

ABSTRACT

Taxation and Income Inequality:

The Government's Role in Economic Parity

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Income inequality is an issue that every country is currently facing that has a negative impact on most societies in a multifaceted way. As a complex fiscal issue, one of the ways to counter this increasingly relevant phenomenon is with curated tax policies put into place by federal governments, specifically with the progressive income tax rate structure, an important tool to mitigate income inequality. This thesis presents analysis and a review of the relevant literature to assess the design of income tax rate structures with respect to reducing income inequality and improving quality of life for a country's citizens. The factors analyzed include the progressive income tax structure, corporate income tax structure, and the societal ramifications that these policies result in. Comparisons are made between the income tax rate structure and the income inequality metrics between the U.S. and Canada. While there is disagreement in prior literature, there seems agreement that higher tax progressivity coupled with a minor reduction in corporate income tax would reduce income inequality to a certain extent. The impact of these policies on the quality of life of a country's citizens is also discussed when it comes into conflict with income inequality.

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TAXATION AND INCOME INEQUALITY:
THE GOVERNMENT'S ROLE IN ECONOMIC PARITY

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CHAPTER ONE

Introduction

1.1 Impacts of Income Inequality

Among threats to the societal bonds that keep the world going round, income inequality and the world's ability to manage it is near the top of that list. As will be shown throughout the rest of this section, income inequality influences behavior throughout all income levels. High income inequality is also linked to serious health and social consequences independent of the income level of a society. Perception of having less is a strong factor in how a person behaves and can have physical, mental, and social impacts even in rich societies that many countries are living in. These impacts can be as serious as increasing rates of depression and even all-cause mortality independent of material wealth of a society. Thus, even though countries can generate greater wealth within their borders, these countries may be held back by issues caused by inequality within their society. These feelings of helplessness together with the perception of being marginalized in a society induce health concerns, even when the overall standard of living increases (Wildman 2003). Therefore, reducing harmful income inequality is an important issue, even among developed countries.

1.2 Taxation and Income Inequality

Reducing income inequality is at the heart of the tax system, and this multifaceted link has been demonstrated time and time again (Poterba 2007). This link is vital for economies to control income inequality due to its direct nature and the scale at which tax

policy can be wielded by governments. That is not to say that tax policy solely serves to impact societal issues, but it is a tool which is useful at reordering the economy and providing incentives to citizens to behave certain ways.

Governments using the tax system in this way have a few specific aspects of policy which provide the most direct and large-scale results, these are the income tax structure and the corporate income tax. Both directly impact wealth and income distribution as well as generate revenue for governments to function. Countries have such a high degree of control over a tool which impacts income inequality so directly, yet a general control over the phenomenon does not seem to be the case. Income inequality has worsened overtime, even though there has been more research and understanding on the subject and its real-world impacts. This apparent disparity motivates the research in this thesis.

1.3 Progressive Income Tax Structure

Individual income tax is the largest government revenue generation and income redistribution tool that a federal government has. Individual income tax alone in the United States accounts for 51% of government revenue overall (U.S. Treasury 2022). The individual income tax has a progressive tax rate structure, meaning that it applies a greater tax rate on higher income earners than lower income earners. This system, therefore, applies a heavier tax burden on wealthier individuals. By taking a greater percentage of revenue from higher income earners while taking a significantly lower percentage of wealth from lower income earners, the progressive tax rate structure aims

at reducing income inequality, at least on face value. However, the rates at which each income bracket is taxed, the width of those brackets, the structure of the income tax credit or deduction, and many other factors all play into how income inequality will react. This calls for an examination on the individual income tax rate structure against the income inequality in the society to better understand the results of such a powerful and complex tool.

In this thesis, I am evaluating federal tax policies in an effort to determine the best way to combat income inequality. For the progressive income tax portion, I compare the individual income tax rate structure between the U.S. and Canada because of the geographic, economic, and demographic proximity between these two countries. While both countries have adopted a progressive rate structure on individual income tax, they differ on the progressivity of the rate structure and income distribution. Therefore, evaluating the U.S. system using Canada as a benchmark shed additional light on the progressivity of the U.S. individual income tax rate. To compare the inequality of the countries, I use the Gini Coefficient, which is a statistical descriptor of the spread of income in a society. Higher levels of spread of income is because of higher income inequality and is indicated by a higher Gini Coefficient. As of now, there is higher income inequality in the United States than Canada, but this has changed over time.

1.4 Corporate Income Tax

The next tool that needs to be addressed is the corporate income tax, a tool that has a simpler (flat) rate structure, is more complex in the determination of impact on

income inequality. The corporate income tax is a flat rate in most cases, but still warrants lots of consideration because of the income generation and wealth distribution abilities of the tax. In the United States, 7% of government revenue or roughly \$129 billion is generated from this one tax alone. The importance of the tax lies in the determination of the incidence of tax. Because a corporation is not an actual person, the incidence of tax concerns the person who ultimately bears the tax burden. In the context of a corporation, the tax burden may be passed as a reduction of the income to workers hired by a corporation (born by the labor), a lower income available for distribution to the owners of the corporation (born by shareholders), or a higher price that a consumer pays for a product sold by the corporation (born by consumers). Depending on who the ultimate person is, the corporate income tax has varying effect on income inequality, and there is not general consensus on what the breakdown of this impact is. If more of the tax burden falls on laborers, the tax should be reduced to in turn reduce income inequality, but if the tax burden falls on mostly owners, an increase in the tax could reduce income inequality, assuming owners of corporations are among the wealthier population in the society. The analysis and literature review in this thesis aims at determining the best tax structure regarding corporate income tax.

1.5 Societal Implications

While there are clear financial implications for the adjustments to corporate and the individual progressive income tax structure, the policies' societal and demographic impacts cannot be ignored. This thesis cannot thoroughly discuss each issue, but it

focuses on the marriage rate and the female labor force participation rate as they are impacted by the tax structure and its changes. Taxation of married couples has resulted in different tax consequences and subsidies for marrying couples and for couples with one partner in the workforce. These important metrics need to also be considered when evaluating the best tax structure to not only reduce income inequality, but also to encourage the general health of societies everywhere. Canada and the U.S. differ in their approach to these issues, and this difference is important to glean insights from.

CHAPTER TWO

Progressive Income Tax

2.1 Introduction

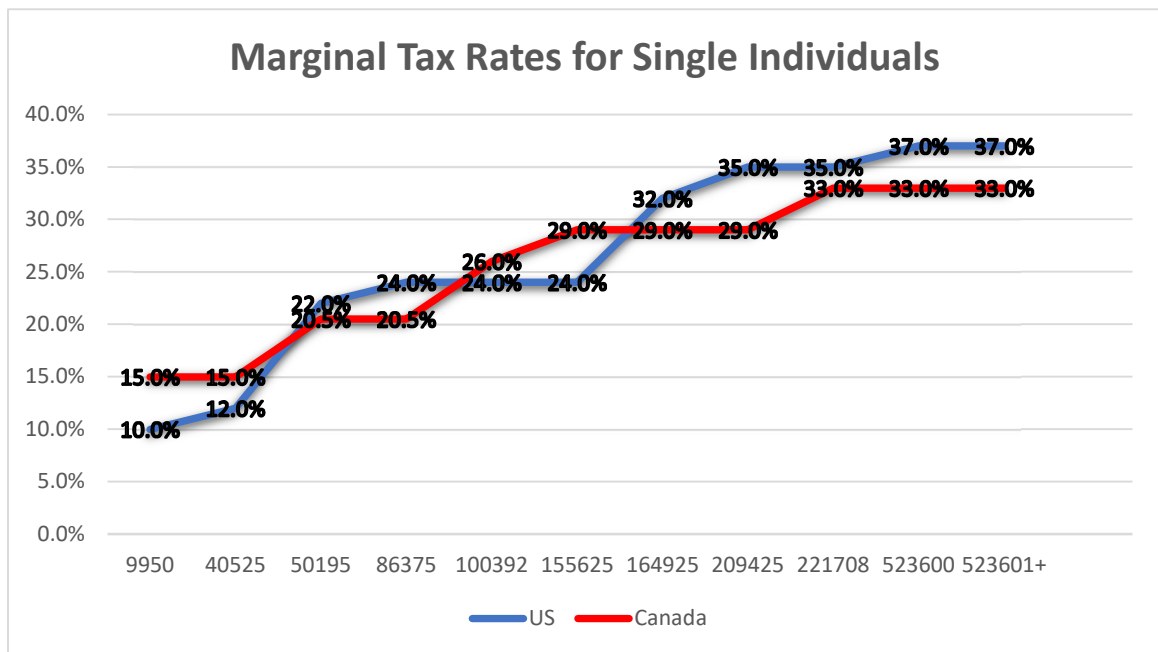


Table 1: Marginal Tax Rates for Single Individuals

The individual income tax structure is the way in which the federal governments, in this case the United States and Canada, design their tax systems to pull income from certain groups of individuals. There is lots of thought that goes into these structures and their complexity cannot be understated in both their design and their impact on the citizenry of the countries. The above graph is an illustration of the tax rates in the United States and Canada plotted along the lines of taxable income. This is useful when

evaluating the progressivity of the rates and the ways the countries are handling income inequality.

