	9.56%	3.73%	40.8%	46.1%	1.80%
2000s	0.403	0.311	0.092	83,630	65,730	17,900	18.60%	28.80%	7.39%	2.48%	34.2%	39.0%	0.54%
2010s	0.404	0.309	0.095	99,030	76,210	22,820	17.40%	27.07%	6.54%	2.33%	26.3%	42.1%	0.90%

Source: CANSIM series:
v96439669 Alberta, Adjusted market income Gini,
v96439671 Alberta, Adjusted after-tax income Gini
v96414471 Alberta, Average market income (2019 constant dollars)
v96414491 Alberta, Median market income (2019 constant dollars)
v62794062 Alberta, Market income, Top 1 percent income group, Share of income (Percent)
v62794067 Alberta, Market income, Top 1 percent income group, share of federal and provincial or territorial income taxes paid (Percent)
v62794237 Alberta, Market income, Bottom 50 percent income group, Share of income (Percent)
v62794242 Alberta, Market income, Bottom 50 percent income group, share of federal and provincial or territorial income taxes paid (Percent)
v62788314 Alberta, Chained (2012) dollars (Dollars), Gross domestic product at market prices v469503 Alberta, Both sexes, All ages (Persons)

Finances of the Nation, Statutory Tax Rates for CIT and Top PIT

Table 2: The neoclassical and alternative perspectives on inequality

Theme	Neoclassical	Alternative
Benefit/ Harm	The benefits of inequality trickle down	Inequality harms growth
Focus	Focus on poverty alleviation	Address inequality directly
Top 1%	The Top 1% income share has increased but the tax share paid by them has also increased considerably	The share of the Top 1% has increased and it is mostly due to CEO compensation and low top tax rates
Cause	Caused by demand for high skill workers, outsourcing of middle-class jobs, and increased supply of low skilled workers due to globalization and technological change	Globalization and Technological change all affected developed countries, but inequality exacerbated in those with poor tax and transfer systems. U.K. U.S versus continental Europe and Japan
Solution	The solution is to develop human capital and strengthen EITC/WITB	Policies on education only pay off in the long run and mostly benefit middle and upper class. Those from poor households may not finish the program and are left with debt. So, the impact on inequality is limited. The solution is to raise CIT and top PIT rates
Minimum wage and unions	Minimum wage and unions cause inefficiency in the economy through dis-employment effect and rigidity respectively	Minimum wage should be raised to $15/hr, move towards living wage, and unions protect worker interest against market power of giant corporations.
Corporate Income Tax	CIT disincentivizes entrepreneurship, leads to low investment, low capital accumulation, low productivity and therefore lower wages. The burden is passed to workers, as capital is mobile in a small open economy.	The reduction in CIT over the decades has been associated with anemic growth. Large corporations sit on dead money instead of investing in productive projects. CIT cuts are usually passed on as bonuses and are used for stock buybacks.
Top Tax Rate	Higher top PIT rates disincentivize work, lead to tax evasion, and because of the behavioural effect, they do not raise much in tax revenues.	Low top PIT rates means that CEOs will have a greater incentive to bargain for higher compensation, based on the bargaining models in labour economics. The supply side effect of higher top PIT rates is limited, as top earners are motivated by maintaining their rank and status based conspicuous consumption.
Wealth Tax	Instead of a wealth tax, focus must be on inheritance taxes, and removal of preferential treatment of capital gains and stock dividend deductions.	Wealth taxes must be introduced over and above raising the CIT and PIT rates. Inheritance taxes are not as effective as they allow wealth to be accumulated for longer durations of time.

