Understanding Declining Voter Turnout in Canada and Other Late-modern Capitalist Democracies: A Contemporary Analysis of T.H. Marshall's Social Citizenship

by

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B.A., University of Alberta, 2001
M.A., Queen's University, 2003

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ABSTRACT

In this research, I undertake an analysis of the relationship between aggregate voter turnout and income inequality within late-modern capitalist democracies to better understand the problem of declining voter turnout in these societies. I analyse this relationship at the sub-national level using provincial-level Canadian data and at the national level through a sample of twenty-one nations. At both levels, cross-sectional time-series regression analyses of pooled data are applied. Findings are interpreted through a citizenship lens; specifically the work of T.H. Marshall (1950) and Esping-Andersen (1990), as both social and political inclusion are fundamental and constitutive elements of citizenship. Initial findings include a statistically significant negative relationship between income inequality and voter turnout, for both provincial and federal general elections in Canada (1976-2011); this relationship is also found at the national level in a sample of older democracies (1980-2013). The relationship holds using various measures of income inequality including the Gini coefficient and a range of income ratios. However, once time is controlled for in the model this relationship seems to disappear. This suggests a lack of support for the theory that income inequality has a direct impact on participation in the exercise of political power. Rather, a more fundamental factor or factors seem to be causing these societal shifts. I discuss alternate ways of understanding this relationship, including how declining voter turnout and income inequality might be related to the broader socio-political and economic changes associated with economic globalisation and the global spread of neo-liberal fiscal policies. I conclude that to better understand the relationship between voter turnout and income inequality further research is required.

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Dedication

For David

I. Introduction

A. Research Question

It is a widely held belief that the act of voting in a democratic society is a fundamental expression and obligation of citizenship. Yet, most recent Canadian federal and provincial general elections have resulted in low, and in many cases record low, voter turnouts. This is reflected in news articles with titles such as: Record low voter turnout in B.C. election (CBC, 2009); Voter turnout in Alberta reaches 'abysmal' low (Globe and Mail, 2008); Poor turnout for provincial election (Winnipeg Sun, 2011); P.E.I. voter turnout lowest in decades (CBC, 2011); Voter turnout in N.S. drops to record low (Globe and Mail, 2009); N.B. voter turnout lowest since 1978 (CBC, 2010); Almost half of Quebec voters shunned polls (CBC, 2008); and Ontario voter turnout lowest since 1867 (Global News, 2011). At the same time, this news coverage of low and declining voter turnouts across the provinces tends to avoid placing this phenomenon within a comparative or historical context; instead it often is presented as a seemingly unexpected occurrence unrelated to the turnout at previous elections or the experiences of other jurisdictions. In addition, there is relatively little engagement with addressing root causes of declining voter participation. Instead, government initiatives purporting to address this issue seem focused on the individual level (e.g., attempts to increase the ease of voting by extending advance voting opportunities, polling station hours, and ballot submission options). As recent election results reveal, these strategies have met with little success. Low and declining voter turnout has continued. This suggests other significant influences may be lurking.

This dissertation addresses the problem of declining voter turnout in late-modern capitalist democracies within a sociological framework. As such, one of the key premises of this work is that resolutions anchored in *individual* causal explanations are insufficient for *social* problems that extend beyond the individual. As evidence that declining voter turnout does indeed extend beyond a merely individual problem consider that this turnout is declining, provincially, nationally, *and* internationally. C. Wright Mills has famously described the ability to identify social problems as distinct from individual problems as the *sociological imagination*.

> The sociological imagination enables its possessor to understand the larger historical scene in terms of its meaning for the inner life and external career of a variety of individuals. […] When, in a city of 100,000, only one man is unemployed, that is his personal trouble, and for its relief we properly look to the character of the man, his skills, and his immediate opportunities. But when in a nation of 50 million employees, 15 million men are unemployed, that is an issue, and we may not hope to find its solution within the range of opportunities open to any one individual. The very structure of opportunities has collapsed. Both the correct statement of the problem and the range of possible solutions require us to consider the economic and political institutions of the society, and not merely the personal situation and character of a scatter of individuals. (Mills, 1959, p.5 & 9)

Similarly, when one person out of 100,000 chooses not to vote, we may look to *individual* explanations, but when in a nation of approximately 27 million eligible voters, about 12 million do not vote – as was the case in Canada's most recent federal general election – that is a *social* issue, and its solution will not merely be located within the

voting opportunities open to any one individual. Instead, a sociological perspective suggests analysing changes within the structural context that supports citizen participation in elections. I situate my thesis within a tradition that understands citizenship as bolstering political equality within structural systems that create economic inequality.

My research question is: *How is T.H. Marshall's understanding of citizenship and social class relevant to declining voter turnout in late-modern capitalist democracies?* T.H. Marshall provided the modern foundation for much of the citizenship literature present, today. In his seminal essay, *Citizenship and Social Class* (1950), he succinctly describes the civil, political, and social aspects of citizenship.

> The *civil* element is composed of the rights necessary for individual freedom – liberty of the person, freedom of speech, thought and faith, the right to own property and to conclude valid contracts, and the right to justice. The last is of a different order from the others, because it is the right to defend and assert all one's rights on terms of equality with others and by due process of law. This shows us that the institutions most directly associated with civil rights are the courts of justice. By the *political* element I mean the right to participate in the exercise of political power, as a member of a body invested with political authority or as an elector of the members of such a body. The corresponding institutions are parliament and councils of local government. By the *social* element I mean the whole range from the right to a modicum of economic welfare and security to the right to share to the full in the social heritage and to live the life of a civilised being according to the standards prevailing in the society. The

> institutions most closely connected with it are the educational system and the social services. (Marshall, 1950, p.8, emphasis added)

In this essay, Marshall seeks to answer the question: "Is it still true that basic equality, when enriched in substance and embodied in the formal rights of citizenship, is consistent with the inequalities of social class?" (1950, p.7). Ultimately Marshall argues that the equality of citizenship and the inequality of social class are not incompatible, nor should they be, but that *reduction of social inequality enriches the equality of citizenship*.

Because the social dimension of citizenship is fundamental to both its civil and political elements, high levels of income inequality may counteract civil and political engagement. Yet, there has been relatively little scholarly interest in assessing the relationship between electoral participation (as a mode of citizen participation) and income inequality – a lack further exacerbated by societal shifts impacting citizenship in late-modern capitalist democracies since the mid-twentieth century when this theory was initially presented. This research is urgently required to assist in correctly framing the poorly understood problem of declining voter turnout in these societies and the range of possible solutions.

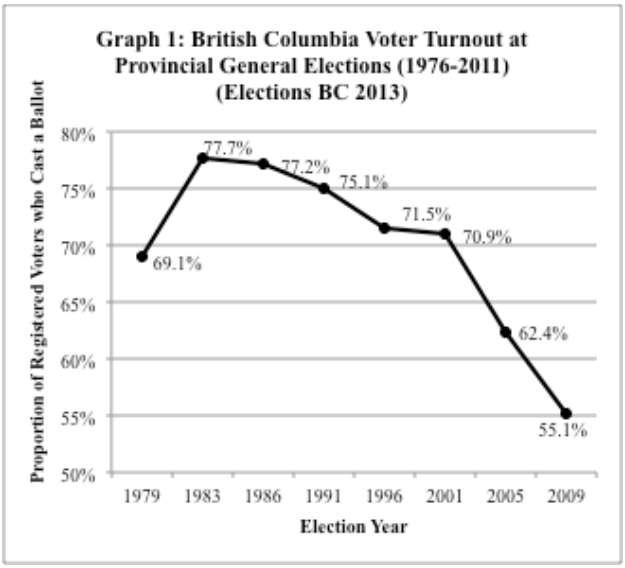
B. Research Context

> The Centre will be asked to initially focus on three pressing social imperatives. […] The third focus of the Pacific Centre for Social Innovation will be the issue of how to improve voter participation in elections. *Voting is the most fundamental act of citizenship* and it is on the wane. We must search for the mechanisms of revitalization. The health of our public life depends on it. (Government of British Columbia, September 12, 2005, emphasis added)

We're obviously disappointed when voter turnout is low, and it's been low and getting lower for some time now. It's *fundamental to all the rights and freedoms we enjoy* and it disappoints me when there is a low voter turnout but we will continue to try and study that phenomena and see what we can do.

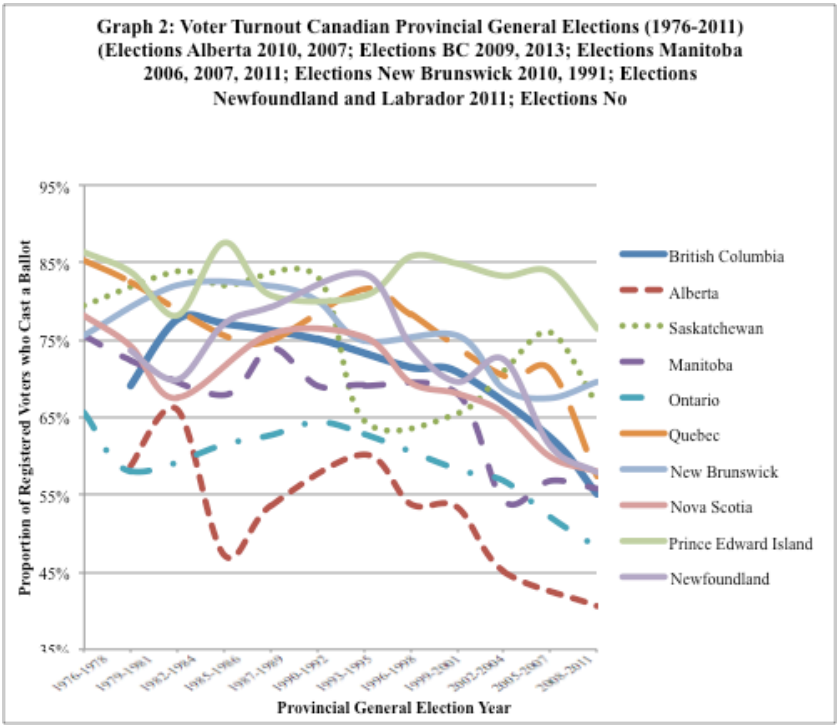
(The Right Honourable Stephen Harper, Prime Minister of Canada, as cited in the *Calgary Herald* on October 15, 2008, emphasis added)

In 2009, during the first provincial general election in British Columbia following the above-cited Throne Speech, the voter turnout dropped to a record low 55.1 per cent of registered voters – the culmination of a steady decline totalling nearly 30 per cent over 26 years; in 2013, this turnout rose slightly to 57.1 per cent (Elections BC, 2013; **Graph 1**).



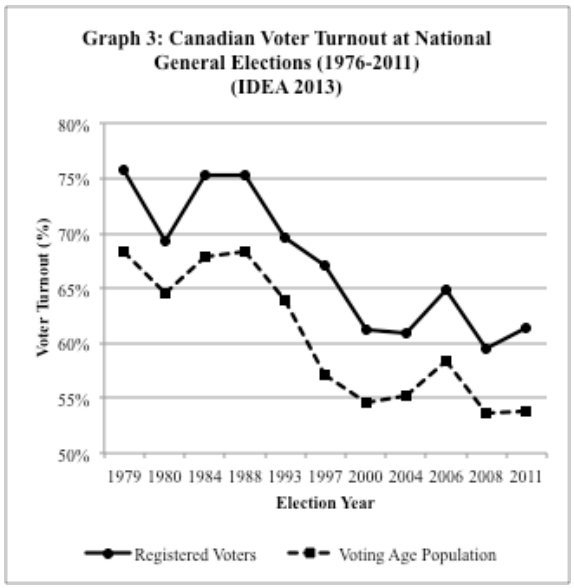
British Columbia is not alone in this experience. *Most* provinces have reported record low voter turnouts at provincial general elections in recent years (**Graph 2**). The lowest among these was reported in 2008, when just 40.6 per cent of registered Alberta voters submitted a ballot during the general provincial election that year – a continuation of the steady decline of over 30 per cent over the previous 15 years. This turnout rose to

54.4 per cent in the 2012 provincial general election; a marked improvement over the previous election, but not necessarily a reversal in the trend and still just half of registered voters heading to the ballot boxes is distressing.



A similar trend of declining voter turnout is found at the national level. Between 1979 and 2011, the voter turnout for Canadian federal general elections declined 46 per cent hitting a record low 58.8 per cent of registered voters in the 2008 election (International Institute for Democracy and Electoral Assistance (IDEA), 2013; **Graph 3**).

The proportion of the voting age population that voted in 2008, as opposed to registered voters, was even lower at just 53.6 per cent for this federal general election (IDEA, 2013). The turnout appeared to increase by over a full percentage point during the most recent (2011) federal general election; however, the increase amongst the voting age population was just two-tenths of a percentage point. I share more on the differences between these voter turnout measures, later on.



This is not an isolated trend. In fact, most late-modern capitalist democracies are experiencing declining voter turnouts, but not equally so. By late-modern capitalist democracies I refer to those nations that have had relatively uninterrupted universal suffrage for free and fair elections, since the mid-twentieth century. Anglo-Saxon countries generally have lower voter turnouts in national general elections and have experienced larger declines in these turnouts over the last few decades. Australia is an exception, its enforced compulsory voting laws resulting in higher turnout though still not as high as some countries requiring only voluntary voting (IDEA, 2013, 2012); despite the threat of sanctions, such as fines, many in countries with mandatory voting laws still opt not to vote. The United States of America represents another outlier, having had relatively low voter turnout throughout this time. In contrast, Scandinavian countries tend to have higher voter turnouts in national general elections and smaller voter turnout declines. Voter turnout actually increased in the 1960s and 1970s in Sweden, Denmark, and Finland, but then began declining in the mid-1980s. In-between these two clusters are the continental European countries, which are generally characterized by voter

turnouts, and declines thereof, in the range between the Anglo-Saxon and Scandinavian countries, with the greatest declines since the mid-1980s. Belgium, Greece, and Italy – with compulsory voting laws for national general elections – are outliers in this group (IDEA, 2013, 2012).

This voter turnout information establishes the provincial, national, and international trend of declining voter turnout in Canada and other late-modern capitalist democracies. Many factors are known to affect aggregate voter turnout. For example, there is evidence to support that countries with proportional representation have higher voter turnout than those with first-past-the-post electoral systems and that competitive elections seem to improve voter turnout, as does having an election on a day of rest. Despite these factors, and the occasional improved voter turnout, the overall trend is toward declining voter turnout in late-modern capitalist democracies. In the pages to follow, I share my study of the potential impact of income inequality on voter turnout in these societies, seeking to determine if it too might be added to this list of known factors impacting voter turnout and therein illuminate newer avenues to assist in combating this social issue.

C. Study Significance

Declining voter turnout in late-modern capitalist democracies over the last few decades has coincided with rising levels of income inequality within these same societies.

> The gap between rich and poor in OECD [Organisation for Economic Co-operation and Development] countries has reached its highest level for over 30 years, […]. The income gap has risen even in traditionally egalitarian countries, such as Germany, Denmark and Sweden, from 5 to 1 in the 1980s to 6 to 1 today.

> The gap is 10 to 1 in Italy, Japan, Korea, and the United Kingdom, and higher still, at 14 to 1 in Israel, Turkey, and the United States.
>
> (OECD, 2011; see also: Conference Board of Canada, 2011a, 2011b and United Nations Development Program, 2011)

Even though income equality and voter turnout – two indicators of citizenship – are simultaneously declining in late-modern capitalist democracies, the relationship between these two phenomena is rarely studied. An American Political Science Association task force on inequality and American democracy recently concluded "we know little about the connection between changing economic inequality and changes in political behaviour […] there is *urgent need for research* that analyzes these interconnections" (2004, p.655 & 661, emphasis added). Other researchers echo this.

> In light of its importance, there has been surprisingly little cross-national empirical work on the relationship between turnout and inequality […] very few empirical studies have focused directly on the relationship between electoral turnout and income inequality across a reasonably wide range of developed countries. (Mahler, 2002, p.129)

Solt (2008) adds, "[t]he consequences of this greater economic inequality for the politics of these countries, however, have gone almost *completely unexamined* in the empirical literature" (p.48, emphasis added). Brady concurs:.

> In studies of political participation, the impacts of income have been given far less attention than the impacts of education and occupation, and even less attention has been paid to how income inequality affects participatory inequality […] very

> little thought has gone into the ways in which income inequality might affect participatory inequality. (2004, p. 683)

In Geys' (2006) meta-analysis of 83 aggregate-level studies of voter turnout just seven included some measure of income inequality. Scruggs and Stockemer (2009) describe the literature regarding this relationship as *burgeoning* noting that "[d]espite the importance of this question in political economy, there are surprisingly few empirical studies of the relationship between economic inequality and participation" (p.2). Of the need to analyse aggregate level indicators Lister (2007) argues:

> If we wish to understand why people participate or do not participate, it seems that to examine the question solely at an individual level is myopic […] the most striking message is that turnout varies much more from country to country than it does between different types of individuals […] that institutionally based variations in inequality impact upon turnout […] has been *under-explored* in the existing literature on participation. (p.21 & 32, emphasis added)

Oliver (2001), focused on the subnational level, argues the same: "while many scholars have investigated the *causes* of suburban economic differentiation, few have investigated the civic *consequences*. The implications of economic segregation and homogeneity for mass political behavior have largely been ignored" (p.73). Indeed, the inclusion of a sub-national analysis of the aggregate level relationship between inequality and voter turnout is even less common in the literature than that of the scant national level analysis (Galbraith & Hale, 2008; Mahler, 2002; Merrifield, 1993; Oliver, 2001; Rosenstone, 1982). Regardless of outcome, the findings of this research are urgently required and will make a significant research contribution.

D. Dissertation Outline

This dissertation is divided into three main components: a literature review, an empirical analysis, and a discussion of the findings. The literature review addresses foundational and contemporary ideas regarding the relationship between democracy and economic inequality through the social citizenship and welfare state scholarship of T.H. Marshall (1950) and Gøsta Esping-Andersen (1990), as well as a review of contrasting perspectives regarding the relationship between voter turnout and income inequality. I then present an empirical analysis of this relationship in late-modern capitalist democracies at the national and sub-national levels over the last few decades, using cross-sectional time-series regression analysis of panel data. This approach is preferred as it combines the analysis of time and space. First, I analyse this relationship regarding provincial-level voter turnout at Canadian federal general elections (1976-2011). I then repeat this analysis using provincial-level voter turnout at Canadian provincial general elections (1976-2011). Third, I undertake this analysis at the national level across a sample of twenty-one late-modern capitalist democracies (1980-2013). I use a consistent set of model variables across these three data sets, identified through an analysis of existing research on this topic. I also include time as a variable to improve these models and the strength of this research. Controlling for time allows one to identify the potential impact of variables not otherwise included in the model to reveal if an apparent relationship between model variables is merely spurious. Lastly, I discuss the findings of this research including potential theoretical interpretations and practical implications. I conclude with a brief discussion of the limitations of this research and suggestions for future research.

II. Literature Review

I begin this literature review with a discussion of T.H. Marshall's (1950) conceptualisation of citizenship and social class particularly as it relates to late-modern capitalist democracies. Marshall posited this theory at a point in time when the welfare state was just emerging. Given the changes that have taken place in these societies since then – changes to public programs and services, democratic participation, and the rights and responsibilities of governments and citizens – this analysis is timely. With an understanding of the welfare state as an instantiation of citizenship, I then analyse Gøsta Esping-Andersen's (1990) welfare state regime classification. His central argument is that 'contemporary advanced nations' cluster into three groups in terms of their social welfare polices, and by extension their ability to insulate citizens from the market. This speaks to the balance between 'real' and 'money' incomes described by Marshall. To the extent that such policies impact citizenship, so too might they impact political participation as a component of citizenship. Lastly, I analyse differing approaches to understanding the relationship between income inequality and voter turnout with an eye toward their sufficiency in explaining *changes* in voter turnout within and across late-modern capitalist democracies over time. Explanations include those focused on the role of individual characteristics, differing electoral institutions, relative-power differentials, and social institutions that shape social norms. This literature review forms the basis for the empirical analysis that follows regarding the relationship between aggregate income inequality and voter turnout in Canada and other late-modern capitalist democracies over the last few decades.

A. Marshall

a. Overview. The main argument established in Marshall's (1950) seminal analysis of citizenship and its impact on inequality is that the two are not incompatible, but that the *reduction of social inequality enriches citizenship*.

> A property right is not a right to possess property, but a right to acquire it, if you can, and to protect it, if you can get it. But, if you use these arguments to explain to a pauper that his property rights are the same as those of a millionaire, he will probably accuse you of quibbling. Similarly, the right to freedom of speech has little real substance if, from lack of education, you have nothing to say that is worth saying, and no means of making yourself heard if you say it. But these blatant inequalities are not due to defects in civil rights, but to lack of social rights, […]. (Marshall, 1950, p.21)

The social elements of citizenship are fundamental to its civil and political elements. My research question emerges from this reasoning – given the fundamental role of social equality in Marshall's understanding of citizenship, I wonder if increasing levels of income inequality in late-modern capitalist democracies might be an explanatory factor in the declining voter turnout in these countries. Marshall (1950) does not dispute that some inequality is "right and proper" but argues that there is a floor above which all members of a society should exist (p.6). At this level, one is able to develop independence, self-respect, and therein respect for others and the duties of citizenship. Marshall goes on to argue that "the claim of all to enjoy these conditions is a claim to be admitted to a share in the social heritage, which in turn means a claim to be accepted as full members of the society, that is, as citizens" (1950, p.6). Again, this equality of membership, Marshall

argues, need not be inconsistent with a degree of economic inequality, so long as this does not interfere with one's inclusion in society as an equal citizen: "the inequality of the social class system may be acceptable provided the equality of citizenship is recognized" (1950, p.6). Therein, to a degree, citizenship should moderate the market. Marshall explains by differentiating between 'real' and 'money' incomes. The former includes social services and programs, such as education, health care, and social assistance whereas the latter generally refers to one's market or employment income.

> The unified civilization which makes social inequalities acceptable, and threatens to make them economically functionless, is achieved by a progressive divorce between real and money incomes. This is, of course, explicit in the major social services, such as health and education, which give benefits in kind without any *ad hoc* payment. In scholarships and legal aid, prices scaled to money incomes keep real income relatively constant, […]. The advantages obtained by having a larger money income do not disappear, but they are confined to a *limited area of consumption*. (Marshall, 1950, p.47, emphasis added)

Marshall concludes that the preservation of economic inequalities has been made more difficult by the enrichment of citizenship. Again, he does not argue for absolute equality. Rather that economic "inequalities can be tolerated within a fundamentally egalitarian society", for within a unified society such inequalities are neither too extreme nor an expression of hereditary, but an incentive to change and betterment (1950, p. 44). However, excessive economic inequality debases citizenship.

b. Critical appraisal: Marshall. Marshall's theory has invoked much debate in the citizenship literature. Indeed, several criticisms of his theory have emerged, including that: 1) it is an evolutionary periodization based on the white, bourgeois, British, male experience thereby lacking generalizability (Dahrendorf, 1996; Drover, 2000; Rees, 1995a, 1996); 2) its overemphasis on rights detracts from the related notion of obligation and therein fosters a passive understanding of citizenship (Drover, 2000); 3) it exclusively focuses on class inequality to the neglect of other forms of inequality (e.g., gender, ethnic, sexuality, and ability) (Drover, 2000; Lister, 2005; Rees, 1995b; Hancock, 2000); and that 4) his theory is based on institutional and social arrangements that have fundamentally changed in the present global era (Drover, 2000). The first of these criticisms, while valid, does not detract from the analytical value of Marshall's tripartite construction of citizenship, as I demonstrate ahead. The second is misdirected, as the changing balance between rights and duties is characteristic of the development of citizenship in many late-modern capitalist democracies, particularly given the shift toward neo-liberalism embodied in globalisation. Marshall identified this movement toward passive citizenship as problematic, over sixty years ago. He sought to draw attention to it by posing, as one of the central questions in his seminal essay: "What is the effect of the marked shift of emphasis from duties to rights? Is this an inevitable feature of modern citizenship-inevitable and irreversible?" (Marshall, 1950, p.7). He concluded that because many duties are compulsory (e.g., taxes, education, and insurance contributions), citizenship tends to lose its vigour. Another citizenship duty, according to Marshall, is "the general obligation to live the life of a good citizen, giving such service as one can to promote the welfare of the community" (1950, p.45). Here Marshall

laments that the size of communities has grown so large that this obligation comes to appear remote and unreal. He posits that a solution may be focusing on more limited loyalties (e.g., one's local community and working groups): "devolving its obligations down to the basic units of production, might supply some of the vigour that citizenship in general appears to lack" (Marshall, 1950, p.47). Indeed, Marshall shares concerns regarding passive citizenship, but seems hopeful that this shift is neither an inevitable nor irreversible feature of modern citizenship.

The third criticism is that Marshall focuses on the impact of economic inequality on citizenship rather than that of other types of inequality or their intersections. This exclusion is characteristic of the inequality scholarship at that time. More recent theorists have improved on Marshall's understanding of citizenship by exploring the impact of these other forms of inequality on citizenship. Unlike economic inequality, these other forms of inequality should not be tolerated, for these differences do not incentivize change and betterment, but rather detract from the fundamentally egalitarian society within which Marshall argues income inequalities can be tolerated.

In terms of the fourth criticism, it is argued that Marshall's theory is based on out-dated institutional and social arrangements. That is, since its initial presentation – during the golden age of welfare state construction – globalization and the proliferation of neo-liberalism have ushered in trade and international agreements that restrain nation states and bring fiscal management, as well as a particular approach to this management, to the forefront of political discourse. In Canada, a plethora of social programs and services flourished during the mid-twentieth century, including Employment Insurance, Old Age Security, Guaranteed Income Supplement, Canada Pension Plan, Canadian Mortgage and

Housing Corporation, as well as universal health care, workers' compensation, family allowances, social assistance, regional aid, and a variety of job creation and training programs. This period is generally characterized by the expansion of the welfare state in capitalist democracies. Implicit in this expansion is the expansion of citizenship. However, since this time many social programs and services have been reduced or eliminated in these societies thereby expanding the field of consumption whilst simultaneously freeing up further funds to attract investment. Funding cuts to Canada's social programs and services have occurred over successive governments at various levels over the last few decades; these have been exacerbated by stagnant employment income. Citizenship's market insulating role has significantly diminished in the present era.