For all taxes, there are three basic structures that governments can use; these are a progressive tax structure, a regressive tax structure, and a flat tax structure. The progressive tax is what most developed countries use as it generates more revenue from higher income individuals and can reduce income inequality at differing levels depending on how progressive the rates are. This structure increases the tax rate as income increases. Both the United States and Canada use this kind of tax structure. The second type is regressive tax structure, which decreases the tax rate as income increases. A good example of this is sales tax, where two individuals of differing income pay the same tax, but the wealthier person pays less as a percentage of total income. The final kind is a flat tax where the rate remains the same no matter an individual's income level. The best example of this tax is the corporate tax that is charged on income from corporations.

For the purposes of this analysis, the progressive tax structure of the individual income tax will be examined closely because of its use in both the United States and Canada. There are some caveats of the progressive tax structure. The main issue is that not all systems using this structure are equivalent. While two countries can both be using a progressive structure, there is a stark difference between a country whose rate goes from 10% to 30% and a country whose rate goes from 10% to 15%. This creates discrepancies between the impacts of these rates on countries citizens, income inequality, and government revenue generation. While the difference in the progressivity of the rates

in the US and Canada is not so stark, there is still quite a large impact in the differences they do have due to the scale of both systems.

Finally, I have chosen to analyze the marginal tax rate for the purposes of this discussion. The marginal rate is stated in a Country's tax code and is the one that is easiest to evaluate when looking at the differences in impact on a society. Effective tax rate is another important consideration when analyzing the data from individual tax rates as it shows the amount of tax an individual is paying in practice. I will utilize this measure as well, but the main rate that I will analyze is the marginal tax rate because of its comparability between the two countries and the more distinct lines it draws between tax brackets.

The main consideration when evaluating the income tax structure is determining if the rates being applied to the population are accurate to each individual's location on the income distribution curve. If there are discrepancies where too many people are not paying tax or the highest income earners are not paying a rate that increases with their relative percentage of the population's income.

Marginal Tax Rate

To the untrained eye, the tax rates employed by the United States and Canada may look very similar. There is the same rough slope and very few income levels where there is a difference between the rates of more than just 2%. What needs to be understood is that these minute differences in tax rate not only represent differences in federal tax revenue of billions of dollars, but they also shape the behavior and decisions of every

citizen within these countries' borders. A 2% decrease in the United States marginal tax rate across the board would result in billions of dollars in lost government revenue.

The best way to evaluate these differences in income tax rate is to go step by step looking at the rates for the different levels of income and their respective rate in each country. Each rate and level of income where that rate steps up have been picked specifically by each country's litigators to do many different things, not the least of which is to decrease income inequality.

There are many basic structural elements to the United States' and Canada's taxes that differ from each other with varying impacts. The main three are the progressivity and rates of the income tax, the width of those rates, and the decision to either utilize a standard deduction or a credit to reduce tax burdens. In all three of these, the two countries took differing approaches to their implementation for disparate reasons and all of these decisions have impacts that are useful when analyzing income inequality due to tax structure.

2.2 Progressivity and Rates of Income Tax

\$0-50,000

The lowest tax bracket is important for two main reasons when evaluating its impact on income inequality. The bracket is important for generating revenue due to the large percentage of the population that falls into it, and because the ultimate goal of reduction in income inequality is to improve the income generating ability of the people in this bracket. In order to reduce income inequality on a base level, there must be a low

level of income being pulled out of lower income earners and a higher amount being put back in their hands through myriad government spending programs. However, if the definition of “low-income” is too thick and results in a large proportion of population being in the bracket, a government cannot afford granting 0% income tax rate for individuals in the low-income category. On the other hand, if the definition is too thin, it may not provide enough tax burden alleviation to reduce income inequality.

Revenue generation for the government is an important consideration when evaluating any changes or impacts from the tax structure. The government needs funding to function on a basic level, and there is no way around that concept. Taxpayers in the United States that make under \$50,000 are generating 7% of the US tax revenue despite accounting for 62% of the number of tax returns and 11% of total taxable income. This discrepancy between taxable income and share of revenue makes sense considering the relatively low tax rate they pay on their income they generate. The ultimate question for this bracket is whether that difference between taxable income and government revenue should be larger.

With this low revenue generation in mind, it is difficult to say that the governments of both the US and Canada are not already forsaking tax revenue by maintaining such low tax rates on low-income earners. Canada boasts similar statistics, with the percentage of before tax income in the possession of their lower tax brackets increasing after taxes are taken into consideration. While a reduction in the tax rate on the individuals in lower tax brackets would result in a reduction of income tax revenue, this reduction would not be crippling to the respective governments.

The second consideration for this tax bracket is that pulling tax revenue from people of this bracket will go against any reductions in income inequality. It is no surprise that taxing people in this bracket means that they have less income which, taken by itself, would increase income inequality. This issue, just like with government tax revenue, is a balancing act for legislators. If minimizing income inequality was the sole purpose of the income tax bracket system, then why not reduce the tax to zero for low-income earners and purely redistribute wealth to these people? If this is the case, what should the low-income threshold be defined as? Is the bottom 5% of income the best, or the bottom 10% or even the bottom 15%?

This question gets into the issues of fairness and generation of government revenue. Does it create parity or reduce the parity that already exists when we convert to a more socialist tax structure? And there will be a reduction in government tax revenue as a result of this decrease? Generally speaking, the United States has a tax rate for its lowest bracket that does a better job of reducing income inequality from the perspective of the removal of wealth from the hands of those in the lowest tax bracket.

\$50,000-100,000

This income tax bracket flips the trend set by the lowest bracket. The United States taxes this range at a rate of 22-24% while Canada taxes at 20.5%. There are some similarities in the discussion of the base income tax rate and this first intermediate tax rate, but the reasons for the levels each country chose will be different. The income earners that fall into this category are no longer impoverished, so a low tax rate for them will do far less to reduce income inequality as compared to those who are earning

\$10,000-50,000. The two factors are the same, with government revenue and the reduction in wealth being instrumental in determining the impact this tax has on income inequality and what rate a government will select.

Relative to the prior income tax bracket, this portion of the income tax accounts for a far more significant percentage of government tax revenue and as a result, the federal governments of Canada and the US are incentivized to leave this rate a little higher despite its negative impact on income inequality. In the United States, income earners that fall in this bracket account for 16% of tax revenue overall. When compared to the 7% of the prior \$50,000, it is easy to see why both governments have significantly higher tax rates for this bracket over the base rate.

For the purposes of income inequality, the amount of income taken from this bracket is closer to the mean income in the United States, and as such skews the Gini coefficient of income inequality less. Nevertheless, a lower tax on this group would still reduce income inequality. The people in this bracket are not the ones that are in the greatest need of government assistance, and that means a higher tax in order to assist those in greater need. Regardless of that fact, the tax structure in Canada decreases the percentage of the country's income in this range from 27.9% of total income to 26.1% of after-tax income. More specifically, there is an increase in percentage of income for the \$50,000-\$60,000 range, but a decrease in the range from \$60,000-\$100,000. The tax structure is effectively increasing the share of income in the lower brackets while decreasing the share in the higher brackets.

This range is the dividing line between income being redistributed to and income being redistributed from. While it straddles this line for income inequality purposes, its rates effectively decrease income inequality overall while still generating a large portion of government income tax revenue. Depending on need of a government, either rate selected by Canada or the United States will be effective as a median rate for income generation and reduction of income inequality.

\$100,000-200,000

While there are far fewer individuals that fall into this tax bracket, the portion of government income that they make up is significant and needs to be weighed with that in mind. This is the first tax bracket for both Canada and the US, that should be considered higher income individuals. Their taxable income is increasing income inequality and they would have the most surplus after covering basic needs. Both governments know this and tax these families and individuals at higher rates because of that.

For the purposes of government revenue, these individuals, due to their high percentage of total income and high tax rate, are invaluable to legislators. The progressive tax structure, by its nature, will generate a higher percentage of revenue from this group because of its higher marginal and average tax rate. In the United States, this income level accounts for 22% of government revenue as of 2014. When considering the number of individuals relative to the lower tax brackets, each individual is now accounting for a drastically more significant portion of revenue.

Like tax revenue, this group is a large contributor to the high levels of income inequality that are seen in the two countries. Since this income group is past the average,

any more income in this group will increase income inequality while an increase in tax level of this group will decrease income inequality. The progressive tax structure continues to ramp up at this level as well. The higher tax rates of around 20 to 30% are a large reason that the Gini coefficient is not larger than it currently is.

This group pays a substantial amount in income taxes each year and is subject to high rates as their income levels increase, but these rates accurately reflect the increases in share of income in the United States, and it seems that the taxes they pay are at the proper rate they should be paying.