Table 3: Simulating the impact of the top tax rate increase on tax revenues

Calculations of the mechanical and the behavioural effects	CA	AB
	2008-2012	2014-2018
average threshold income for the Top 1%	205,460	233,760
average # tax filers in the Top 1%	255,323	57,490
average income for the Top 1%	441,000	479,420
average income taxes paid by the Top 1%	146,800	154,420
average Top 1% income exposed to increase in tax = average income - threshold	235,540	245,660
average % of total income paid in tax	0.33	0.32
new top tax rate	0.65	0.65
mechanical calculation = exposed income * # tax filers * increment in tax rate	19,071,220,639	4,630,964,356
total tax base of Top 1% = # taxpayers * average total income	112,597,443,000	27,561,855,800
elasticity of taxable income	0.2	0.33
% change in (1-MTR)	-47.54%	-48.37%
% change in tax base	-9.51%	-15.96%
new tax base of Top 1% = (1- % change in tax base) * old tax base	101,892,648,708	23,162,390,822
new average income = new tax base / # tax filers	399,074	402,894
new average income exposed to the tax increase = new average income - threshold	193,614	169,134
behavioural calculation = new exposed income * # tax filers * increment in tax rate	15,676,514,331	3,188,368,943

Source: CANSIM series:
v62802577 Canada, Total income; Top 1 percent income group; Threshold value (Current dollars)
v62802578 Canada, Total income; Top 1 percent income group; Number of tax filers (Persons)
v62802586 Canada, Total income; Top 1 percent income group; Average income (Current dollars)
v62802591 Canada, Total income; Top 1 percent income group; Average federal and provincial or territorial income taxes paid (Current dollars)
v62805602 Alberta, Total income; Top 1 percent income group; Threshold value (Current dollars)
v62805603 Alberta, Total income; Top 1 percent income group; Number of tax filers (Persons)
v62805611 Alberta, Total income; Top 1 percent income group; Average income (Current dollars)
v62805616 Alberta, Total income; Top 1 percent income group; Average federal and provincial or territorial income taxes paid (Current dollars).

Endnotes

[1] It is important to recognize that the argument of shifting the corporate tax burden to consumers or workers is predicated on perfect markets, whereas many real-life big firms are oligopolies that do not respond to taxes the same way as competitive firms. However, empirical work by McKenzie and Ferede (2017) suggests that the burden of corporate taxes in Alberta is shifted to workers. They also claim that evidence is mounting that the burden of corporate taxes is borne to some extent by labour through lower wages.

[2] While Mankiw et al. (2020a) indicate that many shareholders are far from rich, it should also be noted that in the U.S., as of 2013, the Top 10% own 81% of the stock market wealth (Kurtzleben, 2017).

[3] There is a difference of opinion on whether CIT leads to lower investment. On the one hand, Ferede and Dahlby (2012) indicate that a higher CIT rate is associated with lower private investment and slower economic growth in Canada; on the other hand, Brennan (2015) indicates that post-1980 CIT cuts are associated with anemic employment and growth.

[4] Mankiw et al. (2020a) do not provide empirical justification for this claim; rather they base it on an exercise with the compound interest rate. Although, this argument of higher PIT disincentivizing work and saving is repeatedly found in neoclassical work including Dahlby and Ferede (2013).

[5] Although Marx also wrote that some capitalists would go out of business and join the growing ranks of the unemployed, Ragan offers his explanation.

[6] However, it's not just the presidential campaign that counts, as political influence also matters at the local level. For instance, in the U.S., Reagan's tax cuts gave millionaires tax breaks, who used them to invest heavily in the political process. See Komlos (2019c).

[7] Recently, a global minimum corporate tax rate was introduced. Though, Clausing, Saez and Zucman (2021) have argued that instead of a global minimum tax, a country-by-country minimum tax is more effective, as low taxed income cannot be averaged with high taxed income. Also, a country-by-country minimum tax incentivizes tax havens to increase their own tax rates, whereas in the case of a global minimum tax, tax havens can still offer tax shields.

[8] Piketty has a good discussion on the problems of synthetic indices (Gini, Theil) and the explicit benefits of using distribution tables. See Piketty (2017), pp. 332-338.