With the intensification of globalization the relevance of not only social citizenship, but citizenship in general has come into question given its ties to the modern state. As a result, there is a move toward recasting citizenship in more universal terms such as human rights (Beck & Willms, 2004; Benhabib, 2006, 2007; Bohman, 2007; Held, 1995, 2004). However, there are important distinctions between the two. Whereas human rights are based in an ethical conception of the individual and are considered universal, inherent, and passive, citizenship rights are based in a political understanding of the individual, and are particular to a political community, granted by that community, and are a dynamic set of entitlements (Tambakaki, 2009). Thus, an all-inclusive conception of citizenship presents a real danger for it lapses into human rights. The loss of a distinctive conceptualisation of citizenship risks undermining democratic politics, for "a global citizenship which draws on common humanity, unavoidably subsumes the

member/non member distinction characteristic of democratic practice" (Tambakaki, 2009, p.6). Indeed, "tension between universal norms and particular politics is constitutive of modern democracy" (Tambakaki, 2009, p.7; see also Laclau, 1995a, 1995b, 2002, 2005; Laclau & Mouffe, 1985; Mouffe, 1993, 2002). Mouffe concurs, contestation is the oxygen of democracy, "[t]oo much emphasis on consensus, together with aversion toward confrontations, leads to apathy and to disaffection with political participation…In other words, *while consensus is necessary, it must be accompanied by dissent*" (2002, p.58, emphasis added). Mouffe specifically cites the tendency of human rights discourses to incapacitate democratic discourse.

> Indeed, human rights currently serve as a substitute for the socio-political discourses which have been discredited. […] I believe that human rights represent a constitutive component of modern democracy and that they need to be valued and fought for. The problem arises when they become a substitute for a truly political discourse and when democracy is reduced to the defense of human rights at the expense of its other dimension, that of popular sovereignty. […] Democratic governance requires the existence of units, 'demoi', where popular sovereignty can be exercised and this entails boundaries […] To establish the conditions for an effective democratic self-governance, citizens need to belong to a demos where they can exercise their rights of citizenship, and that would not be available to a cosmopolitan citizen. (2002, p. 61-4)

In contemporary societies, despite the push toward globalization, there remains a need for both human rights and citizenship, though one should not develop at the expense of the other.

Far from rendering Marshall's theory out-of-date, I argue that these changes to institutional and social arrangements via the emergence of globalization and neoliberalism and the effects they have had on the civil, political, and social elements of citizenship heighten the significance of Marshall's argument that *citizenship should and must modify market relations in democratic capitalist societies*. These changes intensify the need to re-examine citizenship in late-modern capitalist democracies. Though citizenship in these societies is composed of political, civil, and social dimensions, the precise content and experience of each of these varies across polities. Variations in social citizenship are explored in the next section of this literature review, which presents an analysis of Esping-Andersen's welfare state regime classification.

B. Esping-Andersen

a. Overview. In part drawing on Titmuss' (1958) classic tripartite of occupational, fiscal, and state provision, Esping-Andersen (1990) argues that late-modern capitalist democracies cluster into three relatively distinct categorizations in their approach to social citizenship: conservative, liberal, and social. The main criterion Esping-Andersen uses to determine this clustering is 'de-commodification': "the degree to which individuals, or families, can uphold a socially acceptable standard of living independently of market participation" (Esping-Andersen, 1990, p. 37). For Esping-Andersen contemporary debates regarding social policy are fundamentally a question of the degree of market immunity that should be permissible.

According to Esping-Andersen, conservative democracies, rooted in feudal, corporativist, and etatist traditions, rely first on the family to provide social welfare. Once this avenue is exhausted, the state takes on this role often on the basis of work

performance. Although these provisions are based in a system of social insurance dependent on labour-market attachment in general, and occupational hierarchies in particular, benefits are typically less restrictive and more generous than in liberal democracies. In general, the market is abhorred regarding the provision of social rights given its atomizing effect and potential to disrupt the social order: "A hallmark of conservative ideology is its view that the commodification of individuals is morally degrading, socially corrupting, atomizing, and anomic. Individuals are not meant to compete or struggle, but to subordinate self-interest to recognized authority and prevailing institutions" (Esping-Andersen, 1990, p. 38). This characterization, particularly the requirement to subordinate self-interest to prevailing institutions, conjures a civic-republican understanding of citizenship (Bellamy, 2008; Dagger, 2002; Heater, 2004). Indeed, much like the focus on civic duties characteristic of the civic-republican approach to citizenship social rights in conservative democracies may be conditional upon loyalty. According to Esping-Andersen, conservative democracies tend to preserve status hierarchies in their provision of social goods, focusing little on redistribution. Paternalism, patronage, and clientelism are characteristic of this approach to social citizenship, which seems to echo the feudal reliance on lords, guilds, and fraternal associations to extend these provisions to their members.

Esping-Andersen characterizes liberal democracies as rooted in the poor-law tradition, generally relying upon stigmatized means- or income-tested social assistance to ensure that only those unable to participate in the market receive income from the state. Further, this income is minimal, thus forcing most recipients to also rely on charity. Otherwise it is thought that moral corruption may result, i.e., choosing welfare over

participation in the market. In essence, the underlying principle in this approach is that one's social status is a function of individual choice. Thus redistribution is not a focus of liberal social policy, for such state interloping would disrupt the market logic.

> By withholding aid, or helping eliminate traditional systems of social protection, and by refusing to place nothing but the market in their place, the classical liberal state attempted to grant the cash nexus a hegemonic role in the organization of social and economic life; the bottom line of liberal dogma was that the state had no proper reason for altering the stratification outcomes produced in the marketplace. They were just, because they mirrored effort, motivation, adeptness, and self-reliance. (Esping-Andersen, 1990, p. 60)

Another tier of social rights are run as insurance schemes conditional upon contributions. Though perhaps universal, these too tend to provide sub-par coverage requiring that one turn to the market to achieve sufficient welfare. Thus the tendency toward bifurcation of social rights (and citizens) in these societies: the poor depending directly on the state with the better off deriving their welfare from the market. The underlying principles of liberal democracies reflect those of the liberal approach to citizenship, i.e., an individualist focus on the maximization of negative liberty through limiting state power and government intervention (Freeberg, 2002; Schuck, 2002).

Lastly, Esping-Andersen describes social democracies as committed to full employment and striving toward the principle of universality in the delivery of their social programs – a universality independent of demonstrated need or market participation relying instead on the criterion of citizenship. For, according to this perspective, social well-being enables effective citizen participation and economic

efficiency. In contrast to the 'bare necessities' universal programs of liberal democracies, social democracies tend toward a solidarity producing middle-class universalism.

> Universalism, therefore, became a guiding principle because it equalized the status, benefits, and responsibilities of citizenship, and because it helped build political coalitions… to preserve the solidarity of a universalistic welfare state, the socialists were compelled to align social benefits to middle-class standards…The formula was to combine universal entitlements with high earnings-graduated benefits, thus matching welfare state benefits and services to middle-class expectations. For the average worker, as social citizen, the result was an experience of upward mobility. For the welfare state, the result was the consolidation of a vast majority wedded to its defense. 'Middle-class' universalism has protected the welfare state against backlash sentiments. (Esping-Andersen, 1990, p.69)

A defining element of social democracies is their focus on inclusive government programs and services. In contrast, citizens of more conservative or liberal democracies tend toward a less universal approach opting instead for more fragmented benefits. For Esping-Andersen historical inheritance is a central explanatory factor in the emergence of these three ideal-typical capitalist democratic regimes.

Central to Esping-Andersen's (1990) thesis is the role of decommodifying social policies, which vary across time and nations. In selecting criteria to compare decommodification of labour over time and space, Esping-Andersen is critical of comparative analyses of social program spending arguing that spending is an effect of regime types rather than a cause.

> Expenditures are epiphenomenal to the theoretical substance of welfare states. […] By scoring welfare states on spending, we assume that all spending counts equally. But some welfare states, the Austrian one, for example, spend a large share on benefits to privileged civil servants. This is normally not what we would consider a commitment to social citizenship and solidarity. Others spend disproportionately on means-tested social assistance. Few contemporary analysts would agree that a reformed poor-relief tradition qualifies as a welfare state commitment. Some nations spend enormous sums on fiscal welfare in the form of tax privileges to private insurance plans that mainly benefit the middle classes. But these tax expenditures do not show up on expenditure accounts. In Britain, total social expenditure has grown during the Thatcher period, yet this is almost exclusively a function of very high unemployment. Low expenditure on some programs may signify a welfare state more seriously committed to full employment. (Esping-Andersen, 1990, p.19-20)

One need only turn to the many comparisons of national health expenditures and outcomes to find support for the argument that not all government spending on social programs and services is equal (**Appendix A**). Ultimately, Esping-Andersen (1990) settles on a range of measures to comparatively analyse eighteen late-modern capitalist democracies in terms of their social citizenship. For example, in the first of many analyses, he scores old-age pensions, sickness, and employment benefits in each of these nations in terms of replacement rate, required contributions, individual financing, and population coverage, as well as waiting period and benefit duration for the latter two. He then rank-orders the nations by their combined scores to find a clustering effect emerge.

He then compares the same nations on the degree to which they demonstrate the principles central to each type of democracy, i.e., for conservative democracies corporatism (number of occupationally distinct public pension schemes) and etatism (percentage of GDP spent on government employee pensions); for liberal democracies, means-tested poor relief (as percentage of total public social expenditure), private pensions (as percentage of total pensions), and private health spending (as percentage of total); and for social democracies, average universalism (for pensions, sickness, and unemployment benefits) and average benefit equality (benefit differentials for pensions, sickness, and unemployment). Again a clustering effect is found wherein Austria, Belgium, France, Germany, and Italy score highest on attributes of conservative regimes; the United States, Canada, Switzerland, Australia, and Japan score highest on liberal regime attributes; and Sweden, Norway, Denmark, Finland, and the Netherlands score highest on the attributes of social democracies (Esping-Andersen, 1990, p. 75). Throughout the rest of his book, Esping-Andersen continues to analyse, in a variety of ways, the characteristics of social citizenship in these eighteen late-modern capitalist democracies finding much evidence of clustering into these three regime types.

b. Critical appraisal: Esping-Andersen. Over the last twenty years, a number of criticisms have been levelled against Esping-Andersen's (1990) typology. The most frequent and pressing seem to be: 1) the lack of attention to the role of women in providing social welfare and of gender as a form of stratification; 2) the limited range of countries and regimes in his analyses; and 3) the empirical and methodological validity of these analyses. These are not unrelated.

The gendering of citizenship is well established in the literature (see for example Hobson, 2000; Pateman, 1988; and Lister, 1997), as is the gendering of the welfare state (Daly & Rake, 2003; Lewis, 1992, 1997, 1998; O'Connor, 1993; Orloff, 1993; Pateman, 1989; Sainsbury, 1994, 1999a). Of course there are sites other than gender from which exclusion may be contested (e.g., ethnicity, sexuality, or ability); however, given the primary role of women in the provision of welfare within the family (e.g., through unpaid carework) Esping-Andersen's lack of analysis of the role of gender in state provision of social welfare is particularly noteworthy. Indeed, the concept of 'decommodification' has a gendered meaning that is unacknowledged – "[t]he unpaid care work women perform in the household does not qualify for commodification and therefore also not for de-commodification" (Abrahamson & Wehner, 2006, p. 154). Whereas the decommodifying potential of publicly provided social goods is well documented in Esping-Andersen's work, the same cannot be said for the decommodifying effect of unpaid carework: "[b]enefits that decommodify labour give male workers greater capacity to resist capital and enter the market on their own terms, but unpaid services provided by wives, mothers, daughters also enhance male workers' capacities" (Orloff, 1993, p.317). Until recently, women in these societies were generally not commodified, but instead subordinate to their husbands or fathers. As such, a more meaningful conceptualization of social citizenship for women would be one that captures the degree to which individuals, or families, can uphold a socially acceptable standard of living independently of market *and familial* relations.

Esping-Andersen acknowledges the role of the welfare state in structuring social relations – "[t]he welfare state is not just a mechanism that intervenes in, and possibly corrects, the structure of inequality; it is, in its own right, a system of stratification. It is an active force in the ordering of social relations" (1990, p.23). Though scant, his attention to the ways in which states regulate gender relations is present in his attempt to integrate an analysis of differential treatment of women in late-modern capitalist democracies into his study. For example, early on he notes that state activities are interlocked with the market and family in providing social goods (Esping-Andersen, 1990, p.21). Regarding gender equality, he describes conservative democracies as tending toward the reinforcement of traditional family values, i.e., women's economic dependence on men; liberal democracies as more concerned with sanctity of the market than gender relations, *per se* (though the abstract universal notion of worker-citizen seems implicitly male); and social democracies as encouraging the economic autonomy of women through public provision of care work (e.g., day care, parental leave, and elder care). He goes on to briefly compare women's occupational segregation across the three regimes (chapter eight). Nonetheless, Esping-Andersen has been criticized for inadequate inclusion of women in his conceptualization of decommodification.

The concept of 'defamilisation' has been proposed as a counterpoint to decommodification (Bambra, 2004a, 2007a; Esping-Andersen, 1999; Guo & Gilbert, 2007; Korpi, 2000; Lister, 1997; Lewis, 1997). Defamilisation is generally understood as "the degree to which individual adults can uphold a socially acceptable standard of living, independently of family relationships, either through paid work or through social security provisions" (Lister, 1997 p.173). Importantly, this concept refers not to freedom of the

family (from the market), but rather freedom of the individual from the family (Bambra, 2004a). A number of suggestions have been made as to potential defamilisation criteria to include in regime clustering analysis, criteria that acknowledge the role of women in the provision of welfare whilst mindful of the multiplicity of subject positions. Proposed criteria include access to: 1) paid work as measured by female participation in paid labour (full and part-time, particularly with the presence of (young) children) (Abrahamson & Wehner, 2006; Bambra, 2004a, 2007a; Bianchi, Casper, & Peltola, 1999; Esping-Andersen, 1990; Gornick, 1999; Korpi, 2000; Lewis, 1992; O'Connor, 1993; Orloff, 1993; Sainsbury, 1999b); 2) parental leave (duration and compensation)(Abrahamson & Wehner, 2006; Bambra, 2004a, 2007a; Korpi, 2000; Meyers, Gornick, & Ross, 1999; Lewis, 1992; Orloff, 1993); 3) child care (Abrahamson & Wehner, 2006; Esping-Andersen, 1999; Korpi, 2000; Meyers et al., 1999; Lewis, 1992, 1997; Orloff, 1993); 4) reproductive control (Brush, 2002; Lewis, 1997); and 5) freedom from violence (Brush, 2002; Lewis, 1997); as well as outcome measures such as gendered: 6) occupational segregation (Esping-Andersen, 1990; Lewis, 1992; Orloff, 1993); 7) pay differentials (Bambra, 2004a; Gornick, 1999; Sainsbury, 1999b); 8) poverty rates (Kilkey & Bradshaw, 1999; Korpi, 2000); and 9) parliamentary representation (Borchorst, 1994; Korpi, 2000; Lewis, 1992, 1997). The role of the tax system in influencing female labour force participation is also frequently cited (Bianchi et al., 1999; Casper, & Peltola, 1999; Esping-Andersen, 1999; Kilkey & Bradshaw, 1999; Lewis, 1992; Sainsbury, 1999b). Analysis of these criteria has resulted in some proposed alternative classifications, but overall nations seem to cluster into Esping-Andersen's groupings across these measures, as well (**Appendix B**).

Alternative regime classifications have also been posited in response to perceived regional omissions, misclassifications, and methodological concerns regarding Esping-Andersen's (1990) original scheme. In terms of the criticism of not including a broader range of countries, a Southern European cluster composed of Italy, Greece, Portugal, and Spain has been proposed (see for example Allen, 2006; Bonoli, 1997; Ferrera, 1996; Leibfreid, 1992; Saint-Arnaud & Bernard, 2003; Trifiletti, 1999). As has a Southeast Asian cluster or clusters composed of Hong Kong, Indonesia, Japan, Malaysia, Philippines, Singapore, South Korea, Taiwan, and Thailand (see for example Aspalter, 2006; Croissant, 2004; Goodman & Peng, 1996; Goodman, 2008; Holliday, 2000; Jones, 1993; Ku & Finer, 2007; Kwon, 1997; Lee & Ku, 2007). Attempts have also been made to integrate Central and Eastern European nations into comparative analyses of social citizenship (see for example Deacon, 1993; Draxler & Van Vliet, 2010; Fenger, 2007; McMenamin, 2004; Soede, Vrooman, Ferraresi, & Segre, 2004). Regarding misclassification, it has been argued that some nations belonging to the 'liberal' regime type would better be classified as a separate (e.g., 'Radical' or 'Antipodean') regime (see for example Castles & Mitchell, 1992, 1993; Castles, 1996; Korpi & Palme, 1998; Obinger & Wagschal, 1998). Methodological concerns include the use of additive indices, averaging, weighting by population coverage, and classification using one standard deviation above or below the mean thereby limiting the possible number of categories to three, as well as the validity of the regime concept and its measures (see for example Arts & Gellissen, 2002; Bambra, 2006, 2007b; Castles & Mitchell, 1993; Clasen & Siegel, 2007; Gal, 2004; Hicks & Kenworthy, 2003; Kasza, 2002; Room, 2000; Van Voorhis, 2002).

Esping-Andersen seems ambivalent regarding changes to his original (1990) typology of welfare state regimes. He has responded favourably to suggested inclusions of a fourth 'Mediterranean' or 'Southern European' regime type (Esping-Andersen, 1996), as well as a fourth 'Radical' or 'Antipodean' regime type (Arts & Gelissen, 2002) though later advocated for his original tripartite classification: "I find it hard to imagine four or more distinct models because principally there are only three institutions relevant to and capable of welfare production" (Esping-Andersen, 2000, p.762; see also Esping-Andersen, 1999). He has also indicated little support for a 'Pacific' or 'East Asian' regime type, opting instead to declare Japan's classification as yet unknowable despite his earlier attempts to align it within his typology: "[o]n balance, there is little to indicate a distinct 'Pacific' model. Regardless, any attempt at labelling the Japanese welfare state is premature since it has not yet sunk its roots, institutionally speaking" (Esping-Andersen, 1997, p.179). Arguably the feminist critique of his model has had little impact on him, as well. This is evidenced by his conception of 'defamilisation' as independence of the family from the market, as opposed to independence of the individual from the family (Esping-Andersen, 1999; Bambra, 2004a, 2007a). And further, by his general lack of regard for feminist critiques in the development of his work: "[t]he feminist critique really didn't figure very much, […] I've never found the concept of patriarchy to be very useful for my purposes" (Esping-Andersen, 2000, p.759). He nevertheless acknowledges the significance of 'families' in the provision of welfare and of women in 'the new welfare equilibrium' (Esping-Andersen, 2003, 2007a, 2007b). Regarding the number of regimes in his typology Esping-Andersen also resists change, claiming

otherwise "[t]he desired explanatory parsimony would be sacrificed and we might as well return to individual comparisons" (1999, p.88). Esping-Andersen explains:

> In brief, it is inescapably true that Japan, like Australia and Southern Europe, manifests features that are not easily compatible with a simple trichotomy of welfare regimes. Yet, we must also ask ourselves what would be gained from adding a fourth, fifth, or sixth regime cluster? We would probably benefit from greater refinement, more nuance, and more precision. Still, if we also value analytical parsimony, neither Japan nor the Antipodes warrant additional regimes. The peculiarities of these cases are variations within a distinct overall logic, not the foundations of a wholly different logic *per se*. (1999, p. 92)

He goes on to dismiss the need for a distinct fourth Southern European regime, as well. Ultimately, Esping-Andersen argues against any significant changes to his welfare state regime classification. Subsequent attempts by other researchers to update this typology based on these criticisms have broadly supported this original typology, as well (**Appendix B**). Indeed, there is evidence to support the analytical utility of Esping-Andersen's regime typology.

Esping-Andersen's analysis of the degree to which one may uphold a socially acceptable standard of living independently of market participation echoes Marshall's distinction between 'real' and 'money' incomes and his argument that citizenship should moderate the market. Indeed, Esping-Andersen's regime classification of late-modern capitalist democracies is an analysis of the degree to which citizenship successfully achieves this insulating role in these societies. With the fundamental role of social and

economic inclusion as enriching citizenship in mind, I now turn to an analysis of understandings of the relationship between income inequality and voter turnout.

C. Voter Turnout and Income Inequality

a. Explanations that do not focus on aggregate income inequality. It is common in the literature to focus on individual characteristics in attempts to explain voting behaviour. These include demographic characteristics such as age, sex, education, marital status, employment, and income, as well as attitudinal and behavioural variables such as sense of agency, interest in politics, political socialization, and consumption of news. Such characteristics have been found to have a relationship with voting behaviour (Galbraith & Hale, 2008; Jaime-Castillo, 2009; Oliver, 2001; Rosenstone, 1982; Solt, 2008). Other individually oriented explanations focus on resources and rationality. From such perspectives, individuals engage in politics to the extent that they have the resources (e.g., time, money, knowledge and ability to use these efficiently) and are willing to pay the costs (Verba, Schlozman, & Brady, 1995). As one's income increases one is more likely to have the resources to effectively participate in politics, whereas the opposite is true as one's income decreases (Ansolabehere, Figueirerdo, & Snyder, 2003). According to this perspective, income inequality does not have a broad impact on the shape of political participation; as such behaviour is primarily an individual choice. One weighs the anticipated costs and benefits of voting and then makes a rational decision as to whether or not to vote. This may give rise to a 'free-rider problem'; that is, the incentive to vote may be inhibited by one's likelihood to experience the same outcome regardless of whether or not one votes. The likelihood that one's vote will impact the outcome of an election is typically minimal, particularly in national general elections. This begs the

question why *anyone* votes never mind why the proportion of people who do varies across time and space. Indeed, there are rational people in all welfare states, yet differences in voter turnout abound. Similarly with regard to both demographic composition and resources, such as education and economic levels, there is a broad similarity across welfare states – yet voter turnout varies considerably across these nations (Lister, 2007). Because voter turnout varies much more between countries than between individuals, these explanations are insufficient (Franklin, 1996; Lister, 2007). This is further evidenced by the difficulty these approaches have in explaining differences between countries – why one country has a higher voter turnout than another – as well as changes within each country overtime.

Rooted in rational theory arguments are institutionally focused explanations of voter turnout (Jackman, 1987; Merrifield, 1993; Powell, 1986). From this perspective, the electoral system and parliamentary structure of a particular jurisdiction inhibit or incentivise electoral participation. These explanations rely on electoral system characteristics such as the means by which ballots are translated into the election of representatives (e.g., first-past-the-post or proportional representation); voter registration rules (e.g., availability of automatic and/or election day registration, and the absence of literacy tests and poll taxes); as well as parliamentary structure (e.g., bicameral or unicameral and the process for selecting these representatives); and whether or not voting is compulsory. For example, a first-past-the-post voluntary voting system with difficult registration processes and a bicameral parliament with an unelected upper house may create less incentive to vote than a unicameral system based on proportional representation that enforces compulsory voting rules and makes use of automatic

registration processes. Indeed, these latter institutional characteristics have been found to positively impact voter turnout rates (Geys, 2006; Jackman, 1987; Jaime-Castillo, 2009; Mahler, 2002; Merrifield, 1993; Pintor & Gratschew, 2004; Solt, 2008). Yet, institutional characteristics are generally quite static over time. We have had the same first-past-the-post, bicameral system over the past fifty years in Canada; however, voter turnout has declined significantly over this time period. Thus, on its own, this approach also has difficulty explaining voter turnout changes over time within nations.

b. Income inequality increases political participation. An alterative perspective is that as citizens become more and more dissatisfied with the widening gap between their incomes and those of the highest earners more and more of them will become interested and engaged in politics to act on this frustration. Of course, there are other means by which political participation may take place (e.g., petitions, protests, and demonstrations), particularly in less democratic societies. The constitutive role of these forms of political participation in the franchise extensions through which modern democracies emerged is well established.

During most of the nineteenth century voting was restricted primarily to male land owners, though also at times to those meeting tax, income, and/or literacy thresholds (Engerman & Sokoloff, 2005; Przeworksi, 2008, 2009). By 1900 not one independent country had attained universal suffrage at the national level, though a handful enfranchised males (Przeworksi, 2008; Therborn, 1977). It was not until the mid-twentieth century that universal suffrage became the norm among wealthier nations (Przeworski, 2008, 2009). Franchise extension took place in these societies through a series of partial, gradual, and uneven reforms (Collier, 1999; Converse, 1969; Freeman &

Snidal, 1982; Jack & Lagunoff, 2006). For example, in Britain approximately two per cent of the adult population was enfranchised in 1830; by 1832, voting qualifications and representation in urban areas extended the franchise to three and a half per cent of the adult population; by 1867, voting qualifications were again extended (primarily to the urban working class) enfranchising nearly eight per cent of the adult population; this number rose to fifteen per cent, by 1884, as the franchise was extended in rural areas; property qualifications for men were abolished and limited female suffrage was introduced in 1918; and by 1928 women were granted electoral equality with men (Berlinski & Dewan, 2011; Himmelfarb, 1966; Jack & Lagunoff, 2006). These franchise extensions occurred through a series of reform Acts in response to the perceived threat of the lower classes. Earl Grey, Prime Minister of Britain (1830-1834), speaking in 1831 is often cited in this regard: "There is no-one more decided against annual parliaments, universal suffrage and the ballot, than am I […] The Principal of my reform is *to prevent the necessity of revolution* […] I am reforming to preserve, not to overthrow" (as cited in Acemoglu & Robinson, 2000; Aidt & Jensen, 2011; and Przeworksi, 2008; emphasis added). Indeed, extraordinary levels of social unrest precipitated the first of these franchise extensions.

> In fact, the years preceding the electoral reform were characterized by unprecedented political unrest, including the Luddite Riots from 1811- 1816, the Spa Fields Riots of 1816, the Peterloo Massacre in 1819, and the Swing Riots of 1830 (see Stevenson [1979] for an overview). The reforms that extended political power from a narrow elite to larger sections of the society were immediately viewed as a success not because of some ideal of enlightenment or democracy,

but because the *threat of revolution* and further unrest were avoided. (Acemoglu & Robinson, 2000, p. 1182-3; emphasis added)

Just prior to the *Second Reform Act* Reform League supporters violently clashed with police during the Hyde Park riots in 1866 and 1867 (Berlinski & Dewan 2011). Britain was not alone in experiencing mass social unrest at this time. A number of countries reformed their franchise laws during this revolutionary wave that swept Europe: Belgium (1848), France (1848), Germany (1849), the Netherlands (1848), Switzerland (1848), and Denmark (1849) (Aidt & Jensen, 2011; Llavador & Oxoby, 2005).