\$200,000+

This income group accounts for 56% of the income generated by the United States government, by far the largest portion of income generation, which pays the largest percentage of their revenue as well. This group is taxed similarly by both countries' federal governments, with the United States levying a tax of 35 to 37% for single filers and Canada levying a tax of 29-33% for their single filers. The difference of 4-6% does not seem like much at face value, but when taken across what is the largest amount of income generators and thus tax revenue generators, these small percentage differences are astronomical when it comes to both government revenue and for income inequality. We must also consider the provincial tax rate in Canada, which is coupled with the federal rate. This tax comes out to roughly 15% on income over \$200,000 Canadian dollars, bringing the overall rate to about 50-52% marginally on income generated at this level.

This group accounting for such a large percentage of tax revenue is certainly healthy for income inequality in general, and this large percentage grows smaller

exponentially as you go down in income level. The question is whether this group should carry more of a burden relative to the rest of the population even though they are carrying a substantial percentage and that is already doing lots to reduce inequality already.

Just like the \$0-\$50,000 income level has a significant impact on income inequality because of its distance from median income in both the United States and Canada, this income level has a significant impact as well. This group also extends well past \$200,000 into much larger income levels, so increases in the tax rate serve more to decrease income inequality than the decreases to the tax rate levied on the lower income earners do. This fact must also be considered in tandem with the significant increase in percentage of income that this bracket accounts for. From the years of 1980-2000 alone, the top .1% of earners went from accounting for .5% of income to over 1.5% of income, and this issue has only worsened since then (Saez 2004).

2.3 Statistical Analysis

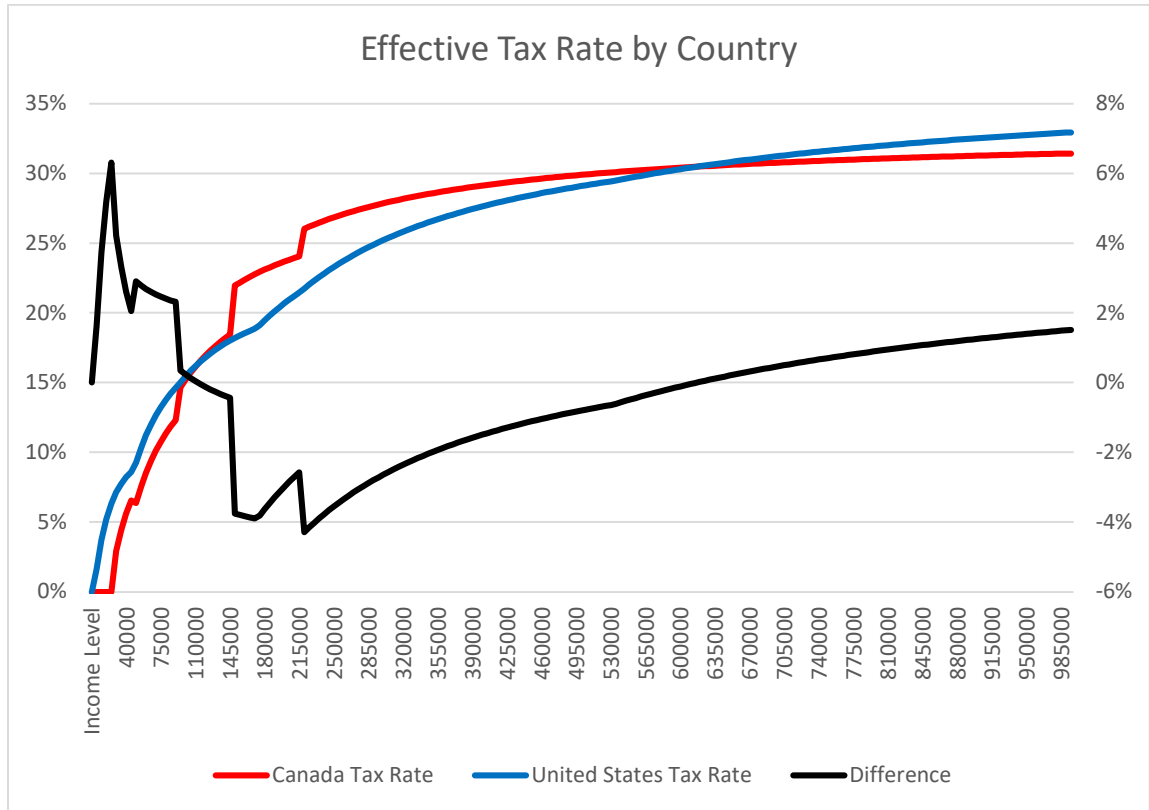


Table 2: Effective Tax Rate by Country

This graph is a chart of the effective tax rates by country as income increases through the brackets. The effective tax rate is the total tax rate based on total tax that is to be paid divided by total taxable income. This rate makes the sense to compare because it allows us to see what is effectively being paid overall by income level as opposed to the marginal rate. The black line is a comparison describing which country is charging the higher rate by percentage, with the negative indicating that Canada is at a higher rate and with the positive indicating that the United States has a higher tax rate. The main

takeaway from this graph is the higher taxes for middle income earners in Canada transitioning to a higher rate in the United States for the highest level of income earner due to the last two income tax brackets with higher rates.

There are many takeaways from the chart listed above, the first of which is clearly the differences between the two countries in their approach to taxation and addressing income inequality with this tool. I have selected the lowest income level to demonstrate the differences in application between the Canadian and the United States' Income tax.

The first thing to address for these income groups is the standard deduction on taxable income and how it impacts these numbers. The United States' standard deduction is a base reduction to the taxable income of a taxpayer that primarily serves to reduce the tax liability of lower income households. For these households especially, the flat nature of the deduction means their taxable income is reduced by a much higher percentage of their income than those who earn more. In this example, the \$12,550 deduction accounts for 42% of their taxable income for the year, assuming the average income is roughly \$30,000. This tool is an excellent means for the government to reduce income inequality without being unfair to those who are earning more. Holding the tax rates the same, if the standard deduction was eliminated, this same individual would be paying an additional 80% of federal income tax on the year. This is because with the standard deduction, their tax liability will be $(10\% \text{ of } \$10,275) + (12\% \text{ of } \$7175) = \$1,888.50$ compared to without the standard deduction where it will be $(10\% \text{ of } \$10,275) + (12\% \text{ of } \$19,725) = \$3,394.50$. Additionally, \$3,394.50 is 80% larger of a liability than \$1,888.50.

The tax rates for these groups are the next consideration. Looking at the tables generally, it is evident that the United States income tax system is more progressive in that the lower income individuals are taxed less, and the higher income individuals are taxed more. For example, individuals earning \$30,000 are taxed at an effective tax rate of 6.3% in the U.S as opposed to 7.8% in Canada. This is on the basis of solely federal rates and does not take the provincial or the state taxes into consideration. The lower ETR means that individuals in this group carry a lower tax burden in the U.S. than in Canada. This means that the U.S. tax rate structure reduces income inequality to a greater extent than Canada for this low-income group of individuals. Secondly, the U.S. individual income tax rate structure applies two brackets for individuals earning below \$30,000 taxable income, one is the 10% bracket and the other is the 12% bracket. In contrast, Canada applies a uniform 15% to individuals in this group. The distinction between the 10% and the 12% group addresses the concern raised earlier regarding how wide the bottom bracket should be. This feature in the U.S rate structure isolates the lowest income group, so its bottom group is narrower than the Canadian bottom group. Furthermore, the U.S. applies a 10% tax rate instead of the Canadian 15%, resulting in lower tax burden in the lowest income levels. For example, a person earning \$20,000 a year would only pay \$745 in taxes on their income in the U.S but would be subject to \$840 tax in Canada based off of the rates as well as the standard deduction and basic personal exemption. Therefore, this feature in the U.S. tax rate is better at addressing income inequality among the low-income earners.

In conclusion, when designing the income tax rate structure, there are three important features that policymakers must consider. First is how large the difference should be between the lowest to the highest income levels (i.e., the level of progressivity). Second is the threshold of each income bracket. Does the cut capture the income distribution in the society? Third is how much the jump should be and how granular the tax bracket needs to be. In general, the more specific the tax brackets are, the better the system is at distinguishing individuals at different income levels, and more granular brackets would be accompanied by smaller jumps. However, if the income distribution reveals a significant income gap, then the rate structure should also reflect a higher jump in the marginal tax rate between the two income brackets. In making these decisions, each country's tax policymaker to consider the income distribution in its own country.

2.4 Deduction/ Credit

A shared concept among many tax policies is that income below a certain level should not be subject to tax because the income covers only basic needs for survival. Two approaches are available to achieve this. One is to apply a uniform amount of deduction that offsets taxable income, and one is to apply a credit that offset tax liabilities. In the latter case, the credits are often computed at the lowest income tax rate. The United States uses a deduction of \$12,550 before taxes are calculated (single taxable, which tax year?). When calculating the tax liability for the year, a taxpayer would reduce their taxable income by the amount of the standard deduction and then calculate their tax based off this new number and the rates that would apply. Therefore, this deduction offsets

income at the marginal tax rate of the taxpayer, which is beneficial for high-income earners. On the other hand, Canada uses a credit, which reduces the income tax liability after it is calculated. The taxpayer will calculate their tax liability based off taxable income and the applicable rates, then reduce that number by \$14,398 (the basic personal exemption amount for 2022), multiplied by 15%, the lowest income tax rate. Therefore, the credit offsets income at the lowest tax rate, which is beneficial for low-income earners.

The reason that these two are important to differentiate is because of the difference that they have on who is paying the tax. In the case of a taxpayer in the United States, the standard deduction will reduce their ending tax liability by their highest tax rate multiplied by the \$12,550 deduction. This means that a high-income earner may have a benefit from this system of $\$12,550 \times 37\% = \$4,643.50$ compared to a low-income earner's benefit of $\$12,550 \times 10\% = \$1,255$. The standard deduction has a greater benefit when an individual's marginal tax rate is high (i.e., high-income earners). Compare this to the Basic Personal Exemption amount in Canada that generates a credit at 15% (the lowest tax rate bracket) regardless of one's marginal tax rate.

Standard Deduction

The United States uses a standard deduction to reduce their tax liability for all taxpayers. This standard deduction represents a decrease to total taxable income of \$12,550, the net of which is then taxed based on the applicable income tax rates. In practice, this means that anyone earning under this \$12,550 level pays no income tax at all. The name "standard deduction" is to distinguish from "itemized deduction", which is

also available in the U.S. system. Whereas a standard deduction applies universally to all taxpayers with the same filing status, an itemized deduction depends on personal activities each taxpayer has, such as medical expenses, state and local taxes, charitable contributions, casualty losses, etc. The specific items allowed, and the limitations are specified by Congress. A taxpayer chooses the higher between the two to minimize tax liabilities. A taxpayer chooses the standard deduction when he or she does not have much personal activities going on to generate sufficient itemized deductions.

For the purposes of this analysis, though, the most important characteristic is that the deduction eliminates the income at the highest tax bracket of the income earner. This means that a person earning \$1,000,000 reduces their tax by \$12,550 in the 37% tax bracket while a person earning \$40,000 reduces their tax liability at a rate of 12%. This difference amounts to an over \$3,000 higher deduction for the higher income earner. This mechanism, while beneficial for all taxpayers, will actually increase income inequality because of its implementation.

Basic Personal Exemption

Compare this to the Canadian Basic Personal Exemption. At face value, it is similar to the standard deduction. Canada reduces the tax liability by \$14,398 but instead of reducing the taxable income from the highest level of income down, they reduce income from the bottom up. This means that a person reduces their income tax by the lowest rate times the applicable exemption amount rather than the highest income rate like they pay in the United States. Additionally, the exemption is subject to a phaseout from income between the bottom of the fourth tax bracket and the bottom of the fifth tax

bracket. In practice, this means that all taxpayers will receive the same credit which, as a percent of total taxable income, is much more beneficial to the lower income earners than it is for the higher income earners. This strategy is thus progressive due to the phaseout as opposed to the regressive structure of the United States tax policy.

Implications

In the United States, a person who is paying taxes in the 37% tax bracket will have their tax liability reduced by 37% of the standard deduction. Compare this to in Canada, where both low-income earners and high-income earners are both only reducing their income by 15% of the basic personal amount. From an income inequality perspective, the standard deduction in the United States is increasing income inequality as the higher a taxpayer's income level is, the more they deduct. In Canada, the system is at least neutral from an income inequality perspective, and when combined with the phaseout, it actually serves to reduce income inequality.

2.5 Width of Tax Brackets

When evaluating the tax structures for mitigation of income inequality, it is important to consider not only the rates being paid, but also the width of the brackets as they go up in income. The wider the bracket, the less tailored to the income earner the tax becomes. In comparing the United States and Canada, we can see that the US has narrower income brackets and thus more frequently adjusts the tax rates to the income earner. This leads to more accurate taxation and more progressivity in the tax structure. In effect, by more frequently increasing the tax rate to reflect the income of the taxpayer, a

narrow tax structure means that taxpayers are paying a higher and more accurate rate to what the government wants them to. A wider tax bracket would allow for higher income earners to pay a lower rate longer than they would if the bracket was narrower. While the tax rates may increase at roughly the same pace judging by income level, the frequency of those steps has an important impact on how income taxes generate revenue.

A more granular tax system with narrower brackets would improve the accuracy of the progressivity in the rates. Higher income would be taxed at higher rates and lower income would be taxed at lower rates. Instead of the large brackets which take jumps to correct for the increases in tax revenue throughout the bracket, the narrower brackets would allow for citizens' incomes to be taxed accurately and be better tailored to reduce income inequality in a way that fits income better.

If we are to evaluate the tax structures of the two countries purely based on their bracket widths and not on population distribution or tax rate. The US would demonstrate a tax structure that does more to counter income inequality solely based on this one characteristic. Canada has an average bracket width of \$98,763.57 compared to the United States' bracket width of \$61,940.50. The difference of around \$37,000 means that for every tax bracket in Canada, there is roughly that much money being paid at a lower bracket than they would be in the United States. This sizable difference scales a rather nuanced point to large proportions when extrapolated over an entire population of a country the size of the United States and Canada.

CHAPTER THREE

Social Impact

3.1 Introduction

While it may not be the first impact one thinks of when analyzing tax policies, the social implications for every change in tax policy can be far reaching. Not every single person may knowingly shift their daily habits or important life decisions drastically due to taxes levied on that individual, but even if only 1% of a population make a shift, it can be enough to have serious consequences socially in the areas that a specific tax provision makes an impact. To illustrate, I compare the demographic breakdowns between the United States and Canada that share similar country characteristics but differ on how it taxes married couples. In this thesis, I primarily explore the differences in marriage rates and labor rates, but there can be innumerable interactions that result in social changes outside the scope of this thesis because of the complexity of both the tax system and the social structure.

3.2 Taxation of Married Couples

There are two options available to tax married couples. The first option is to treat the couple as one taxing unit. Under this option, the unit of taxation is a couple, and income from both are included in taxable income, but they together can access a wider bracket. The second option is to treat each spouse. Under this option, the unit of taxation is an individual, and only his or her own income is included in taxable income of a spouse's return, and each spouse accesses the individual tax brackets. The two options

will result in the same total tax across the couple if the brackets for a couple are exactly twice as large as those of the single status, and the two spouses earn the same level of income.

In the U.S., married couples can file under the Married Filing Jointly (MFJ) status instead of each filing a separate return with a Single status. As of 2022, the tax brackets for MFJ are exactly twice as those of the single status, except for the highest marginal tax rate bracket. For the 2022 tax year, a single taxpayer will pay 37% tax of any income earned over \$578,126 as compared to a Married Filing Jointly couple who will pay 37% on any income over \$647,850. On the other hand, Canada's personal income tax applies on an individual basis, so each spouse is taxed on his or her own income.

Two important observations can be made. First, consider two couples that earn the same amount of taxable income. The first couple has each spouse earning \$100,000 each, and the second couple has one spouse earning \$200,000 and the other spouse not working. The second couple will pay the same level of tax as the first couple in a couple-based system (e.g., U.S.) but will be subject to a higher tax under the individual-based system (e.g., Canada). From this perspective, the individual-based system encourages similar level of income between spouses whereas the couple-based system does not distinguish spouses with very different levels of income. From a pure tax perspective, an individual-based system promotes income equality among married couples that could contribute to income quality among genders.

The second observation is that the top marginal tax rate bracket for MFJ is not twice as large as that of the single status. In fact, the top marginal bracket for MFJ is only 69,724 more than that of the single status. What this means is that an individual married to someone who earns \$578,126 will pay 37% of tax on any additional income even if his or her own income is \$69,724. The same individual is only subject to a 22% tax rate on additional income if he or she stays single. The same individual would also be subject to a lower marginal tax rate if he or she marries someone whose income is in a lower bracket. The intention behind this could be that if rich individuals marry each other, they together have higher responsibility to carry the society's tax burdens. However, it could also present a disincentive for both spouses to earn a high level of income rather than having one spouse earning a high income.

Some literature refers the additional tax a couple pays because of their marriage as a "marriage tax". With the couple-based system in the U.S., this only occurs in the top marginal rate bracket. the marriage tax was more substantial for all income earners as it was in the mid-1990s, the impact was not immense. It was estimated that "52 percent of American couples in 1994 [paid] a marriage tax that [averaged] \$1,244," or roughly \$2,500 in today's dollars. This impact was also across all tax brackets, not just on the highest income earners.

At that time, there was also the potential for a couple to earn a marriage subsidy in certain cases. This subsidy was for primarily marriages that relied upon one income earner to provide the financial basis for the household. As such, it is predominantly higher income households that were able to take advantage of this nuance in the tax code

and hurt income inequality overall. It is lower income earners who rely on both spouses to maintain the household that were subject to this marriage tax, and this issue deterred marriage in the lowest income brackets in the United States until the tax code was changed to address this discrepancy in the low to middle income tax brackets.