> In Denmark throughout the 1830s and 1840s, a fast growing bourgeoisie had demanded a share in government. It was, however, not until news of the bloody revolutions in France and Germany in 1848 […] that King Frederick VII gave in to the reform demands and accepted a constitutional monarchy and franchise extension. (Aidt & Jensen, 2011, p.14)

Waves of protest continued as excluded constituencies fought for inclusion. For example, Belgium was home to a series of mass strikes focused on suffrage in: 1886, 1888, 1891, 1893, 1902, and 1913 (Therborn, 1977, p. 12). Indeed, "stability required major feats of constitutional accommodation, as in the British *Third Reform Act* (1884), the Belgian Constitution (1893), universal manhood suffrage in Austria (1907) and Italy (1912), and the Scandinavian liberalizations in Norway (1898), Denmark (1901), Finland (1905), and Sweden (1907)" (Eley, 2002, p.66). In sum, a large body of literature establishes the constitutive role of collective action by the lower classes in franchise extension during modern democratization in what are today late-modern capitalist democracies (Acemoglu & Robinson, 2000, 2001, 2006; Aidt & Jensen, 2011; Bendix &

Rokkan, 1968; Boix, 2003; Conley & Temimi, 2001; Esping-Andersen, 1990; Ewald, 1991; Freeman & Snidal, 1982; Gandhi & Przeworksi, 2006; Hicks, 1999; Kim, 2007; Piven & Cloward, 1972; Przeworksi, 2008; Rueschemeyer, Stephens, & Stephens, 1992; Therborn, 1977; Ticchi & Vindigni, 2009).

The theory that as income inequality increases, so too will voter turnout, is rooted in these arguments. This recalls the T.H. Marshall discussion regarding the impact of globalization on citizenship where the argument that democracy requires conflict was cited "[t]oo much emphasis on consensus, together with aversion toward confrontations, leads to apathy and to disaffection with political participation" (Mouffe, 2002, p. 58; recall also Laclau & Mouffe, 1985, and Tambakaki, 2009). That is, greater consensus leads to fewer demands on government and so less engaging politics: " [i]f people no longer need to debate, organize, or compromise on local issues, then their capacity to act as citizens is reduced" (Oliver, 2001, p.98). From this perspective, higher income inequality leads to divergent political preferences, which translate into increased political debate and conflictive politics, as well as greater mobilization of the citizenry.

> The necessity of civic participation exists in direct proportion to the diversity of its population's political interests. Communities with internally homogenous political desires have little need for high levels of civic activity because their residents' preferences are so easily represented […] A diverse polity not only has the need for strong civic participation to facilitate its democratic process but also provides the political competition that fuels citizens' involvement.
>
> (Oliver 2001, p.84)

Of course, more income inequality also means more people to benefit from redistributive policies (Meltzer & Richard, 1981, p.915). As inequality increases, income redistribution becomes more costly to those at the higher end of the income scale, which increases their opposition and mobilization against such policies, as well. Moreover, the spectacle of conflict may also attract more political participation (Oliver, 2001). Thus, from this perspective, all segments of society become increasingly engaged as income inequality grows.

However, this perspective assumes political preferences may be accurately inferred from one's relative income ('class consciousness'). And further, that citizens who experience economic duress attribute this to the government or ruler of the day believing that a change in leadership, or at the very least a policy change, would redress the situation. Yet, wealthier people have greater resources to define the issues and terms of political debate and hence to shape political preferences, for relative differences in income and wealth translate into relative differences in the power to articulate political issues and to define the political sphere. As alluded to, the nineteenth century collective action described earlier is often characterized as bourgeois, as many franchise extensions over this period were not universal, but rather targeted at the incorporation of the bourgeois class into political processes despite the broader participation of the masses in these protests (see for example Bowles & Gintis, 1986; Marx, 1852; Moore, 1966; Therborn, 1977; Wood, 1995).

Initially following these bourgeois revolutions, and for some time thereafter, the newly franchised became hostile to the idea of a democracy in which the multitude participated, i.e. the extension of political rights to the working class: "[l]iberalism

opposed absolute monarchies; but after they were overthrown, it soon came into conflict with popular movements. […] After the French revolution, liberal thought took on an increasingly conservative tone" (Touraine, 1997, p. 46-7). Therborn (1977) concurs, "[i]t is hardly surprising that the tiny privileged minority constituted by the mercantile and industrial bourgeoisie and the feudal and capitalist landowners should have been almost invariably hostile to democracy – hence the exclusivist outcome of the bourgeois revolutions" (p. 24). Although the concept of democracy originated in ancient Athens, it has been argued that its modern practice stems from European feudalism and the ascent of the propertied classes. As democracy initially emerged during the modern era, the masses neither gained citizenship nor constituted the *demos* to which modern democracy referred; rather, it was the lords for whom the masses laboured that made these gains as they asserted their feudal privilege against the monarchy.

> Certainly, the assertion of aristocratic privilege against encroaching monarchies produced the tradition of 'popular sovereignty' from which the modern conception of democracy derives; yet the 'people' in question was not the *demos* but a privileged stratum constituting an exclusive political nation situated in a public realm between the monarch and the multitude. (Wood, 1995, p.205)

As the economic power of the bourgeois class grew, it came increasingly into conflict with the inherited political power of monarchs and aristocrats: "the first half of the nineteenth century saw the crown and aristocracy draw together in the face of a common threat from new industrial elites. The new propertied classes found themselves outside looking in on the political power centers of the day" (Bowles & Gintis, 1986, p. 43). Those of privilege called for political reform (e.g., the transfer of sovereignty from the

Crown to the privileged stratum). The struggle then was not for an ancient Athenian conception of democracy, but rather a distinctly modern conception, the central criterion of which had shifted from 'rule by the *demos*' to 'rule by a privileged stratum'. These revolutions were led by, and for, economically privileged men lacking political power – the heart of the conflict being between older political forms of power and newer economic forms. Although the working classes mobilized on the side of the bourgeoisie in the struggle for the transfer of sovereignty, they were not among those to immediately share in this new 'popular sovereignty'.

The anti-democratic rhetoric following the bourgeois revolutions was in part muted via a re-definition of democracy, which involved a narrowing of the political sphere. Indeed, "[c]apitalism accepted democracy inasmuch as it reduced democracy to a specific domain of public life, which it designated as political space. All the other areas of social life were left outside democratic control" (Santos, 2006, p.43). This emergent form of democracy is often characterized as premised on a clash between 'equality' and 'liberty' (Karimi, 2009). According to Fraser,

> [l]iberal political theory assumes that it is possible to organize a democratic form of political life on the basis of socio-economic and socio-sexual structures that generate systemic inequalities. For liberals, then, the problem of democracy becomes the problem of how to insulate political processes from what are considered to be non-political or pre-political processes… how to strengthen the barriers separating political institutions that are supposed to instantiate relations of equality from economic, cultural, and socio-sexual institutions that are premised on systemic relations of inequality. (1990, p. 65)

The separation of the political and economic spheres enabled a transfer of power from the former to the latter.

> Landed property in England was already assuming a *capitalist* form, in which economic power was no longer inextricably bound up with juridical, political and military status, and wealth depended increasingly on 'improvement' or the productive use of property subject to the imperatives of a competitive market…a conception of property such as [this] was ultimately more amenable to relaxing the restrictions on membership in the political nation. (Wood, 1995, p. 207)

As the power associated with the political sphere diminished, so too did the need to limit political participation to the economically privileged: "To put it simply, once the economic power of the propertied classes no longer depended upon 'extra-economic' status, on the juridical, political and military powers of lordship, a monopoly on politics was no longer indispensable to the elite" (Wood, 1995, p. 207). Thus, increasing separation of the economic and political spheres supported franchise extension to a broader economic base, as modern democracy emerged in capitalist societies.

In general, democracy emerged in these societies through social unrest and collective action that lead to franchise extensions to the privileged classes who then advocated against broader franchise extensions. The extension of political liberties to the *demos* occurred once the scope of politics had been sufficiently narrowed, allowing anti-democratic rhetoric to subside. In addition to the continued threat of social unrest, leading explanations for franchise extension to the lower classes during the modern era include: ruling class division (Bendix, 1964; Berlinski & Dewan, 2011; Collier, 1999; Himmelfarb, 1966; Lizzeri & Persico, 2004; Llavador & Oxoby, 2005; O'Donnell &

Schmitter, 1986; Therborn, 1977) and national mobilization (Aidt & Jensen, 2011; Freeman & Snidal, 1982; Janowitz, 1976; Therborn, 1977; Ticchi & Vindigni, 2009). Franchise extension has also been attributed to economic development (Barro, 1999; Boix, 2009; Boix & Stokes, 2003; Dahl, 1971; Epstein, Bates, Goldstone, Kristensen, & O'Halloran, 2006; Gundlach & Paldam, 2009; Huntington, 1968; Lipset, 1959, 1960), though causality has been difficult to establish (Acemoglu, Johnson, Robinson, & Yared, 2008; Aidt & Jensen, 2011; Przeworski & Limongi, 1997; Przeworksi, Alavrez, Cheibub, & Limongi, 2000).

In conclusion, weaknesses of this approach include the assumptions that political preferences align with social class and that citizens attribute duress from economic inequality to government. This approach overlooks the ability, incentive, and past experience of the upper classes in shaping political preferences and understandings. Based on the assumption of political and class alignment, it is in the interests of the privileged classes to use their resources to disrupt the connection between political preferences and social class amongst the lower classes (e.g., so that these citizens do not attribute their economic stress to the government). In a capitalist society relative income differences translate into relative power differences particularly with regard to the ability to shape political discourse and thought.

c. Income inequality decreases political participation. Contrary to income inequality increasing political engagement, an alternative perspective is that as income inequality increases, voter turnout will decline. Insofar as lower-class issues are excluded from debate by being deemed 'non-political', demobilization of these groups is likely to occur. From this perspective, the poor experience government as not effectively dealing

with the issues they face and they therefore lose interest in politics; this lack of conflict leads to the wealthier becoming less engaged, as well (Galbraith & Hale, 2008). Further, some argue that "economic duress reduces a person's *capacity* to participate in politics" – as income inequality rises, so too does the 'opportunity cost' of voting amongst lower-income citizens (Rosenstone, 1982, p.26). That is, it is more immediately beneficial to attend to one's unemployment or need for food or shelter than to research political positions, attend political debates, and vote in elections. Putnam argues that there is reduced capacity to establish the social capital required of a robust polity in an unequal society, given the fewer incentives for civic engagement (2000). Some even go so far as to argue there is active voter repression – particularly targeted toward vulnerable groups (Piven & Cloward, 1988; Galbraith & Hale, 2008). This excerpt from a 1975 report on the governmentality of democracies published in the United States seems to support such an approach:

> […] some of the problems of governance in the United States today stem from an *excess of democracy.* […] Needed, instead, is a greater degree of moderation in democracy. […] the effective operation of a democratic political system usually *requires some measure of apathy* and noninvolvement on the part of some individuals and groups. In the past, every democratic society has had a marginal population, of greater or lesser size, which has not actively participated in politics. In itself, this marginality on the part of some groups is inherently undemocratic, but it has also been one of the factors which has enabled democracy to function effectively. (Crozier, Huntington, and Watanuki, p. 113-114, emphasis added)

Recent proposed changes to elections in Canada through Bill C-23 to amend the *Canada Elections Act*, including the elimination of Voter Information Cards, tightening of vouching, politicization of poll supervisor selection, and removal of the Commissioner of Elections' power to investigate electoral infractions, compel witness testimony, or enforce compliance (e.g., on rules such as spending limits), as well as the removal of its mandate to promote electoral participation are viewed by many as antithetical to improving voter turnout. Criticisms of this Bill from the perspective of the impact it would have on the electoral participation of marginalized Canadians has been widespread including arguments from well respected voices such as former Auditor General Sheila Fraser and current Chief Electoral Officer of Elections Canada Marc Mayrand.

What is often referred to as the relative power theory supports this argument that as income inequality increases voter turnout will decline (Dahl, 2006; Galbraith & Hale, 2008; Goodin & Dryzek, 1980; Rosenstone, 1982; Schattschneider, 1960; Solt, 2008). Goodin and Dryzek articulate this well, "[r]elative power is the dominant force in our model of rational participation […] People's relative power – and hence their motive for participation in politics – is generally higher for more of the population where there are conditions of broad social equality" (1980, p.291). Money, particularly in a capitalist society, is equated with power (e.g., the ability to influence others). To the extent that a society's income distribution is concentrated amongst the higher tiers, so too is power. The political landscape is shaped by this income and power imbalance. Those in positions of greater relative income and power more easily define the parameters of political debate by precluding the discussion of issues that they perceive to be harmful to their interests (e.g., income re-distribution) while advancing others that they perceive to

better support and advance their position. Through this narrowing of the political sphere those in lesser power positions may become demobilised as they become convinced that their interests cannot successfully be pursed through the political process (Lukes, 2005). The power advantage of those receiving higher incomes allows them to more consistently prevail in political debates. Although wealthier citizens engage in the political process to defend their interests, as poorer citizens withdraw from the process this need is less apparent which in-turn lowers their participation, as well; nonetheless, wealthier citizens are likely to remain more engaged than their less advantaged counterparts as political conflicts emerge within their upper class (Schattschneider, 1960).

Indeed, from this perspective there are differences in the relative power of various components of the class structure in different capitalist democracies:

> Observation of intercountry differences in income inequality shows that most of the variation occurs in the middle of the income distribution. […] Countries with the most unequal income distributions are those in which the top 20% of the population has a relatively large share of the income […] the shape of the income distribution is primarily a function of the relative strength of economic groups in a country, with the lowest amount of inequality being associated with large and economically powerful middle-class groups. (Rubinson & Quinlan 1977)

These differences explain variation in voter turnout over time and space. Goodin and Dryzek argue: "more people will participate more fully in communities of approximate equals because in such communities power differentials will be less dramatic and more people will have a better chance of influencing the outcome" (1980, p.287). It has also been argued that in higher income inequality societies the middle class, lacking the

resources to influence the political, is more likely to align with wealthier citizens in the hopes of maintaining their relative position; whereas in more equal societies the middle class is more likely to align with lower classes to pursue redistributive policies to their benefit – hence, inequality between the middle and upper classes is the best predictor of voter turnout (Jamie-Castillo, 2009). According to this perspective, it is through this relative power imbalance that income inequality undermines political equality.

This leads to the argument, by some, that for many it is simply not rational to vote. That is, "[t]here is a simple and straightforward explanation for the low rates of political participation of ordinary citizens. Given their experiences of, and perception of the operation of the political structure, apathy is a realistic response, it does not seem worthwhile to participate" (Pateman, 1971, p. 298). Goodin and Dryzek concur, "citizens might be right in thinking that some people exercise much more influence than others and that those others should, quite rationally, regard political participation as a waste of time" (Goodin & Dryzek, 1980, p. 273-4). It is not uncommon in the literature to find examples that defend the rationality of what is often labelled the irrational behaviour of the lower classes (Gaventa, 1980; Pizzorno, 1971; Portes, 1972; Schattschneider, 1960; Scott, 1976). Indeed, from the perspective of the lower classes, as political polarization increases the expectation of achieving desired outcomes diminishes and hence voter turnout is likely to drop (Jamie-Castillo, 2009).

This perspective is also heavily rooted in the assumption of rational thought and is therefore open to similar criticisms as identified earlier, i.e., the assumption of: the primacy of class, a strong link between personal well-being and political orientation, and the belief that economically disadvantaged persons identify the government as the cause

and solution to their troubles. These are questionable assumptions, particularly given the postulate of the separation of the economic and the political that seems central to these arguments.

Some alternative perspectives rely on social norms, solidarity, and cohesion in support of the argument that income inequality depresses voter turnout. Specifically citing Marshall's conception of social citizenship and relating it to differing welfare state approaches as instantiations thereof, Lister (2007) argues: "*one* of the reasons why [voter] turnout varies across time and across space is the nature of social citizenship rights, which relates to the institutions of the welfare state" (p.20). From this perspective, welfare state policies, programs, and services shape societal norms including those regarding voting behaviour. Universal programs encourage the social solidarity that forms the foundation for democratic participation. More expansive rights provide more support for norms of solidarity in ways that more residual welfare states do not. The operation of this is three-fold. Social norms of solidarity and inclusion signal to citizens that it is good to participate in political processes; they also signal to citizens that political participation is expected therein exerting a social pressure of sorts: "a norm of solidarity matters for electoral turnout because it both encourages participation directly, by suggesting to individuals that such activity is right or expected, and indirectly because it simultaneously provides individuals with the information that others are likely to participate" (Lister, 2007, p.26). Third, in democratic societies with more expansive rights citizens have greater opportunities for positive interactions with government, whereas in more punitive welfare states government assistance may be stigmatizing.

Such negative experiences can be demobilizing causing one to withdraw from political participation. Indeed, economic adversity can disrupt social relationships.

> An unemployed worker put it this way: 'You're not able to keep up your end of social obligations. Friends are reluctant to include you in plans for parties, trips, and other things that involve spending money' […] Unemployment, of course, means that usual social interaction with coworkers has been eliminated. Financial problems and unemployment also are likely to produce marital and family problems […] Because coworkers, friends, and one's spouse are sources of political information and they encourage participation, a breakdown of these relationships will reduce [voter] turnout. (Rosenstone, 1982, p.42)

It is argued that homogeneity fosters community cohesion, "[a]s cohesion increases group solidarity (and 'social pressure'), political participation in communities with a high degree of socio-economic, racial or ethnic homogeneity should be higher than in areas where this is not the case" (Geys, 2006, p.644-5). Oliver (2001) also cites the argument that homogeneity stimulates civic activity: "Civic action becomes a way of fitting into the community [… the social environment] encourages participation through the informal transmission of group-based norms which turn participation into a social obligation" (pp.74-5). Conversely, these arguments suggest that income inequality should depress political participation through the disruption to social norms, solidarity, and cohesion.

I find this set of arguments most compelling, particularly in light of the earlier sections of this literature review on Marshall and Esping-Andersen. That is, that income inequality suppresses voter turnout in late-modern capitalist societies through its impact on citizenship. Differences in social citizenship provide a compelling explanation for

variation in turnout both across late-modern capitalist democracies and within these over time, which also relates to differences in welfare states. I test these explanations in the next section of my dissertation – an empirical analysis of the relationship between income inequality and voter turnout in Canada and other late-modern capitalist democracies, over the last few decades.

III. Empirical Analysis

In this section, I undertake a regression analysis of the relationship between voter turnout and income inequality at the national and sub-national level. Given my focus on social citizenship and the welfare state, the national units of analysis in this study are twenty-one late-modern capitalist democracies. I identified this sample of nations through a meta-analysis of research seeking to update Esping-Andersen's (1990) welfare state regime classification (**Appendix B**). Canada is included in this sample. Given that nations may encompass much regional variation that could be averaged out at a national-level, I begin by undertaking a sub-national analysis of the ten Canadian provinces. These provinces provide an ideal sample from which to analyse the relationship between income inequality and voter turnout at this level given the considerable variation in income redistribution policies across the provinces. In Canada, the provinces are responsible for the delivery of social programs and services such as health, education, and social services. Historically, some federal funding and consistency for these programs and services have been ensured through federal-provincial agreements such as the Canada Health Transfer and the Canada Social Transfer.

This empirical analysis is divided into three parts. First, I undertake a regression analysis of voter turnout and income inequality during Canadian *federal* general

elections, at the provincial level (1976-2011). Then, I analyse voter turnout and income inequality during Canadian *provincial* general elections, again at the provincial level (1976-2011). I conclude with an analysis of voter turnout and income inequality during national general elections in a sample of late-modern capitalist democracies (1980-2012). Each section is further divided into a discussion of: the regression model (including sample, variables, estimation, and model specifications); analysis (descriptive statistics and regression results); and findings (from the various models including those with alternative measures of income inequality). I also briefly compare findings across the samples.

A. Canadian Federal General Elections

In this first section, I analyse the relationship between voter turnout and income inequality at the provincial level during Canadian federal general elections (1976-2011). In recent years, the provinces have been granted increasing authority regarding various matters previously within the jurisdiction of the federal government. Nonetheless, federal elections still attract a great deal of attention and tend to result in voter turnouts comparable to those for provincial general elections in Canada today.

a. Model.

Sample. The sample for this analysis consists of just 110 observations, as there are only ten Canadian provinces and there have been just eleven Canadian federal general elections during the selected time period (1976-2011).

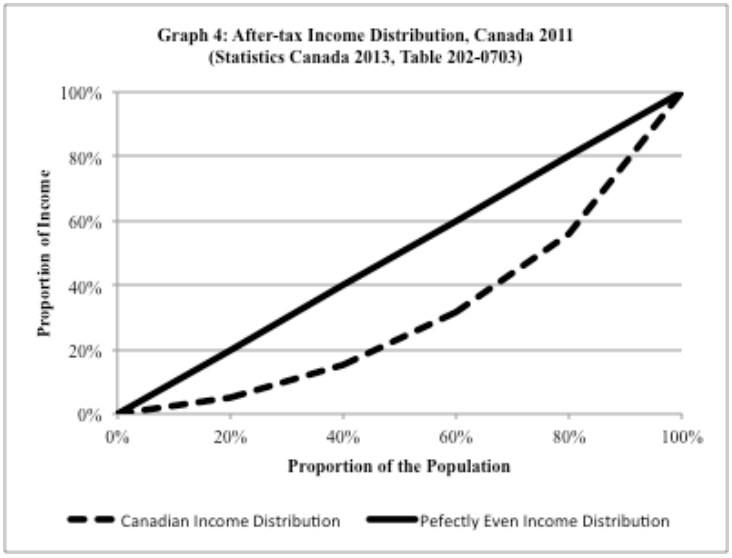
Variables.

Voter turnout. Voter turnout, the dependent variable, is typically measured in one of two ways: as the percentage of registered voters who cast a ballot or as the percentage

of the voting age population who cast a ballot; other less cited measures include the absolute number of votes cast and the percentage of eligible voters who cast a ballot (Endersby, Galatas, & Rackaway, 2002 or Geys, 2006). The differences between these measures can be significant, which some argue is indicative of variation in registration processes (Brady, 2004; Geys, 2006; Nagler, 1992; Piven & Cloward, 1988). Given that voter registration rules for Canadian federal general elections do not vary across the provinces, the provincial proportion of registered voters who cast a ballot in each election is used as the dependent variable in this model. These voter turnout data were obtained from Elections Canada.

Income inequality. The primary independent variable is provincial level income inequality during Canadian federal general election years (1976 to 2011). Again, there are various measures of income (e.g., before-tax and after-tax) and of income inequality including income ratios (e.g., interquintile and interdecile) and income inequality indexes (e.g., Gini, Hoover, and Theil). The after-tax Gini index will be used as the primary explanatory variable in this model given its prominence in the income inequality literature (Galbraith & Hale, 2008; Jaime-Castillo, 2009; Scruggs & Stockemer, 2009). If one plots the cumulative distribution of income in a particular jurisdiction from zero to one hundred per cent against the cumulative percentage of the population receiving that income, again from zero to one hundred per cent, a diagonal at a 45-degree angle would represent income evenly distributed throughout the population (solid line in **Graph 4**). In practice, this line curves (dotted line in **Graph 4**). The Gini coefficient represents the area or difference between the plotted line and the diagonal line. On such a graph, a larger Gini coefficient indicates a greater difference and therefore greater income

inequality whereas a smaller coefficient denotes less income inequality. The Gini coefficient is always a number between zero and one – one representing perfect income inequality and zero representing perfect income equality. Provincial-level Gini coefficients for federal election years were obtained from Statistics Canada.



Control variables. In order to identify control variables to include in the regression models, I reviewed a number of empirical studies that included regression analysis of the impact of income inequality on aggregate voter turnout (**Appendix C**). Through an analysis of these, I identified three additional variables:

- lack of election competitiveness (percentage point gap between popular vote for first and second place parties);
- electoral area size (average population size represented by each Member of Parliament (MP)); and
- population mobility (proportion of population that inter-provincially migrated or internationally immigrated to each province).

I obtained these data from federal organisations and agencies including the Parliament of Canada, Elections Canada, and Statistics Canada.

Estimation. There is some difficulty in studying the relationship between income inequality and voter turnout over time, as general elections are typically held only every few years. This results in the need for a rather large timespan in order to obtain a sample size sufficient for meaningful statistical analysis. However, the focus of this study is on the relationship between these two variables over the last few decades. Further, earlier income inequality data are less available particularly on an annual basis at the provincial level from a consistent and adequate source.

To assist in mitigating these difficulties, I develop a cross-sectional time-series analysis. This involves creating a dataset containing voter turnout during eleven elections (t) in each of the ten Canadian provinces (p), culminating in 110 observations. This dataset is slightly long, as it has more time periods (11) than provinces (10); however, it is considered balanced in that all provinces have measurements in all time periods. This dataset may also be described as 'fixed' given that the same provinces are observed for each period. Cross-sectional time-series analysis has the advantage of capturing differences both over time and between the provinces. It also enables a greater number of observations to be included in the analysis, i.e., 110 elections instead of ten separate analyses of the eleven federal elections, for each province. This increased sample size increases the statistical power of the findings.