While there was a statistically significant change in marriage rates, the impact was a roughly 2% rate of change in marriage decisions is not massive. Despite the small change, this shift is linked to such a vital statistic for the demographics and the economics, that the change is quite important. The impacts are discussed further in the following section, but it is important to consider this change in light of these impacts being extrapolated across all demographic groups.

Impacts

In order to fully understand the impact a marriage tax has on the culture of a country, the general impacts of marriage on a culture needs to be addressed. While there are countless reasons for the increase in income inequality over the past few decades in both the United States and Canada. It seems that a major reason for this increase is the decline in marriage rates. Many different studies have attested to the causation in the relationship between these two phenomena, with the clear advantages to a two-parent household over a single parent household both culturally and economically playing a large role in these observations. One such study created a simulation to determine the impact that a higher marriage rate would have on income inequality, and he concluded that “On the basis of projections of simulated marriages and marriage-induced earnings effects, the 1971-89 trend away from marriage among parents accounted for nearly half

the increase in income inequality and more than the entire rise in child poverty,” (Lerman 137).

This issue also crosses racial boundaries and impacts all races that were studied. Even though all racial groups are impacted in the same way, the impacts are disparate between racial groups in the scale of said impact. Lerman concluded that “black children were hurt most by the weakening ties to marriage among parents,” and saying that “The overall poverty rate would have declined from about 14% to 13% instead of increasing to 17%,” (Lerman 137). Not only are declining marriage rates hard on the entire population of the United States and Canada, but they are also especially hard on the groups struggling the most in these countries. Lerman’s conclusions are also based upon the Gini coefficient, and he looks directly at what the impact of low marriage rates on income inequality. Looking through the lens of income inequality, it is easy to see that declining marriage rates in lower income households is as harmful to the health of these societies as any other phenomenon affecting these groups.

3.3 Labor Rates Per Gender

Another important social impact of tax policy is how it changes the labor force participation rates among the genders. While this does not seem like it would be an outcome of tax policy, the way that income taxes are implemented either on an individual basis or on a couple basis changes the tax benefit to both or one spouse working. Canada’s income taxes are imposed on an individual basis, meaning each spouse is taxed individually at the same rate. Compare this to the United States income tax policy, where

the income generated by each spouse is combined and taxed at one marginal and progressive tax rate.

Practically, this means that the lower income earning spouse is less incentivized to work if the higher income earning spouse is already earning a higher income in the United States. This is because their income would be taxed at least at the highest marginal tax rate the spouse is paying on their income. In Canada, both individual's income would be taxed separately and start at the lowest marginal tax rate completely independent of whatever the spouse is earning.

In the following example, the tax paid on income generated by a husband earning \$200,000 and a wife earning \$80,000 is shown based upon the United States tax rates in the case that incomes are taxed separately and in the case that incomes are taxed cumulatively.

				Husband Income	\$ 200,000.00				
				Wife Income	\$ 80,000.00				
Separate Incomes						Combined Incomes			
Husband			Wife			Husband and Wife			
Taxable Income	Tax Rate	Tax	Taxable Income	Tax Rate	Tax	Taxable Income	Tax Rate	Tax	
\$ 10,275.00	10%	\$ 1,027.50	\$ 10,275.00	10%	\$ 1,027.50	\$ 20,500.00	10%	\$ 2,050.00	
\$ 41,775.00	12%	\$ 3,780.00	\$ 41,775.00	12%	\$ 3,780.00	\$ 83,550.00	12%	\$ 7,566.00	
\$ 89,075.00	22%	\$ 10,406.00	\$ 80,000.00	22%	\$ 8,409.50	\$ 178,150.00	22%	\$ 20,812.00	
\$ 170,050.00	24%	\$ 19,434.00				\$ 280,000.00	24%	\$ 24,444.00	
\$ 200,000.00	32%	\$ 9,584.00							
Total Tax		\$ 57,448.50				Total Tax		\$ 54,872.00	
Wife's Tax		\$ 13,217.00				Wife's Tax		\$ 19,200.00	
Husband's Tax		\$ 44,231.50				Husband's Tax		\$ 35,672.00	

Table 3: Spousal Differential Analysis 1

The chart presents a few important takeaways on a practical level. The first pertains to the total tax liability that the couple would pay in both cases. There is a

marriage benefit to marrying in the current United States tax structure for this couple specifically. Compare this to the couple taxed separately, the same as an unmarried couple in practice. They are being charged \$57,448.50, while the married couple is being taxed \$54,872.00. This shows that there is a financial benefit to being married in these circumstances. This conclusion does not hold uniformly across all income levels and distributions of income between spouses, but there are cases in which there is a benefit to being married from a tax perspective.

The second takeaway is the one that pertains more to the purpose of this section of the thesis. The wife in the case where incomes are taxed cumulatively, would be taking on \$19,200.00 of income tax should she choose to work under this tax system. This is a significant amount more than the income tax under the separate income tax system where she would be taxed \$13,217.00. These numbers paint a clear picture that cumulative spousal income taxes reward skewed incomes between spouses as compared to the separate income tax systems where an even level of income is rewarded with lower income taxes.

The following chart presents a situation where income levels are more even with the husband and wife both earning \$140,000 for a total of \$280,000.

			Husband Income	\$ 140,000.00				
			Wife Income	\$ 140,000.00				
Separate Incomes			Combined Incomes					
Husband			Wife			Husband and Wife		
Taxable Income	Tax Rate	Tax	Taxable Income	Tax Rate	Tax	Taxable Income	Tax Rate	Tax
\$ 10,275.00	10%	\$ 1,027.50	\$ 10,275.00	10%	\$ 1,027.50	\$ 20,500.00	10%	\$ 2,050.00
\$ 41,775.00	12%	\$ 3,780.00	\$ 41,775.00	12%	\$ 3,780.00	\$ 83,550.00	12%	\$ 7,566.00
\$ 89,075.00	22%	\$ 10,406.00	\$ 89,075.00	22%	\$ 10,406.00	\$ 178,150.00	22%	\$ 20,812.00
\$ 140,000.00	24%	\$ 12,222.00	\$ 140,000.00	24%	\$ 12,222.00	\$ 280,000.00	24%	\$ 24,444.00
Total Tax						Total Tax		
Wife's Tax						Wife's Tax		
Husband's Tax						Husband's Tax		

Table 4: Spousal Differential Analysis 2

Impact

The important conclusion to be drawn from this illustration is that there is not a marriage incentive or punishment in the case of each spouse earning an identical amount of income. The financial cost or benefit will not be a factor when determining whether to make that commitment and the government is not using the tax structure to incentivize this demographically beneficial decision in its population. There is no difference in treatment of this group for between the Canadian and the United States tax systems, so this demographic group is relatively unimportant when deciding whether a combined or an individual income tax structure is to the benefit of the citizenry of a country.

As far as income tax distribution across the couple, there is clearly an even distribution of income under the assumption that each spouse is earning the same amount, and there is no marginal cost that is discouraging one spouse from entering the workforce or pursuing additional work more than the other.

The final chart represents a completely disparate income situation with the husband earning \$400,000 and the wife not earning any income.

			Husband Income	\$ 400,000.00			
			Wife Income	\$ -			
Separate Incomes				Combined Incomes			
Husband			Wife			Husband and Wife	
Taxable Income	Tax Rate	Tax	Taxable Income	Tax Rate	Tax	Taxable Income	Tax Rate Tax
\$ 10,275.00	10%	\$ 1,027.50				\$ 20,500.00	10% \$ 2,050.00
\$ 41,775.00	12%	\$ 3,780.00				\$ 83,550.00	12% \$ 7,566.00
\$ 89,075.00	22%	\$ 10,406.00				\$ 178,150.00	22% \$ 20,812.00
\$ 170,050.00	24%	\$ 19,434.00				\$ 280,000.00	24% \$ 24,444.00
\$ 215,950.00	32%	\$ 14,688.00				\$ 400,000.00	32% \$ 38,400.00
\$ 323,925.00	35%	\$ 37,791.25					
\$ 400,000.00	37%	\$ 28,147.75					
Total Tax						Total Tax	\$ 93,272.00
Wife's Tax						Wife's Tax	\$ -
Husband's Tax						Husband's Tax	\$ 93,272.00

Table 5: Spousal Differential Analysis 3

Impact

This group is the second most important spousal income pairing for the analysis. The current tax system of the United States for a married couple is displayed by the combined incomes section on the right of the chart. In a married filing jointly situation, there is a large tax benefit to marriage due to the distribution of the income across two prospective income generating individuals in a marriage. Of the three groups, this selection offers the highest benefit to a couple to get married and file together in the case of a combined income system.

The Canadian system with two individuals filing separately offers no incentive to marriage for this couple and will generate the same amount of tax revenue in both cases.

For the purposes of income inequality, the disparity between the two systems increases as the taxable income of the couple increases and as the taxable income of the couple falls more on one spouse as a percentage of total income. This means that higher income generating families are taxed less under the combined income system than they are in the separate income system.

Results

As shown by the discussion as well as the charts with practical examples, tax structures with separate income tax rates for both spouses incentivize similar income levels between spouses as opposed to one spouse earning the significant portion of the income for a household. This begs the question of whether similar income levels for both spouses is positive for income inequality as we are looking at it.

Most studies have presented the fact that, while there is an inherent good in the increasing equality in opportunities being presented to both genders, increases in labor rates of women does not have a clear decreasing effect on income inequality. Just like men's wages vary greatly across income levels, which contributes to income inequality, women's income levels vary the same way. In practice this means that just like there are men who earn significant amounts of money and men who earn relatively less, there is a large inequality in the amount that women are compensated for their work. In order for an increase in the labor force participation rate for women to decrease income inequality, they would have to be compensated at a more equal rate than men, which is defeats the purpose of seeking higher labor force participation. If more women working did decrease

income inequality, it would mean that they are not being compensated at the same rate as men.

This is not to say that increasing the labor force participation rate among women is not positive, just that it does not serve the purpose of decreasing income inequality. I would still posit that the United States should evaluate a tax structure that taxes spouses separately, but they must ensure that they realize this policy would not reduce income inequality.

CHAPTER FOUR

Corporate Income Tax

4.1 Introduction

While it can be seen as a relatively uncomplicated portion of tax policy due to its flat structure, the implications of corporate taxation, especially when considering who is really paying the tax for the corporation, are important to evaluate when discussing income inequality as it pertains to tax policy. This nuance is called incidence of corporate tax and it essentially asks if higher corporate taxes are passed on to shareholders in the form of lower dividends and stock price growth or if they are passed on to employees in the form of lower wages and salaries.

For the purposes of income inequality, if the laborers are paying the tax, then lower corporate taxes would increase income inequality, whereas if shareholders are paying the tax, higher taxes would lower income inequality. This is not a 100% rule, as this assumes that those collecting the distributions from the companies are on the higher end of the income breakdown, but this assumption generally holds true.

In order to determine whether a higher corporate tax rate is advantageous to governments wanting to reduce income inequality, we must determine if an increase in that tax rate hurts higher income earners more than lower income earners or visa versa.

This delineation is also based both on short term impacts on income inequality as well as long term impacts to income inequality. As we will see in some of the prevailing

literature, these impacts shift over time, and may be both positive or negative in the long and short term.

4.2 Immediate Impact

The first consideration is how the tax is felt immediately following a shift in income tax rate. How does a large increase or decrease in income tax rate change the distribution of income within the area a government controls? At a base level, this asks whether in the year of a tax rate change, are the wages or the payments to owners impacted more by the change in rates.

To answer this, we look at prevailing research on the subject of the incidence of tax following cuts. Much of this impact is determined by the openness of the economy in which the government is taxing. In the case that those determining where capital is allocated can just decide to relocate that capital to an area where the taxes will not impact their returns, much more of the burden will fall on wage earners who cannot relocate as easily as capital. If an economy is more on the closed side of the spectrum, both the skilled and unskilled labor will have more bargaining power when it comes to the determination of what wages and salaries will be.

In open economies, it is seen that the burden of the new tax can fall from 70% to 100% on the shoulders of the employees, thus increasing income inequality over the long run as wages will decrease and capital will flow into the economy from different locations where workers are not being benefitted.

Being as both the United States and Canada are extremely open economies, we can assume that this rule will hold for them as well. A high percent of the corporate tax will translate to lower wages for both skilled and unskilled workers in the United States and Canada. If we look at the historical data and prevailing literature for the United States, we can see that this assumption holds fast.

4.3 Long Term Impact

Given that the capital in the United States is extremely fluid and abundant, both in its ability to move within the US market as well as internationally, it seems that there is a greater burden placed on the workers to pay corporate tax hikes based on the data in this article. The data indicates that “for every one dollar increase in state and local corporate tax revenues, wages can be expected to fall by roughly 2.5 dollars” (Carroll 3).

This decrease in wages for workers is larger than the actual revenue generated from the tax, because the decision makers with capital to invest are choosing to go to markets where there is a lower tax at a higher rate than the tax increase can account for. When evaluated from that lens, it is easy to see how this logically makes sense.

This is not the only perspective on the topic, and the literature is split on the incidence of tax overall. Recent years have allowed researchers to evaluate this phenomenon due to the large changes in the tax rates and the resulting years of data that has been collected.

As compared to the Harberger model, Carroll incorporates the concept of the open market in ways that are necessary for us to truly evaluate whether the model accurately depicts how the market responds to shifts in the corporate tax structure. The modern

economy is open and fluid, and to assume anything other than that would be naïve in today's worldwide economy.

There are a few implications for how we evaluate the corporate tax structure based upon the conclusions that Carroll reaches. The first and main point is that an increase in the corporate tax rate would increase income inequality over the long run. By hiking the rates, there would be a dip in earnings of the capital holders who are probably at the higher end of the wealth and income brackets in the United States, but the dip is shown to be followed by a larger decrease in the earnings of lower income workers. The benefits of the tax increase to income inequality are outweighed by the decreases in income and quality of living for the people that we should be striving to help the most.

4.4 Harberger Model (1985)

The prevailing opinion for the past roughly 40 years has been linked to the Harberger model. The main conclusion that drawn from this model is that, in a closed economy, the entirety of corporate tax increases are borne by capital holders, not wage earners. Harberger constructed a model to provide evidence for this fact being the case, and while there are some important assumptions that are made by Harberger, the model still warrants consideration due to its impact on the topic over the past few decades.

While there is clear evidence that this model and conclusion may be at least in part true, the basis of the model and paper is on assumptions that do not necessarily hold true in a modern economy. The two assumptions I take issue with are that we are functioning within a closed economy and that there are no differences in spending patterns between government and individuals in the economy.

As we have seen in the last section, the main reason that laborers would bear any portion of a tax is because the capital is free to allocate itself outside of the system the tax is taking place in. By removing the ability for capital to do this, in a closed system where wages are less liquid than profits demanded by companies, the only place for the tax to go is to the capital and revenues of the company.

Given the time and geopolitical situation in which this model and conclusion was reached, it makes sense that a closed economy be a given assumption. Nevertheless, in today's world, where it is nearly as easy to allocate capital internationally as it is in your own country, we cannot generate models to make conclusions off of where it is assumed that capital can only be invested domestically. For that reason, I believe that Carroll's more nuanced conclusions are more reasonable to utilize going forward in this analysis.

4.5 Conclusion

Based on the two analyses and the conclusions that they have reached, we can say that if our sole objective is a reduction in income inequality, an increase in the corporate tax rate will go against and improvement in this area. The assumption that a higher tax on the capital holders in the United States will result in an increase in the quality of life of those at the bottom of the income brackets is false. In practice it is shown that an increase in taxes on corporations will result in a fleeing of capital from the United States market and will harm the workers whose labor is not so free to relocate to other countries or areas where the taxes are lower. The corporate income tax is borne by the group that is less able to relocate and adjust to the higher taxes. This group happens to be the employees and the very people that we should be striving to help.

In order to reduce income inequality or even improve quality of life for the lower income earners in the United States or Canada, means other than the corporate income tax must be used because of how open each of these economies are. It seems that on face value, an increase to this tax would improve the situation, but in practice it would do the opposite.

CHAPTER FIVE

Conclusions

5.1 Basis for Conclusions

The main takeaways from this discussion revolve around the three central portions that were evaluated: the Social Impacts, the Personal Income Tax, and the Corporate Income Tax in their consequences to income inequality. While each of these do change how money flows through the economies of the countries they are in, the impacts are disparate in their scale and how the changes alter peoples' behaviors.

5.2 Personal Income Tax

As the largest government revenue generating tax policy and the policy that has the greatest impact on the personal finances of Americans and Canadians, this portion of tax code merits the most discussion on how and why its characteristics alter income inequality over the globe. The main points that were touched on in this thesis and that are most relevant to the discussion about income inequality are the marginal rates applied, the width of those tax brackets, and the deduction/credit portions of the tax codes.

The tax rates applied to a populations overall income tax generally cross a wide range from lowest to highest income levels and that is true in both the United States and Canada. The best way to reduce income inequality on face value would be to increase the marginal tax rates on the highest levels of income earned and ensure that the lowest rates are being applied to the lowest income levels. This would in practice reduce the income retained at the highest echelons of wealth and increase the level of income retained by the

lowest income earning individuals. The important fact to consider when looking at adjusting these rates to what could essentially form an income distribution that was flat for all individuals, is whether reducing the financial incentives present for income earners to strive to produce more for the economy would drive down the quality of life enough to counteract the potentially lower rate of income inequality? This will be further covered in the analysis portion, but the topic must be introduced to show that this issue is not as black and white as *taking money from those who have more and giving it to those who have less* to reduce income inequality.