Model specifications. I develop four regression models to analyse the effects of provincial income inequality and the other independent variables on provincial voter turnout during the eleven Canadian federal general elections held between 1976 and

2011. Each of these models uses the same variables and dataset described here. Autocorrelation is identified through both the Wooldridge test and the Cumby-Huizinga test for autocorrelation; I adjust the regression analysis to address this. Model 1 involves a fixed-effects regression analysis of variable variation within each province.

$$\text{Voter Turnout}_{pt} = (b_0 + u_p) + b_1\text{income inequality}_{pt} + b_2\text{lack of election competitiveness}_{pt} + b_3\text{electoral area size}_{pt} + b_4\text{population mobility}_{pt} + v_{pt}$$

(where the intercept varies across provinces)

Model 2 employs a random-effects regression analysis that considers both within and cross-provincial variation.

$$\text{Voter Turnout}_{pt} = b_0 + b_1\text{income inequality}_{pt} + b_2\text{lack of election competitiveness}_{pt} + b_3\text{electoral area size}_{pt} + b_4\text{population mobility}_{pt} + (u_p + v_{pt})$$

(where the intercept is constant)

Model 3 is a fixed-effects regression analysis that includes time as a series of independent variables thereby controlling for its potential influence on voter turnout. This is achieved through the creation of a dummy variable for each time period. One of the eleven time periods is then set to zero, enabling that election year to be compared to each of the other election years in the model.

$$\text{Voter Turnout}_{pt} = (b_0 + u_p) + b_1\text{income inequality}_{pt} + b_2\text{lack of election competitiveness}_{pt} + b_3\text{electoral area size}_{pt} + b_4\text{population mobility}_{pt} + u_1t_1 + u_2t_2 + u_3t_3 + u_4t_4 + u_5t_5 + u_6t_6 + u_7t_7 + u_8t_8 + u_9t_9 + u_{10}t_{10} + u_{11}t_{11} + v_{pt}$$

(where u_1-u_{11} are parameter estimates of time dummy variables t_1-t_{11} and the intercept varies across provinces)

Model 4 is a random-effects regression analysis, but also with a series of time dummy variables.

$$\text{Voter Turnout}_{pt} = b_0 + b_1\text{income inequality}_{pt} + b_2\text{lack of election competitiveness}_{pt} + b_3\text{electoral area size}_{pt} + b_4\text{population mobility}_{pt} + u_1t_1 + u_2t_2 + u_3t_3 + u_4t_4 + u_5t_5 + u_6t_6 + u_7t_7 + u_8t_8 + u_9t_9 + u_{10}t_{10} + u_{11}t_{11} + (u_p + v_{pt})$$

(where u_1-u_{11} are parameter estimates of time dummy variables t_1-t_{11} and where the intercept is constant)

Based on my analysis of the variables in similar models (**Appendix C**), all of the coefficients are expected to be negative. That is, it is anticipated that as each of the following decreases, voter turnout will increase: income inequality, the percentage point gap between the popular vote for the first and second place parties (lack of election competiveness), the number of people represented by each MP (electoral area size), and the proportion of the population that has migrated (population mobility).

b. Analysis.

Descriptive statistics.

Voter turnout. All provincial level voter turnout observations for federal general elections between 1976 and 2011, as well as the average and range for each province, are detailed below (**Table 1**). The national level observations, average, and range are also included in this Table, for comparative purposes but were not included in the statistical analyses, i.e., are not included in the results presented in Tables 3, 15, or 16 (**Appendix D**).

Regarding the most recent federal general election (2011), Newfoundland (52.6%), Alberta (55.8%), Manitoba (59.4%), and British Columbia (60.4%) are the provinces that experienced voter turnouts below the Canadian average (61.1%). In contrast, Prince Edward Island reports the highest voter turnout (73.3%), followed by New Brunswick (66.2%) and Saskatchewan (63.1%).

Table 1: Voter Turnout at Federal General Elections, Canada and the Provinces (1976-2011)

Federal General Election	CAN	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL
1979	75.7%	75.0%	68.0%	79.0%	77.0%	78.0%	76.0%	74.0%	75.0%	81.0%	60.0%
1980	69.3%	71.0%	61.0%	71.0%	69.0%	72.0%	68.0%	71.0%	72.0%	79.0%	59.0%
1984	75.3%	78.0%	69.0%	78.0%	73.0%	76.0%	76.0%	77.0%	75.0%	85.0%	65.0%
1988	75.3%	79.0%	75.0%	78.0%	75.0%	75.0%	75.0%	76.0%	75.0%	85.0%	67.0%
1993	69.6%	67.0%	65.0%	69.0%	68.0%	67.0%	77.0%	69.0%	64.0%	73.0%	55.0%
1997	67.0%	66.0%	59.0%	65.0%	63.0%	66.0%	73.0%	73.0%	69.0%	73.0%	55.0%
2000	61.2%	63.0%	60.0%	62.0%	62.0%	58.0%	64.0%	68.0%	63.0%	73.0%	57.0%
2004	60.9%	63.0%	59.0%	59.0%	57.0%	62.0%	61.0%	63.0%	62.0%	71.0%	49.0%
2006	64.7%	64.0%	62.0%	65.0%	62.0%	67.0%	64.0%	69.0%	64.0%	73.0%	57.0%
2008	58.8%	60.1%	52.4%	58.7%	56.1%	58.6%	61.7%	62.9%	60.3%	69.0%	47.7%
2011	61.1%	60.4%	55.8%	63.1%	59.4%	61.5%	62.9%	66.2%	62.0%	73.3%	52.6%
Average	67.2%	67.9%	62.4%	68.0%	65.6%	67.4%	69.0%	69.9%	67.4%	75.9%	56.8%
Range	16.9%	18.9%	22.6%	20.3%	20.9%	20.0%	16.0%	14.1%	14.7%	16.0%	19.3%

Sources: Elections Canada, 2007; Elections Canada, 2012

Regarding average voter turnout at federal general elections over this time period (1976-2011), three provinces are lower than the national average (67.2%): Newfoundland (56.8%), Alberta (62.4%), and Manitoba (65.6%). The four provinces that have the highest average voter turnout are: Prince Edward Island (75.9%), New Brunswick (69.9%), Quebec (69.0%), and Saskatchewan (68.0%). These provincial rankings regarding average voter turnout are similar to those regarding the most recent federal general election.

In this dataset, voter turnout range is indicative of declining voter turnout. Alberta reports some of the lowest voter turnouts and also the greatest decline in voter turnout for federal general elections during the time period (22.6 percentage points). Conversely, New Brunswick reports some of the highest turnouts, as well as the lowest decline in voter turnout (14.1 percentage points). At the national level, the range in voter

turnout was 16.9 percentage points. Voter turnout at federal general elections declined in all provinces over this time period.

Income inequality. Provincial level income inequality observations (as measured by the after-tax Gini coefficient), as well as the provincial average and range, for each Canadian federal general election (1976-2011) are detailed below (**Table 2**). Again, national level observations are included for comparative purposes only, but are not included in the statistical analyses.

Table 2: Income Inequality (Gini Coefficient) during Federal General Elections, Canada and the Provinces (1976-2011)

Federal General Election	CAN	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL
1979	0.353	0.362	0.353	0.376	0.361	0.345	0.352	0.336	0.348	0.351	0.333
1980	0.353	0.364	0.373	0.359	0.364	0.342	0.344	0.332	0.340	0.355	0.350
1984	0.357	0.363	0.357	0.365	0.351	0.353	0.356	0.350	0.352	0.348	0.330
1988	0.354	0.347	0.351	0.354	0.350	0.351	0.349	0.330	0.343	0.328	0.316
1993	0.361	0.367	0.362	0.357	0.344	0.361	0.348	0.341	0.339	0.322	0.332
1997	0.377	0.383	0.379	0.348	0.354	0.378	0.366	0.352	0.357	0.327	0.332
2000	0.392	0.390	0.385	0.369	0.364	0.396	0.376	0.365	0.372	0.362	0.368
2004	0.394	0.395	0.390	0.381	0.369	0.400	0.374	0.371	0.372	0.342	0.365
2006	0.392	0.399	0.388	0.397	0.377	0.391	0.372	0.371	0.378	0.348	0.368
2008	0.394	0.403	0.379	0.386	0.369	0.397	0.378	0.365	0.377	0.348	0.385
2011	0.395	0.405	0.407	0.375	0.367	0.393	0.378	0.365	0.367	0.370	0.388
Average	0.375	0.380	0.375	0.370	0.361	0.373	0.363	0.353	0.359	0.346	0.352
Range	0.042	0.058	0.056	0.049	0.033	0.058	0.034	0.041	0.039	0.048	0.072

Source: Statistics Canada, 2013 (CANSIM Table 202-0705)

During the most recent federal general election (2011) Alberta reports the highest income inequality of all the provinces (0.407), followed by British Columbia (0.405), Ontario (0.393), and Newfoundland (0.388); while New Brunswick (0.365), Nova Scotia (0.367), Manitoba (0.367), and Prince Edward Island (0.370) report the lowest; nationally this figure is 0.395. Prince Edward Island reports the lowest average income inequality during federal general election years over this time period (0.346), followed by Newfoundland (0.352), New Brunswick (0.353), and Nova Scotia (0.359); British Columbia reports the highest (0.380), followed by Alberta (0.375) and Ontario (0.373); nationally this figure was 0.375.

Given that income inequality during federal general election years generally increased in all provinces over this time period, income inequality range is indicative of increasing inequality. Indeed, Newfoundland reports the highest increase in income inequality during federal general election years over this period (0.072), followed by British Columbia (0.058), Ontario (0.058), and Alberta (0.056). At the other end, Manitoba reports the lowest increase in income inequality (0.033), followed by Quebec (0.034), and Nova Scotia (0.039). Nationally, the range was 0.042 over this time period.

These descriptive statistics suggest a relationship between the primary variables of interest, as those provinces with higher income inequality seem to generally report lower voter turnout, and vice versa. The regression analysis to follow will explore this further. Additional descriptive statistics for this model are discussed in **Appendix D**.

Regression results. Next, I run the four regression models described earlier to determine the cross-sectional time-series estimates of the determinants of provincial voter turnout at Canadian federal general elections (1976-2011). Again, these four models include two fixed-effects and two random-effects regression analyses, each not controlling and controlling for time. The results of these regression models are detailed below (**Table 3**). The Wooldridge test for autocorrelation indicates that the error terms seem to be correlated between time periods ($p=0.0267$); the Cumby-Huizinga test for autocorrelation also indicates this ($p<0.0000$). I control for autocorrelation in each of the models to address this. I use Stata 12.1 statistical software to calculate the models. A discussion of model fit, as well as variable statistical significance and magnitude of impact follows, for each model.

Table 3: Cross-sectional Time-series Estimates of the Determinants of Voter Turnout for Canadian Federal General Elections, at the Provincial Level (1976-2011)				
Variable	**Model 1**	**Model 2**	**Model 3**	**Model 4**
Income Inequality (Gini)	-1.559***	-1.688***	0.028	0.263
	(0.349)	(0.346)	(0.260)	(0.245)
Lack of Election Competitiveness	-0.142**	-0.117**	-0.106***	-0.095***
	(0.043)	(0.044)	(0.024)	(0.023)
Electoral Area Size	-2.15e-06*	-1.12e-06	-7.49e-07	-1.05e-06**
	(9.80e-07)	(5.76e-07)	(4.76e-07)	(3.62e-07)
Population Mobility	-2.023*	-0.181	-0.933	-0.981*
	(1.009)	(0.843)	(0.570)	(0.492)
Intercept (baseline)	1.475***	1.402***	0.715***	0.773***
	(0.080)	(0.115)	(0.085)	(0.084)
Year1 (referent)			Referent	Referent
Year2 (dummy)			0.047***	-0.051***
			(0.011)	(0.009)
Year3 (dummy)			0.121***	0.007
			(0.012)	(0.010)
Year4 (dummy)			0.124***	0.011
			(0.014)	(0.010)
Year5 (dummy)			0.055***	-0.060***
			(0.013)	(0.010)
Year6 (dummy)			0.029*	-0.087***
			(0.011)	(0.010)
Year7 (dummy)			0.002	-0.118***
			(0.010)	(0.012)
Year8 (dummy)			-0.021*	-0.141***
			(0.010)	(0.012)
Year9 (dummy)			0.022*	-0.099***
			(0.009)	(0.012)
Year10 (dummy)			-0.033***	-0.153***
			(0.008)	(0.012)
Year11 (dummy)			0.000	-0.120***
			0.001	(0.012)
Model (F-test, Wald)	15.24***	57.84***	51.00***	742.38***
R2	0.415	0.558	0.896	0.914
rho_ar	0.308	0.308	0.163	0.163
N	100	110	100	110
Statistical significance: * <0.05, ** <0.01, * <0.001 (Standard errors in parentheses)**				

Model 1: Fixed-effects regression. The first fixed-effects regression model ($F=15.24$, $p<0.0000$) seems to fit the data well with an R^2 of 0.415 (**Table 3**). The estimated autocorrelation coefficient for this model is 0.308. Income inequality ($p<0.001$), lack of competitive elections ($p<0.01$), electoral area size ($p<0.05$), and population mobility ($p<0.05$) are all statistically significant in this model. All of the coefficients have the expected negative relationship with voter turnout. That is, as anticipated, as income inequality, lack of election competitiveness, electoral area size, and population mobility increases, voter turnout decreases.

More specifically, for each one percentage point increase in income inequality this model indicates that voter turnout is expected to decrease by 1.56 percentage points, while holding the other model variables constant. For each one percentage point increase in lack of election competitiveness, the model predicts that voter turnout will decrease 0.14 percentage points; for each 10,000 person increase in the electoral area size voter turnout is predicted to decrease 2.15 percentage points; and for each one percentage point increase in population mobility voter turnout is anticipated to decrease 2.02 percentage points holding the other variables constant.

Although this model fits the data well, it only considers variation within each province. In order to analyse variation both within and between provinces I run a random-effects model.

Model 2: Random-effects regression. The random-effects model (Wald chi^2=57.84, p<0.0000) also seems to fit the data well, as the R^2 increases to 0.558; the estimated autocorrelation coefficient is unchanged from Model 1 (0.308). Income inequality (p<0.001) and lack of election competitiveness (p<0.01) are both statistically significant and have the expected negative relationship with voter turnout; electoral area size and population mobility are no longer statistically significant. The magnitude of the impact of income inequality and lack of election competitiveness on voter turnout is similar to that found in Model 1.

Model 3: Fixed-effects regression controlling for time. In order to control for the possible effects of a trend variable, I add time to the fixed-effects regression model, as a series of independent dummy variables. Again, this model seems to fit the data well (F=57.84, p<0.000, R^2=0.896). However, income inequality no longer has a statistically significant relationship with voter turnout. Rather, the only statistically significant variable in the model is lack of election competitiveness (p<0.001), which has the expected negative coefficient; several of the time dummy variables are also statistically significantly different from the referent election year (1979).

Model 4: Random-effects regression controlling for time. I add a series of independent time dummy variables to the random-effects regression model, as well (Wald chi^2=742.38, p<0.000, R^2=0.914). As with Model 3, income inequality no longer has a statistically significant relationship with voter turnout. However, election competitiveness does still have a statistically significant negative relationship with voter turnout (p<0.001), as do nearly all of the time dummy variables (p<0.001).

c. Findings.

Comparing models. For the first two models, as anticipated, income inequality has a statistically significant negative relationship with voter turnout ($p<0.001$), as does lack of election competitiveness ($p<0.01$). Electoral area size ($p<0.05$) and population mobility ($p<0.05$) each have the expected statistically significant negative relationship with voter turnout in the fixed-effects model, but not in the random-effects model. Once time is added to the fixed-effects (Model 3) and random-effects (Model 4) models, the apparent causal relationship between income inequality and voter turnout disappears. Lack of election competitiveness continues to have a statistically significant negative relationship in both of these models ($p<0.001$); whereas electoral area size ($p<0.01$) and population mobility ($p<0.05$) each have the expected statistically significant negative relationship with voter turnout in the random-effects model (Model 4), but not in the fixed-effects model (Model 3).

Other income inequality measures. A criticism of the Gini coefficient is that different income distributions may yield the same Gini coefficients. That is, the Gini coefficient may mask differences in inequality between the top and the middle of the income ladder and those between the middle and the bottom, i.e., the relative position of the middle-class (Jaime-Castillo, 2009). Income ratios provide an alternative measure of inequality that can help to overcome this problem (Finseraas, 2007; Geys, 2006; Jaime-Castillo, 2009; Mahler, 2002; Rubinson & Quinlan, 1977; Solt, 2008).

To address this, I repeat this regression analysis using thirteen different measure of income inequality – ten interquintile income ratios and three high-income ratios (**Appendix D**). Income inequality is found to have a statistically significant negative

relationship with voter turnout in Model 1 (fixed-effects) and Model 2 (random-effects) comparing the income of the highest quintile to that of each other quintile, i.e., the 100/80 ($p<0.001$), 100/60 ($p<0.001$), 100/40 ($p<0.001$), and 100/20 ($p<0.01$, fixed effects only) income ratios (**Table 16, Appendix D**). That is, the ratio of the average after-tax income of those Canadian family units receiving the highest 20 per cent of all incomes compared to: that of the second highest 20 per cent of all incomes (100/80 income ratio), that of the third highest 20 per cent of all incomes (100/60 income ratio), and that of the fourth highest 20 per cent of all incomes (100/40 income ratio) is found to have a statistically significant negative relationship with voter turnout across Model 1 and Model 2 ($p<0.001$). Similarly, the ratio of the average after-tax income of those Canadian family units receiving the highest 20 per cent of all incomes compared to that of the lowest 20 per cent of all incomes (100/20 income ratio) is found to have a statistically significant negative relationship with voter turnout in the fixed-effects model ($p<0.01$), but not the random-effects model.

The ratio of the average after-tax income of those Canadian family units receiving the second highest 20 per cent of all incomes compared to that of the lowest 20 per cent of all incomes (80/20 income ratio), as well as the ratio comparing the third highest 20 per cent of all incomes compared to that of the lowest 20 per cent of all incomes (60/20 income ratio) are also found to have a statistically significant negative relationship with voter turnout ($p<0.05$) in Model 1 (fixed-effects), but not Model 2 (random-effects); none of the other income ratios are found to be statistically significant in Models 1 or 2. Further, as with the Gini coefficient, in none of the models controlling for time does income inequality have a statistically significant causal relationship with voter turnout.

This evidence suggests that the apparent relationship between income inequality and voter turnout at the provincial level for Canadian federal general elections (1976-2011) is caused by a more fundamental factor. This is further explored in the Discussion section of this study. For now, I turn to an investigation of the relationship between voter turnout and income inequality at the provincial level for Canadian provincial general elections over the same time period.

B. Canadian Provincial General Elections

The analyses and discussion thus far are based on provincial income inequality and voter turnout during Canadian *federal* general elections (1976-2011). In this section, I present an analysis of the relationship between provincial income inequality and voter turnout at Canadian *provincial* general elections over this same time period. In Canada, the provinces have responsibility for the delivery of most social programs and services including social assistance for lower-income working age persons. These vary across the provinces as do income tax systems that re-distribute income to varying degrees. For these reasons, voter turnout during provincial general elections may also have a strong relationship with income inequality levels.

a. Model.

Sample. During this time period (1976-2011), the number of general elections held by each province ranges from eight (British Columbia) to eleven (Prince Edward Island). This renders a sample consisting of 95 observations, which is slightly smaller than was the case for the federal general elections dataset (110 observations).

Variables. Again, voter turnout is defined as the proportion of registered voters who cast a ballot. These data were obtained from the various provincial electoral agencies in Canada. Also mirroring the previous analyses, my primary independent variable is income inequality during Canadian provincial general election years, i.e., the Gini co-efficient. These data were obtained from Statistics Canada. I also use the same three control variables in this analysis of provincial general elections data, as was used in the analysis of federal general elections:

- lack of election competitiveness (percentage point gap between first and second place parties);
- electoral area size (average population size represented by each provincial Member of Parliament (MP)); and
- population mobility (proportion of population that inter-provincially migrated or internationally immigrated to each province).

These data were obtained from provincial electoral agencies and Statistics Canada.

Estimation. As with the previous dataset, a cross-sectional time-series analysis is used to analyse these data consisting of 95 observations across ten provinces (p) and twelve time periods (t). Because each province has not held the same number of general elections over this time, not all provinces have observations for each of the twelve time periods. This results in a slightly long and slightly unbalanced fixed dataset. As with the previous analysis, cross-sectional time-series regression analysis is used, as it has the advantage of capturing differences both over time and between the provinces while also enabling a greater number of observations to be included in the analysis (increasing statistical power) than would be the case with a simple linear regression model.

Model specifications. I run the same four regression models using the provincial general elections data, as I ran with the federal general elections data: fixed-effects and random-effects, each not controlling and then controlling for time. Each presents a different approach to analysing the effects of aggregate income inequality, election competitiveness, electoral area size, and population mobility on voter turnout during provincial general elections between 1976 and 2011, using cross-sectional time-series data. As with the previous dataset, the Cumby-Huizinga test for autocorrelation identifies the presence of autocorrelation (though the Wooldridge test does not), which I address in my regression analysis. Model 1 consists of a fixed-effects regression analysis.

$$\text{Voter Turnout}_{pt} = (b_0 + u_p) + b_1\text{income inequality}_{pt} + b_2\text{lack of election competitiveness}_{pt} + b_3\text{electoral area size}_{pt} + b_4\text{population mobility}_{pt} + v_{pt}$$

(where the intercept varies across provinces)

Model 2 is a random-effects regression analysis.

$$\text{Voter Turnout}_{pt} = b_0 + b_1\text{income inequality}_{pt} + b_2\text{lack of election competitiveness}_{pt} + b_3\text{electoral area size}_{pt} + b_4\text{population mobility}_{pt} + (u_p + v_{pt})$$

(where the intercept is constant)

Model 3 is a fixed-effects regression analysis that controls for the potential influence of time by including a series of dummy variables representing each time period. One of the twelve time periods is then set to zero to compare it to each of the other election years in the model.

$$\text{Voter Turnout}_{pt} = (b_0 + u_p) + b_1\text{income inequality}_{pt} + b_2\text{lack of election competitiveness}_{pt} + b_3\text{electoral area size}_{pt} + b_4\text{population mobility}_{pt} + u_1t_1 + u_2t_2 + u_3t_3 + u_4t_4 + u_5t_5 + u_6t_6 + u_7t_7 + u_8t_8 + u_9t_9 + u_{10}t_{10} + u_{11}t_{11} + u_{12}t_{12} + v_{pt}$$

(where u_1-u_{12} are parameter estimates of time dummy variables t_1-t_{12} and the intercept varies across provinces)

Lastly, I run a random-effects regression model (Model 4) controlling for time using dummy variables.

$$\text{Voter Turnout}_{pt} = b_0 + b_1\text{inequality}_{pt} + b_2\text{lack of election competitiveness}_{pt} + b_3\text{electoral area size}_{pt} + b_4\text{population mobility}_{pt} + u_1t_1 + u_2t_2 + u_3t_3 + u_4t_4 + u_5t_5 + u_6t_6 + u_7t_7 + u_8t_8 + u_9t_9 + u_{10}t_{10} + u_{11}t_{11} + u_{12}t_{12} + (u_p + v_{pt})$$

(where u_1-u_{12} are parameter estimates of time dummy variables t_1-t_{12} and the intercept is constant)

Based on the results in the previous section on Canadian federal general elections and the control variable analysis (**Appendix C**), I expect all of the coefficients in these models to be negative. In other words, as income inequality, lack of election competitiveness, electoral area size, and population mobility each decrease at the provincial level, I expect voter turnout at provincial general elections to increase.

b. Analysis.

Descriptive statistics.

Voter turnout. Regarding the most recent provincial general elections during this time period (1976-2011), Alberta (40.6%), Ontario (48.2%), and British Columbia (55.1%) have the lowest voter turnouts, whereas Prince Edward Island reports the highest (76.5%), followed by New Brunswick (69.6%) and Saskatchewan (66.7%) (**Table 4**). These patterns are similar to those described earlier regarding voter turnout during the most recent federal general election. Regarding the average voter turnout at provincial general elections, Alberta (53.2%), Ontario (59.1%), and Manitoba (66.3%) have the

lowest, whereas Prince Edward Island (82.9%), Quebec (75.3%), and New Brunswick (75.1%) report the highest. Voter turnout at provincial general elections declined in all provinces over this time period; voter turnout range provides an indication of the amount of decline in each province. Quebec reports the highest range in voter turnout at provincial general elections during the time period (27.9 percentage points), followed by Alberta (25.4 percentage points); whereas Prince Edward Island (11.1 percentage points) and New Brunswick (14.6 percentage points) report the lowest. In general, these patterns are similar to those described earlier regarding voter turnout at federal general elections.

Income inequality. Income inequality during provincial general election years generally increased in all provinces over this time period (**Table 4**). During the most recent provincial general elections (2008-2011) British Columbia (0.405), Ontario (0.393), and Newfoundland (0.388) report the highest income inequality, while Manitoba (0.367), New Brunswick (0.367), and Prince Edward Island (0.370) report the lowest. On average, Prince Edward Island (0.347), Newfoundland (0.348), and New Brunswick (0.353) report the lowest income inequality during provincial general election years. Conversely, British Columbia (0.379), Alberta (0.369), Saskatchewan (0.368), and Ontario (0.367) report the highest. Newfoundland having one of the greatest amounts of inequality during the most recent provincial general elections, but one of the lowest on average suggests a recent increase in income inequality in this province. Indeed, Newfoundland (0.073) along with Prince Edward Island (0.074) report the greatest change in income inequality over the election years; while Saskatchewan (0.029), Quebec (0.036), and New Brunswick (0.037) report the least. These patterns seem to support a negative relationship between voter turnout and income inequality, as the provinces with

higher income inequality (British Columbia, Alberta, and Ontario) seem to have lower voter turnouts and vice versa (Prince Edward Island and New Brunswick). These patterns also, generally, reflect those regarding federal general elections over this same time period (previous section).

More model descriptive statistics are available (**Appendix E**), including those for control variables, as well as additional statistics such as standard deviation overall, within, and between the provinces, for each variable.