As far as width of tax brackets are concerned, the analysis described above clearly illustrates that narrower tax brackets more accurately prescribe tax rates to income as it increases up the tax brackets. This means that progressive tax rates are more efficacious if all other factors are held constant. Wider tax brackets allow for taxpayers to earn higher levels of income and still pay tax rates on that income that is given for lower income levels. This is complicated conceptually, but the illustrations above give a thorough explanation as to why this is the case. Essentially, a tax structure seeking to reduce income inequality must tax income at as specific of rates as it can to ensure that the higher income earners are being taxed at high enough rates and that lower income earning individuals' tax rates are as low as possible.

The final portion of the personal income tax structure that was discussed is the decision to allow for a tax deduction or a credit on income earned or taxes paid. Similar to the width of the tax brackets, there is a clear solution that serves to reduce income inequality better than its alternative. By their nature, a standard deduction reduces income

that is going to be taxed while a tax credit reduces the income tax liability after the tax has been calculated. At a glance, this would seem like they do essentially the same thing, and while they are implemented to accomplish the same purpose, their nuanced differences make one clearly better to reduce income inequality. Standard deductions, by reducing taxable income, reduces the amount that will be taxed at the highest rate a taxpayer is paying. This means a high-income earner will have their taxes reduced by a higher percentage of the standard deduction than a lower income earner will, making the standard deduction a regressive tax tool which increases income inequality independent of the remainder of the income tax structure. This is compared to a tax credit, which reduces the tax liability that a taxpayer is liable for at a flat rate which depends on the amount of tax paid by the individual. Between the two tools, the flat tax rate of the tax credit has a positive impact on inequality compared to the negative impact of the deduction structure that the United States currently uses.

5.2 Social Impact

While the social impact of the tax structures in the United States and Canada showed that they do not have nearly the size of impact that the corporate and personal income taxes have on income inequality specifically, they do have an impact on both income inequality and in the behaviors of individuals in both of the countries in labor force participation rates as well as marriage rates and countless other behaviors.

The decision to either tax married couples together or apart has had a rippling effect across the social structure of the United States and Canada. As is shown above by the prevailing literature, the structure that the United States uses can afford a marriage tax

or a marriage subsidy depending on the filing status and the income levels of the two spouses. This means that the likelihood that a couple marries is slightly altered depending on how these factors exist within a couple's situation. The United States also taxes the highest income earners at a higher rate if married compared to if single, and while this tax only impacts those who are earning an extremely large amount of income, the government is still disincentivizing marriage within the current code. In addition to this, Canada, by taxing individuals separately and not jointly, reduces the marriage penalty or benefit for couples as they are taxed in the same way they would be if they were single. There is not a clear best practice for these policies as it depends on the desires of the policymakers in how they want to set up the incentive structure of the tax code, but it is important to consider the fact that the code does have a small but significant impact on marriage rates which is an important social indicator.

The other relevant social impact that was discussed above is the marriage tax or marriage subsidy that is present with some tax structures including the one the United States currently has in place. As studies have shown, while the monetary value of an income tax may seem like a poor reason to decide to or fail to get married, there is a small but significant effect that the tax structure has on marriage decisions of the taxpayers it is over. With the current tax structure the United States uses, there is a tax or subsidy depending on income level as well as income distribution between spouses which will add a financial component to a marriage decision on top of any other considerations a couple is weighing. Compare this to the structure used by Canada, by which they tax single individuals and married couples both as individuals. When evaluating which

strategy is most helpful for reducing income inequality, we must consider the value of marriage and how rates of marriage among income groups change financial decisions. From this analysis, we concluded that higher marriage rates are causally linked to better financial results among all income levels and demographic groups. The disparate impact on minority groups is also an important factor to consider when evaluating the incentive structure that is inherent to the tax system. We can easily say that higher marriage rates are better for society, but there is an ethical dilemma as to whether a tax system should subsidize marriage and in turn punish those who are single to improve the ultimate outcome economically. The objective answer to this question is to incentivize marriage to reduce income inequality, but further analysis will follow below.

5.3 Corporate Income Tax

The final section to reach conclusions on is the level of corporate tax that should be levied to reduce income inequality in countries with demographics like those of the United States and Canada. The discussion of the corporate income tax revolved primarily around the incidence of the tax or who is actually paying the tax as corporations do not pay the tax in a closed system, there are people who pay the tax through the corporation.

Research that was evaluated explains that there is no clear answer to who is paying the tax levied on corporations due to the inherent complexity and diversity of how the economy reacts to increases and decreases in taxes. This is due to increases and decreases in the capital available to the corporation to either distribute to owners or to pay to its employees. The main variable that seems to indicate which group, employees or

owners, is the openness of the economy because of the ability or lack thereof for capital holders to generate returns in other markets.

If the economy is open and fluid for capital, the capital owners of the company being subject to the newer tax rate have the option to allocate capital internationally or in another jurisdiction where the taxes are lower or where the rates of return are higher. With this being the case, in order to retain shareholders, companies are forced to reduce expenditures or wages so that the shareholders can maintain a high enough rate of return that they will leave their capital invested in the company.

A closed economy is different for the purposes of the incidence of tax. In these cases, research has shown that if owners do not have opportunities outside of the closed economy that the new tax is being levied in, the tax is paid by the capital holders. This is due to the lower flexibility of worker wages. Generally speaking, owners will seek the highest return they can, and if worker wages are not flexible, the owners will bear the cost of the tax in order to maintain the return that they can manage to generate from the company.

Overall, the tax will be paid by the less flexible income earners in the corporate structure of the company. In the case of an open economy, lower income taxes which will permit a higher level of earnings for a company, resulting in a higher level of income for both the capital holders and the employees which are typically of a lower income level. This is most similar to the situations of both Canada and the United States. In the case of a closed economy where the markets do not allow for capital to be easily allocated outside of the jurisdiction of the taxed being levied, a higher corporate tax rate would be

a good way to reduce the income generated by the capital holders who are typically the highest income earners, especially compared to the employees of the corporation. Nevertheless, the closed economy is becoming less and less prevalent as a more global economy becomes more pervasive with every new development in technology.

5.4 General Conclusion

If we are to generally apply what has been discussed and how these policies could be best implemented from a purely income inequality perspective, it is clear to see that there are best and worst practices for Canada and the United States. After first qualifying that these policies are solely to reduce income inequality, the best personal income tax structure would involve a tax rate that is highly progressive, starting with a 0% to low % tax rate for the lowest income individuals to a high rate for the highest income earners. The tax should also be levied on married couples at individual rates to encourage marriage and ensure that there are no financial reasons not to get married. The connection has been shown in the analysis above that low marriage rates, especially in lower income and minority communities can lead to disastrous consequences both socially and economically for those people both with and without children in unmarried households. Special attention should be given to tax policies that ensure there are no punishments for those who elect to get married. These policies would also serve to encourage female workplace participation, thus increasing overall GDP in these countries. The final piece of the income tax is that the brackets should be narrow to ensure that income is being taxed at the progressive rate more accurately than it would be if the brackets were wider.

For the corporate income tax, it seems clear that a lower tax rate would encourage business and ensure that there are no tax consequences to worker's wages when trying to tax the owners of the companies. Personal income taxes are a far more accurate way of taxing high income individuals compared to the corporate income tax which can cause a reduction in income for the lowest income earning individuals because of the tax on what is supposed to be higher income individuals. This is not to say that the corporate tax as a whole is damaging to income distribution in the United States, but it seems that the liquidity of the capital markets internationally makes it difficult to have a corporate tax that is not ultimately paid by employees who cannot relocate as easily as the capital of high-income individuals. A lower corporate income tax would serve to decrease income inequality in countries where the economy is more open, and a higher income tax would serve to decrease income inequality in more closed economies.

CHAPTER SIX

Analysis

6.1 Introduction

In order to truly apply these conclusions in a practical tax policy scenario, there needs to be an analysis of how these decisions would change income inequality and all other surrounding factors if they were applied. It is not so simple as to say, taxing everyone 100% and redistributing wealth would completely eliminate income inequality, but the incentive structure that the world is based upon would collapse. There are near infinite factors that will be influenced by the changes proposed in this section and there really can be no complete certainty as to how a tax policy change would play out in the real world. This can be easily seen by the historical changes in policy to this point that have negatively influenced social and economic situations all over the globe. No policymaker ethically makes the decision to implement tax legislation that would have adverse effects, but in many cases, there are myriad negative externalities that policymakers do not see coming. The implementation strategies and outcomes need to be examined for all the policy changes addressed in the conclusion section above.

6.2 Progressive Income Tax Rates

The determination around the income tax rates revolves around how much of an incentive is necessary to allow for the capitalist structure to improve the lives of those in the society while also ensuring that there is not a massive amount of income inequality resulting from the way the economy of a country is set up. Income inequality is

inherently a destructive force in a society for the many reasons discussed in the introduction, but there is a delicate balance between the burden placed on high income individuals in the form of high tax rates and the improvements made to society from the redistribution of wealth through the government and to the lower income individuals in the form of government spending.

There is also the factor of migration of high-income individuals if tax rates reach an unsustainable level. These high income and high skill individuals have the ability to relocate due to the abilities granted by the financial advantage they have over even middle-income earners. This means that governments must be careful when selecting tax rates that they do not ultimately force out the tax revenue that they are hoping to collect completely. These nuances make selection of a tax rate all the way up the income brackets difficult. If high income earners relocate, the tax burden must fall on the middle class or government spending must be reduced. In order to weigh all these factors together, there must be give and take in the form of reduced corporate tax rates that will be discussed in that section of the analysis.

There seems to be a consensus around the current tax rates and their effectiveness at generating tax revenue while also ensuring there is a limited amount of flight from high income earners and that enough of an incentive exists to generate the benefits of the capitalist system. I would not propose a large shift upwards in tax rate on individuals because of the relatively high tax rates already in place and the exponentially increasing risk of flight or tax avoidance in the case of a tax rate hike. If there is a corresponding decrease in the corporate tax rate that would offset the increase in the progressive income

tax to a certain extent, an increase in the income tax rates in the higher brackets may not have the adverse responses that are plausible if the corporate rate remains the same.

Overall, I would say that unless there is a decrease in tax rates in another area of the tax code (corporate income tax being the most appealing), there should be no rate hikes or decreases apart from a narrowing of the tax brackets to make the rates of their corresponding brackets apply more accurately. Shifts upward in tax rates for individuals would threaten the loss of the economy driving influence and tax revenue that the United States and Canada so desperately need.

6.3 Corporate Income Tax

Of the three analysis sections, this is the most intriguing due to the complexity inherent in the incidence of the corporate income tax and the unique behavior of that trait in different economies. It cannot just be said that there is one tax rate or lack thereof that is a silver bullet against income inequality in every country's situation, more nuance is present than allows for that to be the case.

In the in-depth discussion portion of the thesis, we saw that credible sources differ on the incidence of tax and how it impacts not only income inequality, but also the economy as a whole, with capital allocation and labor rates also being directly impacted by changes in the corporate income tax. This was somewhat made clearer by some assumptions made by papers that concluded the lower income taxpayers are the primary burden bearers of this tax. They saw the economies in question as closed systems where capital could not be allocated to other tax jurisdictions without the theoretically hiked corporate income tax rate.

In both of the economies of the United States and Canada, allocation of capital from investors to foreign markets is simple and relatively seamless. This means that as the less fluid taxpayer in the economy, the employees, who are typically lower income than the capital holders, will be paying the corporate tax more often than not.

CHAPTER SEVEN

Literature Review

7.1 The Tax System's Link to Income Inequality

The link between the tax system and income inequality is clearly pertinent to the discussion presented in this thesis. As such, the articles present here establish that link and demonstrate the ways in which the two are bound by their very nature.

This article by James Poterba shows the basics of the intuitive link between the two phenomena of concern. “When the share of income paid as taxes differs at different points in the income distribution, the after-tax income distribution will differ from the pre-tax distribution” (Poterba 2007).

While this is not a stretch to understand, the causal relationship based upon the unequal confiscation of wealth across income levels is what creates the need for the analysis present in the thesis. Any time there is an unequal taking of income, there will be a resulting impact on income inequality, and due to the scale of the tax system this basic link is extremely important.

7.2 Tax Progressivity and Income Inequality

The relationship between income inequality and specifically the progressivity of the tax structure is another vital link to establish and is one that drives the purpose behind the arguments in this paper. The two aspects of this relationship pertinent to the discussion are that “Increased structural progressivity of the PIT structure reduces

observed income inequality (H1), and that this effect depends on the type of redistributive environment (H2)” (Duncan and Peter 2008)

The importance of the progressivity of the tax structure cannot be understated, but the paring of an equally effective redistribution method from the government is required for there to be an actual reduction in income inequality that is bettering for society. Any system which unequally takes wealth and then fails to properly redistribute it is reducing income inequality but only to the detriment to higher income earners and not to the benefit to the lower income earners that it should have.

The two together drive true reduction in income inequality throughout a society. The progressivity of the tax structure is vital to the reduction of observed income inequality regardless of other factors present in the economy, but the paring of this phenomenon with complimentary redistribution strategies and strategies to ensure that tax evasion is not pervasive is necessary to reduce actual income inequality. In countries where tax evasion is prevalent, higher levels of tax progressivity have the potential to even increase actual income inequality rather than reduce it.

7.3 The Incidence of Corporate Tax

(Auerbach 2006) presents a clear contention that increases in the corporate tax on new saving and investment will increase the before tax earnings of investors and shift the tax burden from the capital holders to the labor sources rather than increasing the burden on investors overall. A wrinkle in this conclusion is that the different types of taxes have different levels of incidence due to the intricacies of the tax system and economy that the tax will be functioning within.

The conclusions reached in Auerbach agree with those seen in another analysis which sees roughly 50% of the tax burden present because of a corporate tax increase shifted onto the wage earners depending on the openness of the economy, the options for capital holders outside of the local economy, and the negotiating ability of the labor force (Arulampalam, Devereux, and Maffini 2012). The inherent complexity of the corporate tax lies in the complexity of the system the tax will be applied to. So many variables have to be considered both in the short term and in the long term to decide who will ultimately be paying the increased tax. There is strong evidence, though, to support the hypothesis that laborers in the economy are subject to an increased tax just as strongly as the capital holders.

There is disagreement on this point from classical and modern research due to the assumptions of the openness of the economies that we are living and the legitimate mathematical and economic differences of opinion that plague this discussion. Sources show strong evidence that the burden of tax falls on primarily laborers like is seen in the discussion above, but there is also evidence to support the opposite, where the burden of tax falls primarily on the local capital holders (Gravelle 2013).

This argument stems from two important disagreements, that the United States and many other large world economies are open, and that even in scenarios where the economies are more closed, the local capital holders still bear a majority of the tax burden from the increased corporate tax. In the case of Gravelle's arguments, she states that in the case that the United States economy is open, the local capital holders bear 60% of the

tax burden, and in the case that the economy is more closed than many sources assume, the local capital holders may bear as much as 90% of the tax burden.

Overall, this topic and the conclusions derived from the research conducted for this thesis are all contingent upon the assumptions of each individual research paper. If the assumption is made that the market is open, the conclusion is very different from the conclusion on the incidence of tax if the markets are open. With such a contentious topic, it is difficult to find a correct answer to who will pay an increase to the corporate tax rate. It is difficult, though, to state with any certainty that increases to the corporate tax rate would help or hurt income inequality, especially when factoring in the imperfect redistribution of tax revenue that the government possesses.

7.4 Tax Impact on Marriage

The tax system, while primarily an economic and fiscal tool, also has an impact on social behavior of those people its taxes are levied on. One of the main ways the tax policy impacts people socially is in the marriage rate and the timing of marriage choices for couples being taxed. Research has clearly shown that, in many instances, there is a small but material impact on the timing of marriages as well as the choice of whether to marry for couples (Walker 1995). The marriage tax or marriage subsidy seems like it would be immaterial in the face of such a seismic decision, but, the small but meaningful fact of financial wellbeing and outcomes are more important to people than it would seem.

7.5 Tax Impact on Female Labor Force Participation

In addition to the impact on marriage rates and the decision for couples to marry, there is a tax impact on the labor force participation rate for married females and to a lesser extent, single females. This comes down to the fact of lesser incentives under high tax legislation for additional income. In cases where one of the partners is already working, there is a diminishing return to the other partner also entering the workforce.

We have seen in the United States that there is a decreasing elasticity to this impact on labor force participation as there have been cultural, social, and fiscal changes in the country. Women have been less subject to the incentives that the tax structure can add and take away because of the increased general labor force participation rate. (Kumar and Liang 2016). This effect is mitigated in Canada, where the tax structure, by taxing couples on an individual-by-individual basis, removes the benefit to single income households that the United States still possesses. That being said, there is not a general incentive to marriage like there can be in the United States. There is a more exploratory analysis of these facts and circumstances where an incentive or disincentive exists in the Income Tax portion of this thesis.

7.6 Income Distribution over Time

The Gini Coefficient is a z score measure of the average income distribution size in a population. For the purposes of this analysis, the score is pertinent to the ability for countries to determine the income inequality present in their borders. Because this coefficient has existed for many years and the data reaches back far into the past, it is possible to determine the change in this measure over multiple decades. For the United

States, from the 1988 to the 1999, there was a small but persistent increase in wealth income inequality on a household basis (White 2002).

On a broader scale, there has been multiple analyses performed on wealth and income inequality levels in the United States over the years. There has been additional emphasis placed on recession and recovery periods as far as how that impacts the two pertinent measures. The conclusions reached tend to present those times of recession lead to significant drops in wealth with comparable increases in income inequality. The obvious point to be taken from this is that it is not wealth generation that increases income inequality to the extents that we believe it does, but the times where workers are harmed more than those with stickier and larger sums of wealth. Healthier economies lead to stable levels of income inequality and a general increase in wealth, which is positive for both the lower classes and the upper classes. The years of 2007 to 2010 resulted in a decrease in median wealth of 44% while there was an increase in income inequality of 5% (Wolff 2016).

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