Table 4: Voter Turnout and Income Inequality (Gini Coefficient) during Provincial General Elections, Canadian Provinces (1976-2011)
(Provincial General Election Year Indicated below each Voter Turnout & Inequality Set of Measures)

	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL	Average
1976-1978			79.4%	75.6%	65.6%	85.3%	75.6%	78.2%	86.3%		78.0%
			0.366	0.369	0.348	0.353	0.334	0.361	0.396		0.361
			1978	1977	1977	1976	1978	1978	1978		
1979-1981	69.1%	58.7%		72.4%	58.0%	82.5%		74.2%	83.8%	73.6%	71.5%
	0.362	0.353		0.358	0.338	0.345		0.342	0.351	0.333	0.348
	1979	1979		1981	1981	1981		1981	1979	1979	
1982-1984	77.7%	66.0%	83.9%				82.1%	67.5%	78.2%	69.9%	75.0%
	0.358	0.358	0.363				0.351	0.352	0.335	0.325	0.349
	1983	1982	1982				1982	1984	1982	1982	
1985-1986	77.2%	47.2%	82.1%	67.9%	61.5%	75.6%			87.6%	77.1%	72.0%
	0.361	0.36	0.374	0.344	0.351	0.347			0.331	0.346	0.352
	1986	1986	1986	1986	1985	1985			1986	1985	
1987-1989		53.6%		74.0%	62.7%	75.0%	82.0%	75.8%	80.8%	79.3%	72.9%
		0.352		0.350	0.349	0.342	0.344	0.343	0.346	0.315	0.343
		1989		1988	1987	1989	1987	1988	1989	1989	
1990-1992	75.1%		83.2%	69.1%	64.4%		80.1%				74.4%
	0.367		0.357	0.342	0.352		0.342				0.352
	1991		1991	1990	1990		1991				
1993-1995		60.2%	64.6%	69.2%	62.9%	81.6%	74.9%	75.4%	80.7%	83.6%	72.6%
		0.362	0.360	0.347	0.363	0.352	0.341	0.339	0.322	0.332	0.346
		1993	1995	1995	1995	1994	1995	1993	1993	1993	
1996-1998	71.5%	53.8%				78.3%		69.5%	85.8%	74.4%	72.2%
	0.378	0.379				0.372		0.370	0.325	0.338	0.360
	1996	1997				1998		1998	1996	1996	
1999-2001	70.9%	53.4%	65.5%	68.1%	58.3%		75.6%	68.1%	84.9%	69.6%	68.3%
	0.400	0.384	0.360	0.358	0.391		0.352	0.371	0.362	0.361	0.371
	2001	2001	1999	1999	1999		1999	1999	2000	1999	
2002-2004		45.1%	71.0%	54.2%	56.8%	70.4%	68.7%	65.6%	83.3%	72.5%	65.3%
		0.390	0.374	0.357	0.390	0.370	0.371	0.370	0.347	0.364	0.370
		2004	2003	2003	2003	2003	2003	2003	2003	2003	
2005-2007	62.4%		76.0%	56.8%	52.1%	71.2%	67.5%	59.9%	83.8%	61.3%	65.7%
	0.398		0.386	0.381	0.393	0.374	0.371	0.378	0.335	0.376	0.377
	2005		2007	2007	2007	2007	2006	2006	2007	2007	
2008-2011	55.1%	40.6%	66.7%	55.8%	48.2%	57.4%	69.6%	58.0%	76.5%	57.9%	58.6%
	0.405	0.379	0.375	0.367	0.393	0.378	0.367	0.386	0.370	0.388	0.381
	2009	2008	2011	2011	2011	2008	2010	2009	2011	2011	
Average	69.9%	53.2%	74.7%	66.3%	59.1%	75.3%	75.1%	69.2%	82.9%	71.9%	69.8%
	0.379	0.369	0.368	0.357	0.367	0.359	0.353	0.361	0.347	0.348	0.361
Range	22.6%	25.4%	19.3%	21.4%	17.4%	27.9%	14.6%	20.2%	11.1%	25.7%	20.6%
	0.047	0.038	0.029	0.039	0.055	0.036	0.037	0.047	0.074	0.073	0.0475

Sources: Elections Alberta, 2010, 2007; Elections BC, 2009, 2013; Elections Manitoba, 2006, 2007, 2011; Elections New Brunswick, 2010, 1991; Elections Newfoundland and Labrador, 2011; Elections Nova Scotia, 2009; Elections Ontario, 2011; Elections Prince Edward Island, 2011; Elections Quebec, 2008; Elections Saskatchewan, 2011; Statistics Canada, 2013 (CANSIM Table 202-0705)

Regression results. Results from the four regression models regarding the impact of provincial-level income inequality, lack of election competitiveness, electoral area size, and population mobility on voter turnout during Canadian provincial general elections (1976-2011), are presented below (**Table 5**). As with the Canadian federal general elections data, autocorrelation is controlled for in each of the models as the Cumby-Huizinga test ($p<0.000$) indicated autocorrelation is present (though the Wooldridge test did not ($p=0.090$)). A discussion of model fit, and variables' statistical significance and impact on voter turnout follows. As with the previous models, Stata 12.1 is the statistical software used in the analyses, below.

Model 1: Fixed-effects regression. Although the data seems to fit Model 1 well ($F=8.49$, $p<0.000$, $R^2=0.324$), the F-test accepts the null hypothesis that there is no fixed group effect ($F=-1.75$, $p=1.0$); the estimated autocorrelation coefficient for this model is 0.5893 (**Table 5**). Income inequality is the only statistically significant variable in this model ($p<0.001$); however, its coefficient is positive whereas a negative coefficient was anticipated for this variable. Specifically, for every one percentage point increase in income inequality this model predicts that voter turnout will increase 2.23 percentage points.

Model 2: Random-effects regression. Model 2 seems to fit the data well (Wald $chi^2=19.25$, $p<0.01$, $R^2=0.251$), and displays the same autocorrelation coefficient as in Model 1 (0.5893) (**Table 5**). Income inequality ($p<0.05$) and electoral area size ($p<0.01$) are the only statistically significant variables in this model and both are negative coefficients, as anticipated. For every one percentage point increase in income inequality this model predicts that voter turnout will decrease 1.14 percentage points.

Table 5: Cross-sectional Time-series Estimates of the Determinants of Voter Turnout for Canadian Provincial General Elections, at the Provincial Level (1976-2011)				
Variable	**Model 1**	**Model 2**	**Model 3**	**Model 4**
Income Inequality (Gini)	2.233***	-1.140*	0.008	-0.092
	(0.414)	(0.456)	(0.637)	(0.511)
Lack of Election Competitiveness	-0.031	-0.035	-0.0070	-0.0170
	(0.083)	(0.062)	(0.063)	(0.061)
Electoral Area Size	-3.42e-06	-1.83e-06**	-3.56e-07	-1.22e-06*
	(2.00e-06)	(6.79e-07)	(1.17e-06)	(6.21e-07)
Population Mobility	-0.371	-1.795	-2.173	-1.899
	(2.033)	(1.235)	(1.898)	(1.328)
Intercept (baseline)	-0.020	1.207***	-0.108*	0.875
	(0.055)	(0.165)	(0.051)	(0.185)
Year1 (referent)			Referent	Referent
Year2 (dummy)			0.547***	-0.029
			(0.138)	(0.025)
Year3 (dummy)			0.757***	-0.027
			(0.189)	(0.028)
Year4 (dummy)			0.817***	-0.047
			(0.211)	(0.029)
Year5 (dummy)			0.879***	-0.025
			(0.218)	(0.028)
Year6 (dummy)			0.901***	-0.009
			(0.221)	(0.031)
Year7 (dummy)			0.868***	-0.043
			(0.221)	(0.029)
Year8 (dummy)			0.856***	-0.059*
			(0.230)	(0.029)
Year9 (dummy)			0.834**	-0.073*
			(0.235)	(0.029)
Year10 (dummy)			0.806**	-0.108***
			(0.237)	(0.028)
Year11 (dummy)			0.795**	-0.118***
			(0.241)	(0.028)
Year12 (dummy)			0.745**	-0.167***
			(0.243)	(0.028)
Model (F-test, Wald)	8.49***	19.25**	15.54***	77.29***
R2	0.323	0.251	0.795	0.601
rho_ar	0.589	0.589	0.383	0.383
N	85	95	85	95
Statistical significance: * <0.05, ** <0.01, * <0.001 (Standard errors in parentheses)**				

Model 3: Fixed-effects regression controlling for time. Time is added to Model 3 ($F=15.54$, $p<0.000$, $R^2=0.795$) as a series of independent dummy variables (**Table 5**). Contrary to Model 1, the F-test now rejects the null hypothesis in favour of a fixed group effect ($F=7.66$, $p<0.000$). The estimated autocorrelation coefficient for this model is 0.383. However, none of the variables, other than time, are found to be statistically significant.

Model 4: Random-effects regression controlling for time. In Model 4 (Wald $chi^2=77.29$, $p<0.001$, $R^2=0.601$), once time is added to the random-effects regression model none of the other variables are found to have a statistically significant relationship with voter turnout.

c. Findings.

Comparing models. As with the Canadian federal general elections data, income inequality has a statistically significant relationship with voter turnout ($p<0.05$) in Models 1 and 2 but not Models 3 or 4. Unlike the previous data, this relationship is positive in Model 1 and negative in Model 2. Previously this relationship was negative in both models. This change in sign may be related to the lack of a fixed group effect identified in this model. The only other statistically significant variable, other than time, was electoral area size in Model 2. Indeed, as with the federal general elections data, once time was added as a control variable the apparent causal relationship between income inequality and voter turnout disappeared.

Other income inequality measures. When I repeat these four models using the same thirteen alternative measures of income inequality (as were calculated using the federal general elections dataset (**Appendix E**)), income inequality is found to have a

statistically significant ($p<0.01$) positive relationship with voter turnout across all iterations of Model 1 except for one (100/20 income ratio); in each of these a lack of fixed group effect is also identified (except for the 60/40 and 99 per cent income ratios) (**Table 20, Appendix E**). Model 2 results are more similar to those based on the federal general elections data, i.e., the 100/40, 100/60, and 100/80 income ratios are found to have a statistically significant ($p<0.01$) negative relationship with voter turnout, as they do with the federal general elections data. That is, the ratio of the average after-tax income of those Canadian family units receiving the highest 20 per cent of all incomes compared to: that of the second highest 20 per cent of all incomes (100/80 income ratio), that of the third highest 20 per cent of all incomes (100/60 income ratio), and that of the fourth highest 20 per cent of all incomes (100/40 income ratio) is found to have a statistically significant negative relationship with voter turnout in Model 2 ($p<0.01$).

The ratio of the average after-tax income of those Canadian family units receiving the second highest 20 per cent of all incomes compared to that of the third highest 20 per cent of all incomes (80/60 income ratio) is also found to have a statistically significant negative relationship with voter turnout ($p<0.01$) in Model 2. The ratio comparing the third highest 20 per cent of all incomes compared to that of the lowest 20 per cent of all incomes (60/20 income ratio), and the second lowest 20 per cent to the lowest 20 per cent (40/20 income ratio) are also found to have a statistically significant relationship with voter turnout in Model 2, but this relationship is positive ($p<0.05$); none of the other income ratios are found to be statistically significant in Model 2. Further, as with the Gini coefficient, in none of the models controlling for time does income inequality have a statistically significant causal relationship with voter turnout.

As with the Canadian federal general elections data, this evidence suggests that the apparent relationship between income inequality and voter turnout at the provincial level for Canadian provincial general elections (1976-2011) is caused by a more fundamental factor. I explore this further in the Discussion. Next, I turn to an investigation of this relationship at the national level for a selection of late-modern capitalist democracies.

C. National General Elections in Late-modern Capitalist Democracies

The analyses and discussion thus far are based on provincial voter turnout at Canadian federal and provincial general elections (1976-2011). In this section, I analyse the relationship between income inequality and voter turnout at national general elections in twenty-one late-modern capitalist democracies over a similar time period (1980-2013). As demonstrated by Esping-Andersen (1990), and many researchers to follow, these twenty-one democracies vary in their approaches to supporting social citizenship. I seek to determine if these variations, as represented by income inequality levels, directly impact national voter turnout levels.

a. Model.

Sample. In constructing the sample for my national level analyses, I first identify those nations that generally are considered to have held continuous democratic elections for national political office since the mid-twentieth century. Given that a strict definition of continuous democratic elections for national political office since this time would render a very small sample of little utility for statistical analyses, I include some nations that are generally considered older capitalist democracies despite their periodic, and in some cases on-going, non-democratic practices. For example, women were excluded

from voting in Switzerland before 1971, in Greece prior to 1956, and in Belgium in 1948 (Pintor & Gratschew, 2004). Racial, religious, and political exclusions are less well documented though also present. For example, in Canada, Chinese and Indo Canadians were not granted the federal franchise until 1947, Japanese Canadians not until 1948, Status First Nations not until 1960, conscientious objectors not until 1955 (e.g. Doukhobors), and the Communist Party of Canada was banned in 1940 (Communist Party of Canada, 1982; Elections Canada, 2007; Therborn, 1977). In the USA, African Americans were not substantively granted the franchise in the South until approximately 1970 (Therborn, 1977). One must also consider nations, such as Canada, whose heads of state and/or upper houses are not democratically elected. Even if deemed largely ceremonial, these positions nonetheless place limits on democratically elected members of parliament. Despite the presence of these practices among some nations in this list, the following eighteen nations are generally considered to have held continuous democratic elections since the end of World War II: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, New Zealand, Netherlands, Norway, Sweden, Switzerland, the United Kingdom, and the United States of America. To this sample I add Greece, Portugal, and Spain, as these are also relatively older democracies that are frequently cited in a meta-analysis of Esping-Andersen's typology of welfare states (**Appendix B**). This brings my sample size to twenty-one nations. As with the previous analyses, the time period selected for this national-level analysis (1980-2013) is selected given the focus on declining voter turnout in late-modern capitalist democracies.

Variables.

Dependent variable. In this section, the dependent variable is the proportion of the voting age population who cast a ballot during national parliamentary elections. Recall that the difference between voter turnout based on the voting age population and that based on the population of registered voters can be quite significant. For example, the difference between the average voter turnout for American parliamentary elections (1980-2013) based on these two measures is 16.2 percentage points; and for Australian parliamentary elections this difference is 11.9 percentage points (IDEA, 2013). Indeed, for the most recent election, Australia claims the highest voter turnout when measured as the proportion of registered voters who caste a ballot (93.2%, 2013), but just the fourth highest turnout when it is measured as a proportion of the voting age population (79.7%, 2013). At the other end of the spectrum, the difference between the average voter turnout for Japanese parliamentary elections over this time period, based on these two measures, is just 0.6 percentage points (IDEA, 2013). These differences may be indicative of variation in registration processes, which may impact voter turnout (e.g., whether registration is the responsibility of the government or the individual, availability of election day registration, and the presence of absence of literacy tests and poll taxes) (Brady, 2004; Geys, 2006; Nagler, 1992; Piven & Cloward, 1988). Further, voter registration is not always equally distributed across society; rather, wealthier individuals tend to register in higher proportion than do lower-income individuals (Jaime-Castillo, 2009). Also, given that registration is voluntary in many jurisdictions, non-registration may be a political choice (Geys, 2006). I made the decision to use voter turnout based on the voting age population given the differences in voter registration processes across the

nations included in the sample, and given that this is the preferred measure in the literature (Finseraas, 2007; Geys, 2006; Jaime-Castillo, 2009; Scruggs & Stockemer, 2009). Voter turnout data were obtained from the International Institute for Democracy and Electoral Assistance (IDEA) voter turnout database, as is common in the literature (Finseraas, 2007; Jaime-Castillo, 2009; Scruggs & Stockemer, 2009).

Independent variables. As with the analyses of Canadian data, the primary independent variable is income inequality, as measured by the Gini coefficient (at the national level). Income inequality data were gathered from the Organisation for Economic Cooperation and Development (OECD) StatExtracts database. The same three control variables as used in the Canadian models are also included in these national models, so as to maintain comparability (**Appendix C**):

- lack of election competitiveness (percentage point gap between popular vote for first and second place parties);
- electoral area size (average population size represented by each Member of Parliament); and
- population mobility (net migration rate).

These data were primarily obtained from Dieter Nohlen's elections data handbook series, as well as the United Nations and World Bank world development indicators databases.

Estimation. In general, this national general elections panel data set is well organized. These cross-sectional time-series data consist of 21 nations (*n*), seven time periods (*t*), and 98 observations; the same nations are observed for each time period. However, as with the provincial general elections dataset, this set is slightly unbalanced as not all observations are available for each country, for each time period. As with the

previous analyses, estimation using panel data captures differences both over time and between the nations, enables a greater sample size, and therein increases statistical power.

Model specifications. As with the Canadian federal and provincial general elections datasets, I develop four regression models to analyse the effects of national income inequality on national voter turnout during national general parliamentary elections held between 1980 and 2013: two fixed-effects regression models and two random-effects regression models (one set controlling for time and the other not). Also, as with the previous analyses, I address the autocorrelation identified through the Wooldrige test and the Cumby-Huizinga test for autocorrelation. Model 1 is a fixed-effects regression model:

$$\text{Voter Turnout}_{nt} = (b_0 + u_n) + b_1\text{income inequality}_{nt} + b_2\text{lack of election competitiveness}_{nt} + b_3\text{electoral area size}_{nt} + b_4\text{population mobility}_{nt} + v_{nt}$$

(where the intercept varies across provinces)

Model 2 is a random-effects regression model:

$$\text{Voter Turnout}_{nt} = b_0 + b_1\text{income inequality}_{nt} + b_2\text{lack of election competitiveness}_{nt} + b_3\text{electoral area size}_{nt} + b_4\text{population mobility}_{nt} + (u_n + v_{nt})$$

(where the intercept is constant)

Model 3 is a fixed-effects regression model that includes time as a series of independent dummy variables, for each of the seven time periods:

$$\text{Voter Turnout}_{nt} = (b_0 + u_n) + b_1\text{income inequality}_{nt} + b_2\text{lack of election competitiveness}_{nt} + b_3\text{electoral area size}_{nt} + b_4\text{population mobility}_{nt} + u_1t_1 + u_2t_2 + u_3t_3 + u_4t_4 + u_5t_5 + u_6t_6 + u_7t_7 + v_{pt}$$

(where u_1-u_7 are parameter estimates of time dummy variables t_1-t_7 and the intercept varies across provinces)

Model 4 is a random-effects regression model that also includes time as a series of independent dummy variables:

Voter Turnout$_{nt}$ = b_0 + $b_1$income inequality$_{nt}$ + $b_2$lack of election competitiveness$_{nt}$ + $b_3$electoral area size$_{nt}$ + $b_4$population mobility$_{nt}$ + u_1t_1 + u_2t_2 + u_3t_3 + u_4t_4 + u_5t_5 + u_6t_6 + u_7t_7 + (u_n + v_{nt})

(where u_1-u_7 are parameter estimates of time dummy variables t_1-t_7 and the intercept is constant)

As with the previous Canadian models, I expect all independent variables to have a negative relationship with voter turnout. That is, as national-level income inequality, lack of election competitiveness, and electoral area size each increase voter turnout at parliamentary general elections is expected to decrease.

b. Analysis.

Descriptive statistics.

Voter turnout. The nations with the highest voter turnouts at national parliamentary elections over the observed time period (1980-2013) are those with enforced, or recently enforced, compulsory voting requirements (e.g., Australia, Belgium, Greece, and Italy) (IDEA 2013); the social democracies tend to also have higher voter turnouts (e.g., Denmark, Sweden, and Norway). In contrast, the liberal democracies tend to have lower voter turnouts relative to the other nations (e.g., Switzerland, the United States, and Canada). The Southern European democracies (e.g., Portugal, Spain, and Greece) seem to have the greatest change in voter turnout over this time period;

conservative democracies seem also to have experienced a large range in voter turnout (e.g., Italy, France, Austria, and Germany). Average voter turnout in Canada (60.0%) is lower than the sample average (71.9%); while Canada's voter turnout range (14.6%) is slightly above average (14.2%). The average voter turnout across the sample consistently declined in each successive time period, from a high of 77.9% (1980-1984) to a low of 66.3% (2010-2013). Voter turnout at national general parliamentary elections for the sample nations is summarized, below (**Table 6**).

Income inequality. Regarding income inequality a clearer pattern emerges. In general, the social democracies have lower average income inequality over this time period (1980-2013), followed by the conservative democracies, with the liberal democracies and Southern European democracies reporting higher income inequality. Canada's average income inequality over this time period (0.305) is greater than the overall average for the sample (0.297), but its range is equal to the average (0.032). These findings seem to coincide with initial analyses of the voter turnout data. That is, generally: the liberal democracies tend to have lower voter turnout and higher income inequality; social democracies tend to have higher voter turnout and lower income inequality; and the conservative democracies are somewhere in the middle (particularly those that do not enforce voting). A summary of the Gini coefficients for the sample nations and time periods is included (**Table 6**).

Additional descriptive statistics for the variables in this dataset – including alternative measures of income inequality – are detailed in **Appendix F**.

Table 6: Voter Turnout and Income Inequality (Gini Coefficient) during National General Elections, Late Modern Capitalist Democracies (1980-2013)									
	1980-1984	1985-1989	1990-1994	1995-1999	2000-2004	2005-2009	2010-2013	Average	Range
Country	**Australia**								
Voter Turnout	83.1%	84.1%	82.8%	82.6%	83.3%	82.4%	80.3%	82.7%	3.8%
Inequality (Gini)				0.309	0.316	0.336	0.334	0.324	0.027
Country	**Austria**								
Voter Turnout	86.9%	87.1%	78.3%	75.6%	77.5%	74.4%	69.3%	78.4%	17.8%
Inequality (Gini)					0.268	0.264	0.267	0.266	0.004
Country	**Belgium**								
Voter Turnout	94.3%	86.4%	85.1%	83.2%	86.0%	86.0%	93.3%	87.7%	11.1%
Inequality (Gini)					0.270	0.265	0.262	0.266	0.008
Country	**Canada**								
Voter Turnout	66.2%	68.3%	63.9%	57.1%	55.0%	56.0%	53.8%	60.0%	14.6%
Inequality (Gini)	0.298	0.288	0.289	0.301	0.318	0.319	0.320	0.305	0.032
Country	**Denmark**								
Voter Turnout	86.2%	84.3%	81.1%	83.1%	84.3%	82.3%	81.8%	83.3%	5.1%
Inequality (Gini)		0.223	0.222	0.221	0.227	0.239	0.252	0.231	0.031
Country	**Finland**								
Voter Turnout	81.1%	77.3%	71.9%	68.2%	70.0%	68.2%	70.1%	72.4%	12.9%
Inequality (Gini)		0.209		0.218	0.251	0.257	0.260	0.239	0.051
Country	**France**								
Voter Turnout	63.9%	64.0%	61.3%	59.9%	47.3%	43.4%	46.1%	55.1%	20.6%
Inequality (Gini)				0.279	0.285	0.292	0.303	0.290	0.024
Country	**Germany**								
Voter Turnout	81.4%	75.0%	72.7%	75.3%	73.5%	68.3%	66.0%	73.2%	15.4%
Inequality (Gini)		0.251	0.262	0.261	0.276	0.288	0.286	0.271	0.037
Country	**Greece**								
Voter Turnout	84.5%	86.6%	85.6%	83.9%	88.3%	79.4%	69.4%	82.5%	19.0%
Inequality (Gini)		0.345	0.345	0.354	0.330	0.334	0.337	0.341	0.024
Country	**Ireland**								
Voter Turnout	77.6%	74.6%	73.7%	67.4%	67.0%	68.9%	63.8%	70.4%	13.8%
Inequality (Gini)					0.314	0.310		0.312	0.004
Country	**Italy**								
Voter Turnout	91.8%	94.4%	91.6%	87.4%	84.9%	80.6%	68.3%	85.6%	26.1%
Inequality (Gini)	0.287		0.275	0.326	0.325	0.314	0.319	0.308	0.051
Country	**Japan**								
Voter Turnout	71.2%	71.5%	70.6%	60.3%	59.0%	68.0%	59.7%	65.7%	12.5%
Inequality (Gini)		0.304		0.323	0.329	0.333		0.322	0.029
Country	**Netherlands**								
Voter Turnout	82.8%	81.1%	75.2%	70.1%	77.2%	77.5%	71.1%	76.4%	12.6%
Inequality (Gini)		0.272	0.292	0.297	0.292	0.286	0.288	0.288	0.025
Country	**New Zealand**								
Voter Turnout	88.2%	81.4%	79.1%	79.6%	72.5%	78.5%	69.8%	78.4%	18.3%
Inequality (Gini)		0.271	0.318	0.335	0.337	0.324		0.317	0.066
Country	**Norway**								
Voter Turnout	82.3%	82.6%	74.5%	76.8%	73.5%	75.6%	77.9%	77.6%	9.1%
Inequality (Gini)		0.222		0.243	0.269	0.248	0.249	0.246	0.047
Country	**Portugal**								
Voter Turnout	82.7%	78.9%	77.7%	74.2%	68.6%	67.7%	56.9%	72.4%	25.7%
Inequality (Gini)					0.378	0.359	0.344	0.360	0.034
Country	**Spain**								
Voter Turnout	83.1%	72.5%	77.4%	80.6%	75.0%	69.9%	63.3%	74.5%	19.9%
Inequality (Gini)					0.330	0.320	0.338	0.329	0.018
Country	**Sweden**								
Voter Turnout	88.6%	84.5%	82.6%	77.7%	78.0%	80.6%	82.6%	82.1%	10.9%
Inequality (Gini)	0.198		0.209	0.211	0.239	0.264	0.269	0.232	0.071
Country	**Switzerland**								
Voter Turnout	40.8%	39.9%	39.7%	35.3%	37.3%	39.8%	40.0%	39.0%	5.5%
Inequality (Gini)						0.298		0.298	0.000
Country	**United Kingdom**								
Voter Turnout	71.7%	75.2%	75.4%	69.4%	57.6%	58.3%	61.1%	66.9%	17.8%
Inequality (Gini)		0.309	0.346	0.340	0.339	0.340	0.341	0.336	0.037
Country	**United States**								
Voter Turnout	48.5%	43.3%	43.5%	41.9%	46.1%	47.4%	46.5%	45.3%	6.6%
Inequality (Gini)	0.337	0.342	0.356	0.360	0.365	0.380	0.380	0.360	0.044
Average Voter Turnout	77.9%	75.9%	73.5%	70.9%	69.6%	69.2%	66.2%	71.9%	14.2%
Average Inequality (Gini)	0.280	0.276	0.291	0.292	0.303	0.303	0.303	0.297	0.031

Sources:
Voter Turnout: International Institute for Democracy and Electoral Assistance (IDEA). 2013.
Inequality (Gini): Organization for Economic Co-operation and Development (OECD). 2013.
Note: Voter turnout data refer to national general elections for the single chamber in unicameral parliaments and the lower chamber in bicameral parliaments; it does not cover the upper chamber of bicameral parliaments. Inequality data refer to the Gini index (after taxes) for the total population. Where data were available for more than one year during the time period, an average of the available data was utilised.

Regression results. The cross-sectional time-series estimates of the determinants of national parliamentary election voter turnout (1980-2013), at the national level, are summarized below (**Table 7**). As per the estimation described earlier, and the previous analyses regarding the Canadian data, four regression models are presented: fixed-effects, random-effects, fixed effects controlling for time, and random-effects controlling for time. Autocorrelation is controlled for in each of the models, as both the Wooldridge ($p<0.000$) and the Cumby-Huizinga ($p<0.000$) tests for autocorrelation indicate that the error terms seem to be correlated between time periods. Stata 12.1 is the statistical software used to calculate these results.

Model 1: Fixed-effects regression. The first fixed-effects regression model does not fit the data well ($F=0.95$, $p=0.441$, $R^2=0.067$) (**Table 7**). Indeed, the F-test for a fixed group effect is only significant at the $p<0.05$ level, The estimated autocorrelation coefficient for this model is relatively high at 0.5680. None of the variables in this model are statistically significant.

Model 2: Random-effects regression. The random-effects regression model seems to fit the data better ($F=17.44$, $p<0.01$), but still has a very low R^2 (0.117). Its autocorrelation coefficient is also (0.568) (**Table 7**). Income inequality is found to have a statistically significant negative relationship with voter turnout ($p<0.01$) and is the only statistically significant variable in the model. For every one-percentage point increase in income inequality, voter turnout is predicted to decrease 0.92 percentage points, according to this model.

Model 3: Fixed-effects regression controlling for time. When time is added to the fixed-effects model it seems to fit the data better (F=5.58, p<0.0000) (**Table 7**). The R^2 increases dramatically to 0.5428. The autocorrelation coefficient remains high at 0.4147. Time is the only statistically significant variable in this model.

Model 4: Random-effects regression controlling for time. As with the previous model, once time is added to the random-effects model the F-score improves (F=37.54, p<0.0001), as does the R^2 (0.3427); the autocorrelation coefficient is static at 0.4147 (**Table 7**). Aside from time, electoral area size is the only other statistically significant variable (p<0.05). This model predicts that for every 100,000 person increase in the electoral area size voter turnout will decrease 3.04 percentage points.

Table 7: Cross-sectional Time-series Estimates of the Determinants of Voter Turnout for National General Elections in Late-modern Capitalist Democracies (1980-2013)

Variable	Model 1	Model 2	Model 3	Model 4
Income Inequality (Gini)	0.685	-0.919**	-0.183	-0.233
	(0.583)	(0.339)	(0.579)	(0.374)
Lack of Election Competitiveness	0.080	-0.068	-0.072	-0.117
	(0.119)	(0.095)	(0.109)	(0.096)
Electoral Area Size	5.78e-07	-2.95e-07	1.16e-06	-3.04e-07*
	(7.83e-07)	(1.59e-07)	(6.42e-07)	(1.52e-07)
Population Mobility	-0.474	-0.204	-0.784	-0.361
	(0.638)	(0.473)	(0.600)	(0.509)
Intercept (baseline)	0.411***	1.020***	0.106	0.884***
	(0.077)	(0.098)	(0.101)	(0.105)
Year1 (referent)			Referent	Referent
Year2 (dummy)			0.381**	-0.010
			(0.103)	(0.028)
Year3 (dummy)			0.498**	-0.025
			(0.152)	(0.029)
Year4 (dummy)			0.506**	-0.055
			(0.177)	(0.029)
Year5 (dummy)			0.510*	-0.065*
			(0.193)	(0.031)
Year6 (dummy)			0.513*	-0.073*
			(0.199)	(0.031)
Year7 (dummy)			0.485*	-0.097**
			(0.101)	(0.031)
Model (F-test, Wald)	0.95	17.44**	5.58***	37.54***
R2	0.067	0.117	0.543	0.343
rho_ar	0.568	0.568	0.415	0.415
N	77	98	77	98
Statistical significance: * <0.05, ** <0.01, * <0.001 (Standard errors in parentheses)**				

c. Findings.

Comparing models. Income inequality has a statistically significant negative relationship with voter turnout in only one of the models – Model 2, random-effects regression not controlling for time ($p<0.01$). According to this model, for every one percentage point increase in income inequality, voter turnout is predicted to decrease 0.9 percentage points, which is slightly lower than predicted in the models based on Canadian general elections data (for Canadian federal and provincial general elections voter turnout seemed to drop between 1.1 and 1.7 percentage points for every one percentage point increase in income inequality).

Once time is added to the national models the relationship between income inequality and voter turnout remains negative, but is no longer statistically significant. This suggests that the apparent relationship between income inequality and voter turnout is spurious. Aside from time, the only other variable with a statistically significant relationship with voter turnout is electoral area size in Model 4, random-effects regression controlling for time ($p<0.05$).

These findings are somewhat consistent with those based on Canadian data. Across the three datasets (Canadian federal general elections data, Canadian provincial general elections data, and national parliamentary general elections data), five of the six models without time found a statistically significant relationship between income inequality and voter turnout ($p<0.05$); in one of these models, the relationship was positive though there is evidence to suggest that this model did not fit the data well. When time was added to the models, the statistically significant relationship between income inequality and voter turnout disappeared – this was the case across all three data

sets. The similarity among these models regarding the relationship between income inequality and voter turnout across Canadian federal and provincial general elections data, as well as national parliamentary elections data supports the robustness of these findings.

Electoral area size has a statistically significant negative relationship with voter turnout across all three datasets, as expected. Indeed, this relationship is statistically significant in Model 4 (random-effects controlling for time) across all three data sets ($p<0.05$). It is also significant in Model 1 ($p<0.05$) based on Canadian federal general elections and Model 2 ($p<0.01$) based on Canadian provincial general elections. Across the Canadian models, for each 10,000 person increase in the electoral area size voter turnout is predicted to decrease between 1.05 and 2.15 percentage points, and for the national models each 100,000 person increase is predicted to decrease voter turnout by 3.05 percentage points.

As anticipated, lack of election competitiveness has a statistically significant negative relationship with voter turnout for all four federal elections models ($p<0.01$) – for every one percentage point increase in lack of election competitiveness, these models predict that voter turnout will decrease between 0.09 and 0.14 percentage points; this relationship is not statistically significant in any of the models based on the other two data sets.

Similarly, population mobility is found to have the expected statistically significant negative relationship with voter turnout in two of the federal elections models – Model 1 (fixed-effects not controlling for time) and Model 4 (random-effects controlling for time) ($p<0.05$) – but none of the models based on the other data sets. For

each one-percentage point increase in population mobility, voter turnout is anticipated to decrease between 0.98 and 2.02 percentage points holding the other variables constant.

Across both Canadian and international models income inequality has a negative relationship with voter turnout – as income inequality increases, voter turnout declines. The impact of income inequality on voter turnout seems slightly greater in the Canadian data. This relationship disappears across all three datasets once time is added to the model. This suggests that some other factors may cause the apparent relationship between income inequality and voter turnout.

Other income inequality measures. As with the Canadian data, these four models were repeated using alternative measures of income inequality. These consisted of three interdecile income proportion ratios (P90/P10, P90/P50, and P50/P10), one interdecile income share ratio (S90/S10), and one interquintile income share ratio (S80/S20) (**Appendix F**). The P90/P10 ratio is the ratio of the upper bound value of the ninth decile (the 10 per cent of people with highest income) to that of the upper bound value of the first decile. The P90/P50 ratio is the ratio of the upper bound value of the ninth decile to the median income. The P50/P10 ratio is the ratio of median income to the upper bound value of the first decile. The S80/S20 ratio is the share of all income received by the top quintile divided by the share of the first, or the ratio of the average income of the top quintile to that of the first. The S90/S10 ratio is the share of all income received by the top decile divided by the share of the first, or the ratio of the average income of the top decile to that of the first.

Income inequality is found to have a statistically significant ($p<0.05$) negative relationship with voter turnout for only two of these measures (S80/S20 and S90/S10,

both for Model 2); and a positive statistically significant relationship ($p<0.01$) for one measure (P90/P50, Model 1). As with the Gini Coefficient, once time is added to the model none of the income inequality measures have a statistically significant relationship with voter turnout. In general, these results mirror those using the Gini Coefficient as the measure of income inequality.

IV. Discussion

A. Study Summary

This study emerged in response to my initial interest in understanding the reasons for the decline in voter turnouts at provincial and federal general elections across Canada. Voter participation rates can be understood as sentinel indicators of democratic health (much like infant mortality rates are expressive short-hands for the state of the health of the population as a whole); as such, examining the factors behind this trend, in Canada, as well as in other late-modern capitalist democracies around the world, is a question of great empirical and policy significance.

My initial approach to this question was through the foundational theories of T.H. Marshall, and, in particular, his thesis regarding the interrelationships between social inequality and political citizenship. More specifically, I asked: *How is T.H. Marshall's understanding of citizenship and social class relevant to declining voter turnout in late-modern capitalist democracies?* In particular, Marshall highlights how the reduction of economic inequality enriches the practice, exercise, and meaning of citizenship. The reduction of income inequality is made possible through state-level income distribution policies (e.g., through public education, health care, housing, and social assistance).

An additional layer of analysis was added through the incorporation of the work of Esping-Andersen (1990). Welfare states take different approaches to providing public programs and services to the citizenry. For example, some may be universal ensuring the inclusion of all members of society; others may be targeted to particular constituents through income or needs testing. Based on these differences, Esping-Andersen argues that generally late-modern capitalist democracies can be classified according to one of three approaches to the provision of public welfare, which in turn, form the basis of liberal, conservative, and social democratic welfare states.

Given the relationship theorised between income inequality and political participation it is possible that these varying approaches may impact not only income inequality but also voter turnout. Explanations regarding the relationship between these two variables include both that income inequality increases political mobilisation and alternatively that it decreases political engagement. Based on the scholarship of T.H. Marshall and Esping-Andersen, as well as preliminary observations, I initially found the latter argument more compelling.

In order to test these theories, I gathered provincial-level voter turnout and income inequality data from across Canada over the last few decades, so as to encompass the changing direction of these two phenomena. Much of these data had not yet been compiled in a central location, making the construction of the data sets alone a significant empirical contribution to the study of voter turnout, in Canada and abroad. Provincial-level voter turnout data at provincial and federal general elections between 1976 and 2011 were gathered from Elections Canada and the provincial electoral agencies. I selected the Gini coefficient as the primary measure of provincial level income inequality

during these election years, but also included other income ratios as measures of income inequality to determine the differential impacts of inequality between varying segments of society, and also to support the robustness of my findings. These data were available from Statistics Canada. I also identified a number of provincial-level control variables theorised to impact aggregate voter turnout: lack of election competitiveness, electoral area size, and population mobility. Lack of election competitiveness was measured as the percentage point difference between the popular vote for the first and second place parties in each province, for each election. Electoral area size was the average population size represented by each Member of Parliament. Population mobility was the proportion of each province's population that had internationally immigrated or inter-provincially migrated to that province, for each election year. The provincial-level data for these variables were gathered from a number of federal organisations and agencies including Elections Canada, the Parliament of Canada, and Statistics Canada, as well as from the provincial electoral agencies. As with income inequality, each of these variables is theorised to have a negative relationship with voter turnout, i.e., as income inequality, lack of election competitiveness, electoral area size, and population mobility increase, voter turnout is anticipated to decrease. I also gathered these voter turnout, income inequality, and control variable data at the national level for national parliamentary elections between 1980 and 2013, for a sample of twenty-one late-modern capitalist democracies identified through an analysis of studies seeking to replicate and improve on Esping-Andersen's welfare state classification analysis. These data were primarily gathered from the International Institute for Democracy and Electoral Assistance (IDEA),

the Organisation for Economic Co-operation and Development (OECD), the World Bank, and Nohlen's elections data handbook series.

I then undertook a regression analysis of the relationship between voter turnout and income inequality at the national and sub-national level. Selecting data at both of these levels allowed a greater breadth of analysis to occur to lend to the validity and robustness of my findings. Further, the cross-sectional time-series regression analysis utilised also increased the statistical power of my analyses, as it increased the size for each of the three samples: Canadian provincial general elections, Canadian federal general elections, and national parliamentary general elections. For each of these three samples, four regression models were developed: fixed-effects regression not controlling for time (Model 1), random-effects regression not controlling for time (Model 2), fixed-effects regression controlling for time (Model 3), and random-effects regression controlling for time (Model 4). The random-effects models are more efficient in that they enable analysis of variation both within and between provinces or countries. However, these models do not control for differences between provinces or countries not identified in the model (e.g., electoral systems); in contrast, the fixed-effects models do control for these differences. Together the findings across these four models across the three samples and across the various measures of income inequality lend to the robustness of my findings. Indeed, there was consistency across these findings. Income inequality, as measured by the Gini coefficient, was found to have a statistically significant negative relationship with voter turnout across all three samples when not controlling for time. However, once time was added to the models the apparent relationship between income

inequality and voter turnout disappeared across all models, in all three datasets, for all measures of income inequality.

B. Interpretation of Findings

My initial findings, which do not control for time, seem to support theories that argue income inequality decreases political engagement. Indeed, this relationship is found at both the national and sub-national level. However my subsequent findings, controlling for time, indicate that there is a more fundamental cause to this apparent relationship between income inequality and voter turnout. That is, although income equality and voter turnout are both generally decreasing in late-modern capitalist democracies, there is likely a more fundamental cause for both of these (as represented by the time variable in Model 3 and Model 4); again, these findings are consistent across both the national and sub-national datasets. Although unexpected, this outcome is nonetheless an important contribution to the sparse literature in this significant and emerging field of research.

What might explain this unexpected finding? Below I explore some possible theoretical and empirical avenues by which we can explain the interrelationship between declining voter turnout and increasing income inequality in late-modern capitalist societies, with a particular focus on how this finding might challenge or elaborate on the seminal ideas of Marshall. For this I return to my literature review and the platform from which I launched into this research – the need to re-visit Marshall's citizenship theory in light of changes to institutional and social arrangements in these societies.

Globalisation, understood as the increase in international integration, has fostered the spread of neo-liberal economic policies (e.g., privatization and deregulation) under

the guise of the need to respond to increased international competition with greater efficiency, i.e., limiting the role of the government in the private market. The implications thus are that, to the extent that a role of the government (via citizenship) is to provide protections from the vagaries and the uncertainties of the market to its citizens, this too is curtailed. The impact of political discourse becoming increasingly subordinate to narrowly defined economic interests is observed in changes to citizenship and the welfare state. These changes include the promotion of (neo) liberal democracy, the commodification of citizenship, and the rise of supranational forms of governance and citizenship. Each of these, discussed below, offer avenues for future research including that regarding declining voter turnout and increasing income inequality in late modern capitalist societies.

a. Promotion of (neo) liberal democracy. In the current global environment, there is a tendency to support the expansion of a liberal capitalist version of democracy, citizenship, and the welfare state. Marshall lamented and sought to draw attention to the beginnings of this "marked shift of emphasis from duties to rights" in his seminal essay on citizenship, many years ago (1950, p.7). Today, there tends to be popular support within the international community for the development of institutions that formally support democracy (e.g., regular, free, and fair elections with universal suffrage) particularly in what were previously less or un-democratic regimes. However, there seems to be less attention paid to fostering participation in political debate (e.g., defining political issues and alternative policy options). Huber, Rueschmeyer, and Stephens (1997) identify this in the expansion of democracy in Latin America though the same could be argued of more recent democratization movements such as the Arab Spring.

> Thus, the political side of current transnational structures of power, while supporting the expansion of formal democracy, has worked against the promotion of participatory and social democracy because it has closed off consideration of alternative social democratic policy, and by closing off alternatives, has made popular mobilization and participation less meaningful.
>
> (Huber et al., 1997, p. 330)

Thus, passive liberal citizenship consisting primarily of rights is promoted, whilst the emphasis on duties tends to be reduced (e.g., to merely voting and paying taxes). Economic decisions impacting the nation state and citizenship are pre-supposed through pressures to adopt neoliberal policies. Therein the space for policy debate and political participation is narrowed. This is somewhat reminiscent of the narrowing of the political through its separation from the economic, and the support this lent to franchise extension during the emergence of modern democracy in contemporary welfare states, discussed earlier (Bowles & Gintis, 1986; Therborn, 1977; Wood, 1995). Thaa (2001) refers to this shift as resulting in 'lean citizenship' – citizenship reduced to its moral and legal dimensions to the neglect of participation and agency; Thaa too links this shift to globalization characterizing it as the 'fading away of the political in transnational democracy'. Reflective of its approach to the market, a primary principle of liberal citizenship and the welfare state is to limit government intervention. Liberal capitalist democracies are typically ill poised to deliver redistributive policies given the weak role of the state: "[s]tructurally, as well as ideologically, liberal states make redistributive polices difficult to enact, implement, and legitimate" (Schuck, 2002, p. 140). As Esping-Andersen described earlier, the role of the welfare state in these societies is generally to

ensure that only those unable to participate in the market receive state assistance. This assistance is minimal so as to prevent moral corruption (e.g., choosing social assistance over market participation through employment). Redistribution is not a focus of liberal social policy, for fear of disruption to the marketplace. This approach takes the tenet that income inequality provides incentive to betterment to an extreme, by lowering or removing the level Marshall spoke of above which all members of a society should exist.

The tendency to support the expansion of liberal democracy and liberal citizenship in our globalizing world, both in existing and new democracies, presents an avenue for research into the potential impacts of this shift on voter turnout and income inequality. Questions include: Is the narrowing, or thinning of the political dimension of citizenship observed? What are indicators of this? Do these have a direct observable impact on voter turnout and/or income inequality? Has there been a shift toward the liberal democratic approach to the provision of social citizenship in formerly conservative and/or social late-modern capitalist democracies? How might this be observed or evidenced? Do late-modern capitalist democracies still cluster into Esping-Andersen's three welfare state regime types? Has there been movement in the classification of nations under this typology? If so, what are the consequences of this? Have the characteristics associated with these regime types changed given the movement toward globalisation?

b. Expanding sphere of consumption. Extending from the premise that political discourse is increasingly subordinate to economic decisions in our globalizing world, the role of citizenship identified by Marshall and Esping-Andersen in supporting market immunity is diminished. Not only is government intervention in the market reduced,

but also simultaneously the market itself is expanded. The expansion of the private market into previously public realms is fostered through an emphasis on market allocation of resources rather than government redistribution. This results in the increasing commodification of what were previously citizenship rights (e.g., security, justice, infrastructure, education, health care, and social assistance) and the supplanting of 'citizens' by 'consumers'. Marshall's distinction between 'real' income (publicly provided e.g., government programs and services) and 'money' income (privately obtained e.g., through the market) offers a way of understanding this shift and its implications: "The unified civilization which makes social inequalities acceptable, and threatens to make them economically functionless, is achieved by a progressive divorce between real and money incomes. […] The advantages obtained by having a larger money income do not disappear, but they are confined to a *limited area of consumption*" (1950, p.47, emphasis added). Whereas Marshall concluded, at that time, that the preservation of economic inequality had been made more difficult by the enrichment of citizenship, today it seems the weakening of citizenship has perhaps facilitated growth of economic inequality. Rather than the sphere of consumption for one's market income becoming progressively minimised, so as to prevent income inequality from becoming disruptive, the opposite has occurred. Neoliberalism simultaneously fosters both the contraction of public programs and services (real income) and the expansion of spheres of private consumption (though not necessarily increases in market income to support this expanding field of consumption). Increases in the cost of post-secondary education in Canada, as well as the proliferation of health care costs not covered by government programs are examples of this. As market relations expand into these domains, education

and health – perhaps previously considered rights of citizens – are increasingly commodified. References to 'students' and 'patients' are replaced with those to 'clients' and 'consumers'. This shift is mirrored in diminishing references to 'citizens' in political discourse. Politicians instead opt for terms more in-line with the liberal citizenship and the economic focus of neoliberalism (e.g., 'tax payer' and 'voter'); terms that tend to exclude vulnerable populations. Further, such discourse suggests the reduction of rights to purchasing power and of duties to merely paying taxes and consuming. It also reduces political debate to merely that which is economic. Increasingly politicians portray their primary role as attracting trade and investment rather than representing and promoting the interests of its citizens. Although, the imperative to create a business friendly environment is often portrayed as in the best interests of citizens, as suggested above this understanding of citizenship may be problematic depending on one's viewpoint.

This movement toward the commodification of citizenship raises potential research questions, such as: How does the proportion of average annual income that is 'real' vs. 'money' compare over time and space (e.g., across welfare state regimes)? Have employment incomes increased with the expanding sphere of consumption? If yes, is this increased income evenly dispersed within sub-national, national, and global populations? Or has this expansion exacerbated stagnant incomes? Does an expanding sphere of consumption expand incentive to betterment in terms of one's social class as evidenced by increased social mobility? Have social outcomes improved in light of increasing commodification of what were previously social rights (e.g., education and health outcomes)? Are there aspects of social citizenship that better resist commodification – perhaps due to citizen resistance and therein the reluctance of

politicians – and how do these relate to voter turnout perhaps amongst various segments of society. For example, public health care, as well as programs and services for seniors seem to have relatively resisted commodification in Canada – why is this?

c. Supranational governance and supranational citizenship. A third characteristic of globalization is the rise of supranational governance and supranational citizenship. Examples of supranational governance include international courts (e.g., the International Court of Justice and the International Criminal Court), transnational political-economic unions (e.g., the European Union, the African Union, and the Union of South American Nations), and the proliferation of international agreements (e.g., trade and the environment). It is argued that this intensification of economic and social activities across borders undermines national autonomy creating a disjuncture between the formal authority and actual capacity of states to manage policy inside national territories (Held 1996). Marshall described the political aspect of citizenship as "the right to participate in the exercise of political power, as a member of a *body invested with political authority* or as an elector of the members of such a body" (1950, p. 8, emphasis added). As the political authority of the invested body diminishes, so too does the political dimension of the citizenship rooted in that authority. The re-creation of old political institutions of the nation-state at a global level has been posed as a solution (e.g., global assemblies of nation-states and global citizenship). Aside from Eurocentric bias of this approach, it has also been argued that the supersession of nation-states by global politics has been overstated (Thaa, 2001; Grugel, 2003). Iceland's recent refusal to re-pay outstanding debts to Britain and the Netherlands is perhaps an example of nation-state resistance to supranational governance. The potential for a transnational

government has also been questioned on the grounds of its ability to offer democratic accountability, representation, and participation (Kymlicka, 1999; Eichenberger & Frey, 2002). Transnational and cosmopolitan democracy compromises the political content of citizenship: "[c]osmopolitan citizens may enjoy a number of fundamental rights. However, they lack voice and agency […] strengthening the existing political communities in the name of political freedom, participation, responsibility, and solidarity is more promising than politically imitating the logic of globalization" (Thaa, 2001, p. 520). Indeed, globalisation has brought with it the movement toward recasting citizenship in more universal terms – a movement away from a particular and political understanding of citizens and their communities (Beck & Willms, 2004; Benhabib, 2006, 2007; Bohman, 2007; Held, 1995, 2004). This movement represents a further narrowing of the political and disenfranchisement of the citizen. For, a universal conception of citizenship lapses into human rights and therein subsumes the political distinctions between citizens and communities that provide the foundation for democratic politics (Mouffe, 2002; Tambakaki, 2009). By eliminating difference, the nodes through which politics are articulated and contested are suffocated and democracy is incapacitated. Contestation is the oxygen of democracy whereas the universal discourse of human rights is impenetrable to criticism (Mouffe, 2002). This is not to support the idea that one must come at the expense of the other, but rather is a criticism of this substitutive approach. Democracy must not be reduced to apolitical discourse – merely a defense of human rights. Rather, in late-modern capitalist democracies there is a need for both global and national citizenship – a need for both human rights, as inherent and universal, and national rights, as dynamic and particular (Tambakaki, 2009). Just as multiple

governance structures operate simultaneously – vertically and horizontally – in our globalizing world, so too may one occupy multiple subject positions simultaneously.

In these ways, the emergence of supranational governance and supranational citizenship may impact voter turnout and income inequality in late-modern capitalist democracies. How might political participation of citizens in supranational governance be fostered? How might the strengthening of existing political communities support this? How might human rights modify market relations given the rise of supranational governance? These are just some research questions that emerge.

The trend of declining voter turnout across late-modern capitalist democracies suggests barriers to political participation beyond the individual level. The sociological approach undertaken in this research has occurred from within a tradition that understands citizenship as bolstering political equality within structural systems that create economic inequality. Although my research initially suggests a negative relationship between voter turnout and income inequality a more fundamental factor or factors seem to be relevant. Overall, my findings suggest further research is required to better understand the relationship between voter turnout and income inequality in late-modern capitalist democracies.

C. Limitations and Further Research Suggestions

A limitation of this study is perhaps the focus on only one form of political participation – voting. Although declining voter turnout in late-modern capitalist democracies is the issue this study sought to understand, voting is not an isolated activity separate from other forms of political participation. Indeed, non-institutional forms of political participation played a constitutive role in the emergence of modern democracy

in these societies, particularly through franchise extensions but also through other democratic reforms. To more fully understand the impact of income inequality on political participation these other forms of political action should be analysed, as well. However, data on other types of participation is often more difficult to gather particularly in a way that allows for historical comparative analysis. Nonetheless, self-reported survey data provides a possible source. The international World Values Survey (2011) includes a reasonable sample of late-modern capitalist democracies that ask respondents to identify one's participation in a petition, boycott, or demonstration in the last five years (three separate questions); the survey also asks respondents to identify if they voted in their country's most recent elections to the national parliament. Statistics Canada includes a nearly identical set of questions in its General Social Survey that includes questions on civic participation (2004, 2010, 2013). Hence, the present study could be repeated using national, sub-national (Canadian provinces), and/or individual level data regarding self-reported political participation. These survey data are not available for as many time periods as are the voter turnout data in this study, which limits the ability to identify trends over time; however, the availability of individual data enables a more sophisticated statistical analysis such as multilevel regression.

A second possible limitation is the use of population wide income inequality measures, which may mask heterogeneity within the population. The various income ratios I used as alternative measures of income inequality to the Gini coefficient somewhat address this. However, certain segments of the population are at increased risk of lower-income (e.g., women, unattached individuals, and in some societies seniors). Overall income inequality rates may mask the extent of income inequality within these

populations. It would be interesting to determine how the income inequality within particular population segments impacts voter turnout. Perhaps it is not population income inequality that is most closely related to voter turnout, but rather the income inequality amongst particular populations. One could expand the present research by comparatively analysing income inequality rates for working-age adults compared to seniors, men compared to women, and/or families compared to unattached individuals. Indeed, the Gini coefficient and income ratios used in this study are available for many of these groups. This speaks to the intersectionality of inequality. That is, how the multiplicity of subject positions one may simultaneously occupy – such as those based in gender, ethnicity, age, ability, and family status, to name but a few – may exacerbate and be exacerbated by income inequality. Gender would be particularly interesting to include given the primary role of women in the provision of welfare within the family (e.g., unpaid carework). Although T.H. Marshall focused on income inequality in his theory of citizenship and social class it would be interesting to investigate how other forms of inequality may impact citizenship and voter turnout.

Lastly, in the present study I focus on declining voter turnout in older capitalist democracies. This has rendered a rather small sample size. Although my interest lays in how the changes to welfare states over the last few decades have impacted citizenship it would nonetheless be interesting to expand this study to include newer capitalist democracies, as well. Perhaps the evidence of declining citizenship I have presented is not a function of democracy age but rather the period of time within which we are now situated. That is, perhaps it is not the experience of increasing inequality or the debasement of citizenship more generally that has been most impactful to political

participation, but rather the absolute level these are now at in many societies. Increasing the sample to include a larger number of nations would also help to strengthen the statistical power of the findings. Similarly, undertaking a greater number of sub-national analyses within the capitalist democracies included in the study presented here or within newer capitalist democracies, as well, would not only help to increase sample size, but would help to uncover any regional variation that is potentially masked at the national level. Indeed, both sub-national and national analyses of the impact of aggregate income-inequality on voter turnout seem to be lacking in the literature.

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Appendix A: International Comparison of Health Outcomes and Expenditures

Increased health expenditures do not necessarily translate into improved health outcomes (**Table 8**). This is particularly evident for the United States, a nation that spends nearly double the amount of its GDP on health than the average of the nations listed, yet has a below average life expectancy, double the infant mortality rate, and nearly triple the maternal mortality ratio compared to these nations.

Table 8: Health Outcomes and Expenditures in Late-modern Capitalist Democracies

Nation	Total Health Expenditure		Health Outcome		
	As Percentage of GDP	Per Capita	Life Expectancy	Infant Mortality Rate	Maternal Mortality Ratio
Australia	9.1%	$6,140	83	4	6
Austria	11.5%	$5,408	81	3	4
Belgium	10.8%	$4,711	80	3	6
Canada	10.9%	$5,741	82	5	11
Denmark	11.2%	$6,304	80	3	5
Finland	9.2%	$4,232	81	2	4
France	11.8%	$4,690	82	3	9
Germany	11.3%	$4,683	81	3	7
Greece	9.3%	$2,044	81	4	5
Ireland	8.1%	$3,709	81	3	9
Italy	9.2%	$3,033	83	3	4
Japan	10.1%	$4,752	84	2	6
Netherlands	12.4%	$5,737	81	3	6
New Zealand	10.3%	$3,292	82	5	8
Norway	9.0%	$9,055	82	2	4
Portugal	9.5%	$1,905	81	3	8
Spain	9.6%	$2,808	82	4	4
Sweden	9.6%	$5,319	82	2	4
Switzerland	11.3%	$8,980	83	4	6
United Kingdom	9.4%	$3,647	81	4	8
United States	17.9%	$8,895	79	6	28
Mean Average	10.5%	$5,004	81.5	3.4	7.2

Source: (WHO 2013) Health expenditures, life expectancy, and infant mortality data pertain to 2012; maternal mortality data pertain to 2013.
Notes: Total health expenditure presented as a percentage of Gross Domestic Product (GDP) and per capita total health expenditure at average exchange rate (US$). Life expectancy is at birth (years) for both sexes. Infant mortality rate indicates the probability of dying between birth and age 1 per 1000 live birts. Maternal mortality ratio indicates the annual number of female deaths from any cause related to or aggravated by pregnancy or its management (excluding accidental or incidental causes) during pregnancy and childbirth or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, per 100 000 live births.

Appendix B: Survey of Alternative Welfare State Typologies

Alternative regime classifications have been posited in response to theoretical and methodological criticisms of Esping-Andersen's welfare state regime classification. These include concerns regarding attention to the role of women in the provision of social welfare, the variables chosen as indicators of social welfare policies, as well as perceived regional omissions, mis-classifications, and methodological concerns. In order to address these, I undertook a meta-analysis of typologies grounded in Esping-Andersen's work (**Table 9**). These studies attempted to incorporate the criticisms of Esping-Andersen's model into alternative and more comprehensive typologies. Nonetheless, these attempts at more comprehensive classification generally supported Esping-Andersen's original typology.

The degree of consensus regarding the classification of each country is summarized, below (**Table 10**). Of the twenty-one countries included in fifteen or more studies that fit the inclusion criteria, three may be classified as 'core' liberal capitalist democracies, i.e., classified or characterized as a liberal democracy in at least two-thirds of the studies, (USA, Australia, and Canada); four countries were classified as liberal capitalist democracies, most of the time (UK, New Zealand, Switzerland, and Japan); and one country was most commonly classified as a liberal capitalist democracy though was classified as something else most of the time (Ireland). Of the twenty-one countries, five may be classified as 'core' conservative capitalist democracies (Austria, France, Italy, Germany, Belgium); one as a conservative capitalist democracy most of the time (Netherlands); four as 'core' social capitalist democracies (Sweden, Norway, Denmark, Finland); two as 'core' southern European capitalist democracies (Greece and Portugal);

and one as a southern European capitalist democracy most of the time (Spain). Regarding the southern European grouping, the only not considered in Esping-Andersen's original (1990) classification scheme, Spain was classified as such 63 per cent of the time but was also somewhat frequently classified as a conservative capitalist democracy (Esping-Andersen, 1999; Fenger, 2007; Powell & Barrientos, 2004; Soede & Vrooman, 2008); the southern European group has also been theorised as a sub-group of the conservative capitalist democracy type (Castles, 2002). Italy, though often theorised as belonging to this group, as well, was actually deemed to not belong in the grouping with Greece, Portugal, and Spain in a number of studies (Navarro & Shi, 2001; Castles, 2002; Kautto, 2002; McMenamin, 2004; Bambra, 2007a). In sum, my findings revealed a general consensus on the classification of many countries in support of Esping-Andersen's original typology even after correcting for its apparent flaws.

This meta-analysis also serves as a useful tool in selecting the nations to include in the sample for my regression analyses. That is, these twenty-one nations are the most frequently included in these studies analysing how capitalist democratic nations group together in terms of their social welfare policies (**Table 11**); less frequently cited nations generally have less developed and long-standing social welfare policies (e.g., newer capitalist democracies such as the Czech Republic, Slovakia, and Hungary) though some may also be less cited due to other reasons such as their smaller population size (e.g., Iceland, Luxembourg, and Malta). Given the focus of my research on the impact of social welfare, as measured by income inequality, on voter turnout in late-modern capitalist democracies these twenty-one nations were selected as the sample to be included in my empirical analyses.

Table 9: Meta-analysis of Welfare State Regime Classification Studies						
Author	**Analysis**	**Typology**				
Esping-Andersen (1990)	*18 countries *decommod-ification *standard deviation from the mean	**Liberal** Australia Canada Ireland New Zealand Switzerland UK USA	**Conservative** Austria Belgium France Germany Italy Japan Netherlands	**Social** Denmark Finland Norway Sweden		
Castles & Mitchell (1992)	*18 countries *aggregate expn., benefit equality, welfare expn., taxes, trade union density, & political non-right incumbency *rank order	**Liberal** Japan Switzerland USA	**Conservative** Austria France Germany Italy Netherlands	**Non-right Hegemony** Belgium Denmark Norway Sweden	**Radical** Australia Finland New Zealand UK	**Radical-Liberal Hybrid** Canada Ireland
Castles & Mitchell (1993)	*18 countries *welfare expenditure, benefit equality, tax system *factor analysis	**Liberal** Japan Switzerland USA	**Conservative** Austria France Italy Netherlands West-Germany	**Social** Belgium Denmark Norway Sweden	**Radical** Australia Finland New Zealand UK	**Radical-Liberal Hybrid** Canada Ireland
Kangas (1994)	*18 countries *health insurance * cluster analysis	**Liberal** Australia New Zealand **Sub-group** Ireland UK	**Corporatist** Austria Germany Italy Japan Netherlands	**Social** Denmark Finland Norway Sweden Switzerland	**Undefined I** Belgium Canada France	**Undefined II** USA
Ragin (1994)	*18 countries *pension systems *cluster analysis	**Liberal** Australia Canada Switzerland USA	**Corporatist** Austria Belgium Finland France Italy	**Social** Denmark Norway Sweden	**Undefined** Germany Ireland Japan Netherlands New Zealand UK	
Siaroff (1994)	*22 countries *family benefits paid to women, female work desirability, family welfare orientation *cluster analysis	**Protestant Liberal** Australia Canada New Zealand UK USA	**Advanced Christian-democratic** Austria Belgium France West-Germany Luxembourg Netherlands	**Protestant Social-democratic** Denmark Finland Norway Sweden	**Late Female Mobilization** Greece Ireland Italy Japan Portugal Spain Switzerland	
Ferrera (1996)	*12 countries *old-age, invalidity, & unemployment benefits; poverty; public debt & deficit; tax revenues; fertility; public attitudes *rank order				**South European/ Latin/Mediterranean** Greece Italy Portugal Spain	**Other** Belgium Denmark France Germany Ireland Luxembourg Netherlands UK
Shalev (1996)	*18 countries *pension policy indicators *factor analysis	**Liberal** Canada Japan Switzerland USA	**Conservative** Austria Belgium France Ireland Italy	**Social** Denmark Finland Norway Sweden	**Undefined** Australia Germany Netherlands New Zealand UK	

Continued - Table 9: Late-modern Capitalist Democracy Typologies						
Bonoli (1997)	*16 countries *social expenditures (insurance & assistance) *scatter plot	**Unnamed** Ireland UK	**Continental** Belgium France Germany Luxembourg Netherlands	**Nordic** Denmark Finland Norway Sweden	**Southern European** Greece Italy Portugal Spain Switzerland	
Korpi & Palme (1998)	*18 countries *social insurance *rank order & scatter plot	**Basic Security** Canada Denmark Ireland Netherlands New Zealand Switzerland UK USA	**Corporatist** Austria Belgium France Germany Italy Japan	**Encompassing** Finland Norway Sweden	**Targeted** Australia	
Obinger & Wagschal (1998)	*18 countries *Esping-Andersen's original data *cluster analysis	**Liberal** Canada Japan Switzerland USA	**Conservative** Austria France Italy	**Social** Denmark Norway Sweden	**Radical** Australia New Zealand	**European** Belgium Germany Finland Ireland Netherlands UK
Esping-Andersen (1999)	*20 countries *labour regulation, decommodification, & familialism *OLS & logistic regression analysis	**Low Regulation/ Residual/** **Non-familialist** Australia Canada New Zealand USA	**Strong Regulation/ Social Insurance/** **Familialist** Austria Belgium France Germany Italy Spain	**Medium Regulation/Universalist/Non-Familialist** Finland Netherlands Norway Sweden	**Undefined** Denmark Ireland Japan Portugal Switzerland UK	
Kilkey & Bradshaw (1999)	*15 countries *defamilisation, i.e. employment rate, poverty rate, & tax/benefit systems for lone mothers *model-families-matrix	**Group 6** Australia Canada UK	**Group 2** France Germany	**Group 1** Belgium Denmark Finland Luxembourg Norway Sweden	**Group 3** Austria USA	**Group 4** Ireland **Group 5** Netherlands
Meyers, Gornick, & Ross (1999)	*14 countries *12 indicators of employment support for mothers *multiple regression analysis	**Liberal** Australia UK USA	**Conservative** Canada Germany Italy Netherlands Norway	**Social** Belgium Denmark Finland France Sweden		
Korpi (2000)	*18 countries *gender policy institutions *rank order	**Market-oriented Support** Australia Canada Ireland New Zealand Switzerland UK USA	**General Family Support** Austria Belgium France Germany Italy Japan Netherlands	**Dual-earner Support** Denmark Finland Norway Sweden		
Navarro & Shi (2001)	*18 countries *political, social, & economic measures *rank order	**Liberal Anglo-Saxon** Canada Ireland UK USA	**Christian** Belgium France Germany Italy Netherlands Switzerland	**Social** Austria Denmark Finland Norway Sweden	**Conservative/ Former Fascist** Greece Portugal Spain	

Continued - Table 9: Late-modern Capitalist Democracy Typologies						
Wildeboer Schut, Vrooman, & de Beer (2001)	*11 countries *58 chrctrstcs. Of labour market, tax regime, & social protectn system *principal component analysis	**Liberal** Australia Canada UK USA	**Conservative** Belgium France Germany	**Social** Denmark Norway Sweden	**Undefined** Netherlands	
Castles (2002)	*21 countries *social expenditure *rank order	**Poverty Alleviation** Australia Canada Ireland New Zealand UK USA	**Social Security** Austria Belgium France Germany Italy Netherlands	**States Services** Denmark Finland Norway Sweden	**Social Security Sub-variant (Southern European)** Greece Portugal Spain	**Between Poverty Alleviation & Social Security** Japan Switzerland
Kautto (2002)	*15 countries *social expenditures *boxplot & scatterplot analysis		**Transfer Approach** Austria Belgium Italy Netherlands	**Service Approach** Denmark Finland France Germany Norway Sweden UK	**Low Service & Transfer Approach** Greece Ireland Portugal Spain	
Orloff (2002)	*18 countries *gendered labour force participation, marginal job attachment, attitudes toward women's employment	**Market-orntd Support** Australia Canada Japan New Zealand Switzerland UK USA	**Gen. Family Support** Austria Belgium France Germany Ireland Italy Netherlands	**Dual-earner Support** Denmark Finland Norway Sweden		
Van Voorhis (2002)	*18 countries *decommodification *rank based on z-score	**Liberal** Australia Canada Italy Japan New Zealand USA	**Conservative** Austria Finland France Germany Ireland UK	**Social** Belgium Denmark Netherlands Norway Sweden Switzerland		
Saint-Arnaud & Bernard (2003)	*20 countries *36 indicators of social situations, public policies, & political participation *cluster analysis	**Liberal** Australia Canada Iceland Ireland New Zealand UK USA	**Conservative** Austria Belgium France Germany Netherlands	**Social** Denmark Finland Norway Sweden	**Southern** Greece Italy Portugal Spain	
Bambra (2004a)	*18 countries *defamil-isation *standard deviation from the mean	**Low Defamilisation** Australia Japan New Zealand USA	**Medium Defamilisation** Austria Belgium Canada France Germany Ireland Italy Netherlands Switzerland UK	**High De-familisation** Denmark Finland Norway Sweden Sweden		

Continued - Table 9: Late-modern Capitalist Democracy Typologies						
Bambra (2004b)	*18 countries *decommodification *standard deviation from the mean	**Low Decom-modification** Australia Ireland Japan New Zealand UK USA	**Medium Deco-mmodification** Austria Belgium Canada Denmark France Germany Italy Netherlands Switzerland	**High Decom-modification** Finland Norway Sweden		
McMenamin (2004)	*22 countries *62 political, social, & economic indicators *cluster analysis	**Liberal** Australia Canada Switzerland USA	**Continental** Belgium Netherlands Italy France UK	**Unnamed** Austria Denmark Finland Germany Norway Sweden	**Mediterra-nean** Greece Ireland Portugal Spain	**East-Central European** Czech Re Hungary Poland
Powell & Barrientos (2004)	*21 countries *social spending & active labour market policies *cluster analysis	**Liberal** Australia Canada Ireland Japan Switzerland UK USA	**Conservative** Austria Belgium Germany Greece Italy New Zealand Portugal Spain	**Social** Denmark Finland France Netherlands Norway Sweden		
Soede et al. (2004)	*23 countries *85 charac-teristics of social security system *principal component analysis	**Liberal** Australia Canada Ireland UK USA	**Conservative** Austria Belgium France Germany Luxembourg	**Social** Denmark Finland Sweden	**Mediterranean** Greece Italy Portugal Spain	**New Member (btn Liberal &Mdttrnn)** Czech Re Hungary Poland Slovakia **Hybrid** Nether-lands Norway
Bambra (2005a)	*18 countries *health care decommodification *standard deviation from the mean	**Low Decom-modification** Australia USA	**Medium Deco-mmodification** Austria Belgium France Germany Ireland Italy Japan Netherlands Switzerland	**High Decom-modification** Canada Denmark Finland New Zealnd Norway Sweden UK		
Bambra (2005b)	*18 countries *health care decmmdfctn (HCD) & orig. decmmdfctn (EAD) *standard deviation	**Both Low Decom-modification** Australia Japan USA	**Avg. HCD** **/Avg. EAD** Austria Belgium Canada Denmark France Italy	**Both High Decommodific ation** Finland Norway Sweden	**Higher HCD** **/Lower EAD** Ireland New Zealand UK	**Lower HCD** **/Higher EAD** Germany Netherlands Switzerland
Hockstra (2005)	*12 countries *housing *cluster analysis				**Southern European** Greece Italy Portugal Spain	**Other** Austria Belgium Denmark Finland France Ireland Netherlands UK

Continued - Table 9: Late-modern Capitalist Democracy Typologies						
Bambra (2007a)	*21 countries *defamil-isation *cluster analysis (hierarchical & K-means)	**Anglo-Saxon/Liberal** Australia USA **Liberal Sub-group** Canada Finland UK	**Continental/ Conservative** Austria Belgium France Germany Netherlands New Zealand Portugal Switzerland **Conservative Sub-group** Italy Japan	**Social/Nordic** Norway Sweden	**Undefined** Denmark Ireland Greece Spain	
Fenger (2007)	*30 countries *18 indicators (e.g. social spending, female labour force partptn., public attitudes) *cluster analysis	**Liberal** New Zealand UK USA	**Conservative-corporatist** Austria Belgium France Germany Greece Italy Netherlands Spain	**Social** Denmark Finland Norway Sweden	**Former-USSR** Belarus Estonia Latvia Lithuania Russia Ukraine	**Post-communist European** Bulgaria Croatia Czech Re Hungary Poland Slovakia **Developing Welfare States** Georgia Romania Moldova
Lee & Ku (2007)	*20 countries *15 indicators (e.g. social expenditure, gender wage lag, pensions) *factor & cluster analysis	**Liberal** Australia Canada Netherlands Switzerland UK USA	**Corporatist** Austria France Germany Italy Japan	**Social** Belgium Denmark Finland Norway Sweden	**East Asian** South Korea Taiwan	**Undefined** Ireland New Zealand
Soede & Vroomanm (2008)	*23 countries *34 pension system characteristics *categorical principal components analysis	**Liberal** Canada Ireland UK USA	**Corporatist** Austria Finland France Germany Greece Italy Luxembourg Portugal Spain	**Mandatory Private** Australia Denmark Hungary Netherlands Poland Sweden	**Modest Pensions** Belgium Czceh Rep. Norway Slovakia	
Draxler & Van Vliet (2010)	*25 countries *social expenditure *cluster analysis				**Old EU Member States** Austria Belgium Cyprus Denmark Finland France Germany Ireland Luxembourg Netherlands Sweden UK	**New EU Member States** Czech Rep. Malta Estonia Poland Greece Portugal Hungary Slovakia Italy Slovenia Latvia Spain Lithuania

Note: Inclusion criteria are: full-text peer reviewed journal article, book or portion thereof, comparative (i.e. at least 10 nations) quantitative analysis, and a concluding regime clustering (as opposed to multiple sets using multiple dimensions (e.g. Hicks & Kenworthy 2003; Jenson 2008; Scruggs & Allan 2006, 2008)).
McMenamin (2004) focused on testing distinctiveness of East-Central European cluster composed of Czech Republic, Hungary, and Poland amongst 19 other OECD countries. Author did not present a definitive conclusion regarding the appropriate number of clusters. Did conclude the following the East-Central European cases: 1) constitute a distinctive cluster; 2) have much in common with Greece, Iberia, and Ireland; and 3) are closer to the continental European rather than liberal variety of capitalist democracy.

Table 10: Welfare State Regime Classification			
Liberal	**Conservative**	**Social**	**Southern European**
USA (94%)	Austria (84%)	Sweden (97%)	Greece (67%)
Australia (76%)	France (81%)	Norway (94%)	Portugal (67%)
Canada (73%)	Italy (76%)	Denmark (78%)	Spain (63%)
UK (56%)	Germany (74%)	Finland (74%)	
New Zealand (54%)	Belgium (67%)		
Switzerland (52%)	Netherlands (53%)		
Japan (50%)			
Ireland (36%)			

Note: This table lists all twenty-one countries included in fifteen or more studies that fit the inclusion criteria described in this appendix. In total, thirty-six studies analyzing forty-three countries were identified. Dark shading indicates a core country, i.e. classified as belong to the regime type, or a regime type with similar characteristics, that it is listed under, in at least two-thirds of the studies. Medium shading indicates classification as such most of the time, whereas light shading indicates merely the most common classification. Percentage scores indicate the proportion of studies including that country, which classified it as such.

Table 11: Inclusion Rate of Countries Identified in Welfare State Classification Meta-analysis					
Country	**Inclusion (%)**	**Inclusion (n)**	**Country**	**Inclusion (%)**	**Inclusion (n)**
Australia	81	29	Latvia	6	2
Austria	89	32	Lithuania	6	2
Belarus	3	1	Luxembourg	19	7
Belgium	100	36	Malta	3	1
Bulgaria	3	1	Moldova	3	1
Canada	83	30	Netherlands	100	36
Croatia	3	1	New Zealand	67	24
Cyprus	3	1	Norway	92	33
Czech Rep.	14	5	Poland	14	5
Denmark	100	36	Portugal	42	15
Estonia	6	2	Romania	3	1
Finland	94	34	Russia	3	1
France	100	36	Slovakia	11	4
Georgia	3	1	Slovenia	3	1
Germany	97	35	South Korea	3	1
Greece	42	15	Spain	44	16
Hungary	14	5	Sweden	94	34
Iceland	3	1	Switzerland	69	25
Ireland	92	33	Taiwan	3	1
Italy	94	34	Ukraine	3	1
Japan	61	22	UK	100	36
			USA	86	31

Note: Inclusion (%) refers to proportion of thirty-six studies that included it in its analysis. Inclusion (n) refers to the number of studies out of a possible thirty-six, which included the country in its analysis.

Appendix C: Model Variables Meta-analysis

In order to identify appropriate control variables for my regression analyses, I reviewed an analysis of variables identified by the International Institute for Democracy and Electoral Assistance (IDEA) as frequently cited in explanations of voter turnout (Pintor & Gratschew, 2004). I also undertook a literature scan to identify empirical studies that included regression analysis of the impact of income inequality on aggregate level voter turnout (Galbraith & Hale, 2008; Geys, 2006; Goodin & Dryden, 1980; Jaime-Castillo, 2009; Lister, 2007; Mahler, 2002; Merrifield, 1993; Oliver, 2001; Rosenstone, 1982; Rubinson & Quinlan, 1977; Scruggs & Stockemer, 2009; Solt, 2008).

The IDEA identified nine variables frequently cited in explanations of voter turnout, they then undertook a regression analysis of voter turnout in 233 national elections from 1945 to 2002 to determine their relevance; a summary of these findings follows (**Table 12**). The literature scan identified twelve studies that included regression analysis of the impact of income inequality on aggregate level voter turnout. These studies revealed a great deal of variation in the control variables utilised and included over thirty different variables across the models; those control variables cited by more than one study are included in the summary (**Table 12**).

Having reviewed the findings of these studies, I selected the following three variables for inclusion in my regression analyses: population to representative ratio, election competitiveness, and population stability (each of these are marked with an asterisk in **Table 12**). These variables were selected, as they were the only found to have evidence of a statistically significant effect on voter turnout and to vary between the Canadian provinces. That is, although age of democracy, electoral system, concentration

of government power, compulsory voting, election day on day of rest, and voter registration were found to impact voter turnout, these variables do not differ between the Canadian provinces, so would not be of benefit to include in these analyses. Further, as a result of the relatively small sample sizes I am working with I am limited in the number of variables I am able to include in my models. The fixed-effects models that I run will control for differences between the provinces, as well. Given the desire to use the same regression model for both my national and sub-national analyses, the same three controls were used for both levels of analyses. In interpreting my national level findings, I am mindful of differences across the sample nations regarding these other statistically significant variables.

Table 12: Control Variable Identification (* indicates selected for inclusion in present study)		
Variable	**Proposed Relationship with Voter Turnout**	**Finding**
Age of Democracy	The longer a jurisdiction has held free elections the higher its voter turnout will be, as socialization into a democratic political system will be increased.	Yes, this proposed relationship is found to be statistically significant – voter turnout is almost 10 percentage points higher in democracies exceeding a generation compared to newer democracies (Pintor & Gratschew, 2004).
Electoral System	Proportional representation electoral systems will have higher voter turnout than other systems, as fewer votes are 'wasted'.	Yes, this proposed relationship is found to be statistically significant – proportional representation can raise turnout by nearly 9 percentage points (Pintor & Gratschew, 2004; Geys, 2006).
Concentration of Government Power	The more concentrated is government power (e.g., unicameral vs. bicameral system, unitary vs. federal) the more potentially impactful elections are – jurisdictions with greater concentration of government power will have higher voter turnout.	Yes, this proposed relationship is found to be statistically significant – voter turnout seems to be lower in bicameral systems (Rubinson & Quinlan, 1977; Merrifield, 1993; Lister, 2007; Scruggs & Stockemer, 2009), but concurrent elections seem to increase voter turnout (e.g., voting for President and House of Representatives on same election day) (Geys, 2006; Rosenstone, 1982).
Compulsory Voting	Jurisdictions that enforce compulsory voting will have higher voter turnout than those that do not (given this increased incentive).	Yes, this proposed relationship is found to be statistically significant – compulsory voting tends to increase voter turnout by about 5 percentage points (Pintor & Gratschew, 2004; Geys, 2006; Lister, 2007; Scruggs & Stockemer, 2009; Solt, 2008;).
Election Day on Day of Rest	Jurisdictions that hold elections on days of rest (generally, Saturday, Sunday, or a public holiday) will have higher voter turnout than those that do not, as the population will have more free-time to vote.	Yes, this proposed relationship is found to be statistically significant – calling elections on a rest day increases turnout by about 4 percentage points (Pintor & Gratschew, 2004).
Voter Registration	Voter turnout will be higher in nations where registrations is easier, as there are fewer obstacles to voting (e.g., automatic registration, election day registration, absence of literacy tests and poll taxes).	Yes, this relationship is found to be statistically significant – easing voter registrations seems to result in higher voter turnouts (Geys, 2006; Mahler, 2002).
Election Competitiveness*	Elections that are more competitive (e.g., have a smaller difference between the popular vote for the top two parties) will have higher voter turnout, as voting will potentially feel more impactful to the electorate.	One meta-analysis found ample support for this relationship (Geys 2006); however, another study found the opposite (Jamie-Castillo, 2009) and yet another no statistically significant relationship (Scruggs & Stockemer, 2009).

Continued - Table 12: Control Variable Identification		
Population to Representative Ratio*	Those jurisdictions with a lower number of people represented by each member of parliament will have a higher voter turnout than those with higher ratios, as a smaller ratio strengthens accountability.	This relationship is found to be statistically significant, but in the opposite direction – increasing the ratio by 10,000 people increases voter turnout by just under 1 percentage point (Pintor & Gratschew, 2004). However, a meta-analysis found that population size tends to have a negative statistically significant effect on voter turnout, i.e., as jurisdiction population size increases voter turnout decreases (Geys, 2006).
Foreign Population/ Population Stability*	Those jurisdictions with a higher proportion of the population born elsewhere will have a lower voter turnout, as these newer citizens may lack: feelings of identification and group solidarity; awareness of parties, candidates, and political issues; and may feel less impacted by electoral outcomes (e.g., if only staying in the jurisdiction temporarily).	Although the relationship between foreign population and voter turnout was not found to be statistically significant by IDEA (Pintor & Gratschew, 2004), there was somewhat strong evidence to suggest that population stability has a statistically significant effect on voter turnout, i.e., that less stable populations have lower voter turnout (Geys, 2006).
GDP per Capita	Citizens who are materially better off are more likely to vote, as they have a greater stake in society – those jurisdictions with a higher GDP per capita have more citizens who are better off.	No, the relationship between GDP per Capita and voter turnout was not found to be statistically significant (Pintor & Gratschew, 2004; Lister, 2007; Scruggs & Stockemer, 2009; Solt, 2008).
Employment in Non-agricultural sectors	Employment in non-agricultural sectors is an indicator of the education and urbanization of a population. Educated citizens are more likely to have a greater awareness of parties, candidates, and the importance of elections in a democracy and are more likely to be urbanised likely providing easier access to polling stations – those jurisdictions with higher employment in non-agricultural sectors will have higher voter turnout.	No, the relationship between employment in non-agricultural sectors and voter turnout was not found to be statistically significant (Pintor & Gratschew, 2004).
Government Expenditures as a Proportion of GDP	There is variation in the extent to which public dollars finance programs and services (e.g., for health care, education, and social assistance). Generally, the more a country taxes the more substantive are the programs and services it can provide. Higher taxes and greater benefits increase the incentive for citizens to vote – whether to keep benefits high or to cut taxes. That is, those jurisdictions with a higher proportion of GDP publicly expended with have a higher voter turnout.	No, the relationship between public expenditures as a proportion of GDP and voter turnout was not found to be statistically significant (Pintor & Gratschew, 2004).

Appendix D: Canadian Federal General Elections – Additional Descriptive Statistics and Income Inequality Variables

This section includes a discussion of additional descriptive statistics (control variables, alternative income inequality measures, and summary statistics for all model variables) followed by the regression results of provincial-level determinants of voter turnout at Canadian federal general elections using additional income inequality measures. In general, these regression results reflect those in the main body of this dissertation.

Additional Descriptive Statistics

Control variables. The provincial-level observations for each of the control variables during each federal general election year (1976-2011) are detailed below (**Table 13**), along with the provincial average and range for each. As with voter turnout and income inequality, national level observations are also included for comparative purposes, but were not included in the statistical analyses.

At the provincial level, on average, federal general elections seem most competitive in Nova Scotia with the difference between the popular vote for the first and second place parties averaging just 8.7 percentage points during federal elections between 1976 and 2011; at the national level this difference averages 13.6 percentage points. Other provinces with relatively competitive federal general elections over this time period include British Columbia (11.2 percentage points difference), New Brunswick (11.6 percentage point difference), and Prince Edward Island (11.6 percentage point difference). These elections seem least competitive in Alberta where the average difference is 42.0 percentage points; Quebec (20.6 percentage points) and Ontario (14.9 percentage points) also average less competitive elections than is the case nationally

(13.6 percentage points). At a glance, these results seem to at least somewhat support the theory that less competitive elections lower voter turnout. For example, Alberta reports the second lowest average voter turnout (62.4 per cent) during federal general elections (1976-2011) whereas Prince Edward Island (75.9 per cent) and New Brunswick (69.9 per cent) report the highest (**Table 1**).

Table 13: Lack of Election Competitiveness, Electoral Area Size, and Population Mobility during Federal General Elections, Canada and the Provinces (1976 -2011)

Federal General Election	Lack of Election Competitiveness										
	CAN	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL
1979	4.2%	12.4%	43.5%	5.5%	10.7%	5.4%	45.6%	4.6%	9.9%	12.3%	10.8%
1980	21.4%	6.2%	42.7%	2.6%	4.2%	6.4%	55.6%	17.7%	1.1%	0.5%	11.0%
1984	22.4%	11.6%	54.7%	3.3%	15.9%	17.8%	14.8%	21.7%	17.1%	11.0%	21.2%
1988	11.1%	1.7%	34.3%	7.8%	0.3%	0.7%	22.4%	4.9%	5.6%	8.4%	2.8%
1993	22.1%	7.7%	27.2%	4.9%	22.6%	32.8%	16.3%	28.1%	28.5%	28.1%	40.7%
1997	19.1%	14.3%	30.6%	5.1%	10.6%	30.4%	1.2%	2.1%	0.4%	6.5%	1.1%
2000	15.3%	21.7%	38.0%	21.5%	2.1%	27.9%	4.3%	11.2%	7.4%	8.6%	10.4%
2004	7.1%	7.7%	39.7%	14.6%	5.9%	13.2%	15.0%	13.5%	11.3%	21.8%	15.7%
2006	6.0%	8.8%	49.7%	24.9%	16.8%	4.8%	17.5%	3.4%	7.3%	19.2%	0.1%
2008	11.4%	18.4%	52.0%	28.3%	24.9%	5.4%	14.3%	6.9%	0.9%	11.5%	13.1%
2011	9.0%	13.1%	50.0%	24.0%	27.7%	18.8%	19.5%	14.0%	6.4%	0.2%	5.3%
Average	13.6%	11.2%	42.0%	13.0%	12.9%	14.9%	20.6%	11.6%	8.7%	11.6%	12.0%
Range	18.6%	20.0%	27.5%	25.7%	27.4%	32.1%	54.4%	26.0%	28.1%	27.9%	40.6%

Source: Parliament of Canada, 2012

Federal General Election	Electoral Area Size										
	CAN	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL
1979	85,821	95,187	99,856	68,553	74,091	91,180	86,213	70,316	77,218	30,721	81,439
1980	86,935	98,066	104,335	69,111	73,888	92,063	86,747	70,622	77,514	30,934	81,823
1984	90,805	105,256	113,996	72,473	76,558	96,500	88,416	72,049	79,770	31,641	82,866
1988	90,819	97,336	94,485	73,445	78,725	99,380	91,161	73,035	81,565	32,322	82,140
1993	97,236	111,493	102,588	71,921	79,830	107,980	95,420	74,881	83,993	33,044	82,854
1997	99,355	116,135	108,840	72,707	81,152	109,006	96,995	75,251	84,764	34,024	78,702
2000	101,946	118,801	115,546	71,969	81,951	113,430	98,093	75,052	84,893	34,118	75,424
2004	103,703	115,421	115,695	71,246	83,826	116,892	100,479	74,937	85,398	34,419	73,921
2006	105,766	117,877	122,188	70,866	84,574	119,484	101,754	74,567	85,274	34,480	72,902
2008	108,174	121,786	128,293	72,413	86,121	122,005	103,340	74,691	85,225	34,887	72,336
2011	111,961	127,127	134,931	75,557	89,406	126,097	106,373	75,534	86,223	36,424	73,271
Average	98,411	111,317	112,796	71,842	80,920	108,547	95,908	73,721	82,894	33,365	77,971
Range	26,140	31,940	40,446	7,005	15,518	34,917	20,160	5,218	9,006	5,703	10,530

Sources: Elections Canada, 2004; Statistics Canada, 2013 (CANSIM Table 051-0001)

Federal General Election	Population Mobility										
	CAN	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL
1979	2.1%	3.9%	5.6%	2.5%	2.5%	1.7%	0.7%	2.2%	2.3%	2.8%	1.7%
1980	2.1%	3.8%	5.8%	2.6%	2.6%	1.5%	0.6%	2.0%	2.3%	2.6%	1.7%
1984	1.4%	1.8%	2.2%	1.8%	1.9%	1.4%	0.6%	1.6%	2.1%	2.4%	1.1%
1988	1.9%	3.0%	3.0%	1.6%	1.9%	1.9%	0.8%	2.0%	2.3%	2.7%	1.8%
1993	1.8%	3.5%	2.6%	1.9%	1.8%	1.7%	0.8%	1.5%	2.0%	2.1%	1.3%
1997	1.7%	2.3%	3.5%	2.0%	1.6%	1.6%	0.7%	1.5%	2.0%	2.0%	1.4%
2000	1.7%	2.1%	2.7%	1.5%	1.5%	1.9%	0.8%	1.5%	1.8%	2.0%	1.5%
2004	1.7%	2.3%	3.1%	1.6%	1.7%	1.5%	0.9%	1.5%	1.8%	2.1%	1.7%
2006	1.7%	2.3%	3.4%	2.2%	2.0%	1.4%	0.8%	1.7%	1.9%	2.3%	1.7%
2008	1.6%	2.1%	2.8%	2.4%	2.1%	1.3%	0.9%	1.8%	1.9%	3.0%	2.1%
2011	1.7%	1.8%	3.3%	3.2%	2.3%	1.3%	1.0%	1.7%	1.9%	2.9%	2.0%
Average	1.7%	2.6%	3.4%	2.1%	2.0%	1.6%	0.8%	1.7%	2.0%	2.5%	1.6%
Range	0.7%	2.1%	3.6%	1.8%	1.1%	0.7%	0.4%	0.7%	0.6%	1.1%	1.1%

Source: Statistics Canada, 2013 (CANSIM Tables 051-0001, 051-0011, and 051-0012)

Alberta also averages the largest population represented by each MP (112,796) during federal general elections over this time period (1976-2011). British Columbia (111,317) and Ontario (108,547) are also above the national average (98,411). Prince Edward Island reports the smallest average population represented by each MP (33,365). Again, this seems to somewhat support the theory that the larger the population represented by each MP the lower voter turnout will be, as Alberta has the second lowest average voter turnout at federal general elections during this time period (62.4 per cent) and Prince Edward Island the highest (75.9 per cent), though British Columbia (67.9 per cent) and Ontario (67.4 per cent) average voter turnouts are more mid-range compared to the other provinces (fifth and sixth highest average voter turnout, respectively) (**Table 1**).

Alberta also experiences the greatest population mobility, on average, during federal general election years over this time period (1976-2011) with an average of 3.4 per cent of the population having interprovincially in migrated or internationally immigrated; nationally this average is 1.7 per cent. In contrast, Quebec experiences the lowest population mobility (0.8 per cent). This seems to somewhat support the expected relationship between this variable and voter turnout, i.e., that jurisdictions with higher population mobility will have lower voter turnout and vice versa. However, British Columbia (2.6 per cent), Prince Edward Island (2.5 per cent), Saskatchewan (2.1 per cent), Manitoba (2.0 per cent), and Nova Scotia (2.0 per cent) also experience greater on average population mobility during federal general election years over this time period than is the case nationally (1.7 per cent) yet many of these provinces report higher average voter turnouts than is the case nationally. Overall, Alberta seems to be an outlier, or at least at the far range, of many of the variables in this model.

Additional income inequality variables. The four regression models were repeated using thirteen measures of income inequality in addition to the Gini coefficient used in the models presented in the body of this report. These thirteen additional measures of income inequality included ten interquintile income ratios and three high-income ratios. A summary of these measures of income inequality is presented below (**Table 14**).

Income inequality during federal general election years generally increases in all provinces over this time period. Prince Edward Island consistently reports the lowest average income inequality during federal general elections years over this time period except for the 80/60 and 40/20 inter-quintile share ratios and the bottom 99% share of income ratio for which Prince Edward Island reports the second lowest average income inequality. British Columbia most frequently has the highest average income inequality during federal general elections over this time period, i.e., for the Gini coefficient and for each of the 100/20, 100/40, 100/60, 80/20, 80/40, 60/20, 60/40, and the 40/20 inter-quintile share ratios. Ontario has the highest average income inequality for the 100/80 inter-quintile share ratio, Saskatchewan the highest for the 80/60 inter-quintile share ratio, and Alberta the highest for each of the bottom 99 per cent, 95 per cent, and 90 per cent share of income. This suggests that both British Columbia and Alberta have high levels of income inequality, and that, in particular, a large proportion of Alberta income is concentrated amongst a small proportion of the population. Indeed, whereas at the national level the bottom 99 per cent of income earners receive on average 90.6 per cent of the income in Canada (during federal general election years over this time period), in Alberta they receive 85.8 per cent on average. In 2011, this proportion was 90.0 per cent

at the national level compared to just 83.4 per cent in Alberta. The concentration of high-income earners has increased significantly in Alberta over this time period – with a range of 13.5 percentage points among the bottom 99 per cent share of income (compared to 5.3 percentage points nationally) and a range of 17.3 percentage points among the bottom 95 per cent (compared to 6.5 percentage points nationally).

The 100/20 Interquintile Share Ratio is the ratio of the average after-tax income of those Canadian family units receiving the highest 20 per cent of all incomes compared to that of the lowest 20 per cent of all incomes. In 2011, this ratio was 9.232 (Statistics Canada, 2013). That is, the average after-tax income of those Canadian family units receiving the lowest 20 per cent of all incomes was $15,100 while the average for the highest 20 per cent was $139,400 or 9.2 times higher. Calculated annually by Statistics Canada, this is the fourth highest it has been since 1976; these four highest ratios have all occurred since 2000.

The 100/40 Interquintile Share Ratio is the ratio of the average after-tax income of those Canadian family units receiving the highest 20 per cent of all incomes compared to that of the second lowest 20 per cent of all incomes. In 2011, this ratio was 4.174 (Statistics Canada, 2013). That is, the average after-tax income of those Canadian family units receiving the second lowest 20 per cent of all incomes was $33,400 while the average for the highest 20 per cent was $139,400 or 4.2 times higher. Calculated annually by Statistics Canada, this is the highest it has been since 1976; this ratio reached four for the first time in 1998.

The 100/60 Interquintile Share Ratio is the ratio of the average after-tax income of those Canadian family units receiving the highest 20 per cent of all incomes compared to that of the middle (second highest/second lowest) 20 per cent of all incomes. In 2011, this ratio was 2.723 (Statistics Canada, 2013). That is, the average after-tax income of those Canadian family units receiving the middle 20 per cent of all incomes was $51,200 while the average for the highest 20 per cent was $139,400 or 2.7 times higher. Calculated annually by Statistics Canada, this is the second highest it has been since 1976; the highest ratio was one year earlier, in 2010, when it was 2.730.

Table 14: Various Measures of Income Inequality during Federal General Elections, Canada and the Provinces (1976-2011)											
Federal General Election	100/20 Inter-quintile Share Ratio										
	CAN	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL
1979	7.962	8.636	7.895	8.949	8.593	7.711	7.814	6.818	7.459	7.555	6.662
1980	8.052	9.203	8.780	8.077	8.617	7.616	7.566	6.798	7.200	7.788	7.496
1984	7.774	7.767	8.402	8.395	7.473	7.507	7.803	7.224	7.163	7.847	6.248
1988	7.315	7.027	7.486	7.198	6.950	7.259	7.091	6.211	6.887	6.035	5.688
1993	7.541	8.095	7.962	7.504	6.891	7.517	6.976	6.794	6.481	5.942	6.567
1997	8.408	9.121	8.845	6.854	7.061	8.514	7.833	7.227	7.156	6.126	6.411
2000	9.441	12.670	9.029	8.227	7.493	9.607	8.105	7.695	8.106	7.318	7.563
2004	9.188	10.752	9.500	8.908	7.730	9.523	7.826	7.765	8.488	6.814	7.800
2006	9.168	10.155	9.161	9.613	8.148	9.333	7.920	8.008	8.704	6.945	7.851
2008	9.059	9.958	8.039	8.753	7.873	9.298	8.092	8.177	8.163	6.987	8.420
2011	9.232	10.263	9.489	7.875	7.785	9.556	8.168	7.409	7.705	7.183	8.098
Average	8.467	9.423	8.599	8.214	7.692	8.495	7.745	7.284	7.592	6.958	7.164
Range	2.126	5.643	2.014	2.759	1.726	2.348	1.192	1.966	2.223	1.904	2.731
Federal General Election			100/40 Inter-quintile Share Ratio								
	CAN	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL
1979	3.394	3.525	3.380	3.807	3.518	3.259	3.383	3.249	3.370	3.418	3.179
1980	3.393	3.465	3.729	3.646	3.615	3.214	3.331	3.121	3.249	3.508	3.365
1984	3.541	3.689	3.533	3.700	3.447	3.429	3.552	3.473	3.527	3.363	3.169
1988	3.513	3.455	3.485	3.558	3.463	3.443	3.480	3.219	3.368	3.162	3.031
1993	3.647	3.764	3.632	3.555	3.392	3.648	3.502	3.357	3.352	3.059	3.183
1997	3.907	4.023	3.855	3.467	3.627	3.865	3.768	3.510	3.607	3.144	3.193
2000	4.092	4.099	3.997	3.680	3.788	4.109	3.865	3.703	3.864	3.645	3.796
2004	4.130	4.119	4.059	3.989	3.759	4.254	3.803	3.839	3.708	3.327	3.721
2006	4.097	4.226	4.050	4.242	3.857	4.045	3.808	3.784	3.765	3.403	3.704
2008	4.162	4.332	3.923	4.103	3.691	4.193	3.881	3.603	3.867	3.427	4.152
2011	4.174	4.417	4.383	3.926	3.727	4.084	3.880	3.729	3.763	3.940	4.203
Average	3.823	3.919	3.821	3.789	3.626	3.777	3.659	3.508	3.585	3.400	3.518
Range	0.781	0.963	1.003	0.775	0.464	1.041	0.550	0.718	0.618	0.881	1.171
Federal General Election	100/60 Inter-quintile Share Ratio										
	CAN	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL
1979	2.197	2.228	2.236	2.401	2.222	2.118	2.196	2.098	2.193	2.248	2.102
1980	2.184	2.223	2.345	2.253	2.318	2.094	2.117	2.088	2.143	2.252	2.260
1984	2.288	2.353	2.270	2.390	2.240	2.263	2.251	2.235	2.270	2.205	2.219
1988	2.307	2.236	2.238	2.381	2.311	2.291	2.250	2.162	2.171	2.203	2.052
1993	2.382	2.356	2.310	2.360	2.250	2.398	2.294	2.189	2.232	2.113	2.128
1997	2.520	2.519	2.491	2.339	2.324	2.516	2.453	2.281	2.372	2.159	2.184
2000	2.664	2.605	2.556	2.448	2.432	2.689	2.551	2.444	2.499	2.529	2.534
2004	2.698	2.641	2.567	2.504	2.489	2.718	2.578	2.494	2.481	2.325	2.462
2006	2.665	2.663	2.595	2.667	2.571	2.635	2.536	2.495	2.524	2.310	2.499
2008	2.702	2.701	2.603	2.642	2.493	2.688	2.629	2.432	2.545	2.304	2.676
2011	2.723	2.752	2.832	2.571	2.505	2.663	2.601	2.519	2.456	2.635	2.844
Average	2.485	2.480	2.458	2.451	2.378	2.461	2.405	2.313	2.353	2.298	2.360
Range	0.538	0.529	0.596	0.413	0.349	0.624	0.512	0.431	0.402	0.523	0.792
Federal General Election	100/80 Inter-quintile Share Ratio										
	CAN	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL
1979	1.590	1.580	1.615	1.675	1.566	1.562	1.605	1.573	1.583	1.583	1.525
1980	1.601	1.620	1.698	1.630	1.633	1.575	1.557	1.558	1.593	1.547	1.571
1984	1.641	1.653	1.612	1.665	1.587	1.648	1.611	1.587	1.618	1.547	1.614
1988	1.643	1.599	1.616	1.643	1.644	1.642	1.611	1.567	1.558	1.593	1.510
1993	1.661	1.650	1.605	1.632	1.575	1.674	1.622	1.576	1.603	1.553	1.553
1997	1.729	1.701	1.755	1.635	1.631	1.730	1.691	1.614	1.660	1.563	1.559
2000	1.822	1.742	1.808	1.679	1.684	1.850	1.766	1.719	1.710	1.747	1.729
2004	1.835	1.782	1.752	1.733	1.738	1.865	1.818	1.728	1.706	1.669	1.714
2006	1.823	1.780	1.802	1.769	1.785	1.828	1.777	1.757	1.761	1.668	1.762
2008	1.843	1.829	1.828	1.753	1.767	1.878	1.780	1.693	1.792	1.653	1.781
2011	1.837	1.806	1.920	1.717	1.725	1.821	1.794	1.742	1.684	1.779	1.868
Average	1.730	1.704	1.728	1.685	1.667	1.734	1.694	1.647	1.661	1.627	1.653
Range	0.253	0.249	0.316	0.138	0.219	0.316	0.262	0.199	0.234	0.232	0.357

Continued - Table 14: Various Measures of Income Inequality during Federal General Elections, Canada and the Provinces (1976-2011)											
Federal General Election	80/20 Inter-quintile Share Ratio										
	CAN	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL
1979	5.008	5.465	4.888	5.342	5.487	4.937	4.868	4.333	4.713	4.773	4.368
1980	5.030	5.680	5.170	4.954	5.275	4.836	4.860	4.364	4.520	5.034	4.772
1984	4.737	4.699	5.213	5.042	4.710	4.554	4.844	4.552	4.426	5.072	3.872
1988	4.452	4.395	4.634	4.382	4.229	4.422	4.402	3.965	4.421	3.789	3.766
1993	4.541	4.905	4.962	4.598	4.375	4.490	4.301	4.310	4.044	3.827	4.228
1997	4.864	5.362	5.039	4.192	4.328	4.920	4.632	4.479	4.311	3.919	4.113
2000	5.181	7.273	4.993	4.899	4.449	5.193	4.589	4.477	4.740	4.189	4.375
2004	5.007	6.035	5.424	5.142	4.447	5.106	4.304	4.492	4.975	4.083	4.552
2006	5.028	5.705	5.083	5.435	4.563	5.105	4.457	4.558	4.944	4.164	4.455
2008	4.915	5.444	4.397	4.993	4.456	4.950	4.546	4.831	4.556	4.226	4.727
2011	5.026	5.684	4.941	4.585	4.513	5.248	4.552	4.253	4.575	4.037	4.335
Average	4.890	5.513	4.977	4.870	4.621	4.887	4.578	4.419	4.566	4.283	4.324
Range	0.729	2.878	1.027	1.243	1.258	0.827	0.567	0.866	0.931	1.283	1.006
Federal General Election	80/40 Inter-quintile Share Ratio										
	CAN	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL
1979	2.135	2.231	2.093	2.273	2.246	2.086	2.107	2.065	2.130	2.160	2.084
1980	2.119	2.138	2.196	2.236	2.213	2.040	2.140	2.004	2.040	2.267	2.142
1984	2.158	2.232	2.192	2.222	2.173	2.080	2.205	2.188	2.179	2.174	1.964
1988	2.138	2.161	2.157	2.166	2.107	2.097	2.160	2.055	2.162	1.985	2.007
1993	2.196	2.280	2.263	2.178	2.154	2.179	2.159	2.129	2.092	1.970	2.050
1997	2.260	2.365	2.196	2.121	2.224	2.234	2.228	2.176	2.174	2.011	2.048
2000	2.246	2.353	2.210	2.192	2.249	2.221	2.188	2.154	2.260	2.087	2.196
2004	2.251	2.312	2.318	2.302	2.162	2.281	2.092	2.221	2.173	1.993	2.172
2006	2.247	2.374	2.247	2.399	2.160	2.212	2.143	2.154	2.138	2.040	2.102
2008	2.258	2.369	2.146	2.341	2.089	2.232	2.180	2.129	2.158	2.073	2.331
2011	2.272	2.447	2.283	2.286	2.161	2.243	2.163	2.141	2.234	2.214	2.250
Average	2.207	2.297	2.209	2.247	2.176	2.173	2.160	2.129	2.158	2.089	2.122
Range	0.153	0.308	0.225	0.278	0.160	0.241	0.136	0.217	0.220	0.297	0.367
Federal General Election	80/60 Inter-quintile Share Ratio										
	CAN	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL
1979	1.382	1.410	1.384	1.433	1.419	1.356	1.368	1.333	1.386	1.420	1.378
1980	1.364	1.372	1.381	1.382	1.419	1.330	1.360	1.340	1.345	1.456	1.439
1984	1.394	1.424	1.409	1.435	1.412	1.373	1.397	1.408	1.403	1.425	1.375
1988	1.404	1.398	1.385	1.449	1.406	1.395	1.397	1.380	1.393	1.383	1.358
1993	1.435	1.427	1.440	1.446	1.429	1.433	1.414	1.389	1.393	1.361	1.370
1997	1.458	1.481	1.419	1.430	1.425	1.454	1.451	1.414	1.429	1.381	1.401
2000	1.462	1.495	1.413	1.458	1.444	1.454	1.444	1.422	1.461	1.448	1.466
2004	1.470	1.483	1.465	1.445	1.432	1.457	1.418	1.443	1.454	1.393	1.437
2006	1.461	1.496	1.440	1.508	1.440	1.441	1.427	1.420	1.434	1.385	1.418
2008	1.466	1.476	1.424	1.507	1.411	1.431	1.477	1.437	1.420	1.394	1.502
2011	1.482	1.524	1.475	1.497	1.452	1.463	1.450	1.446	1.459	1.481	1.522
Average	1.434	1.453	1.421	1.454	1.426	1.417	1.418	1.403	1.416	1.411	1.424
Range	0.118	0.152	0.094	0.126	0.046	0.133	0.117	0.113	0.116	0.120	0.164
Federal General Election	60/20 Inter-quintile Share Ratio										
	CAN	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL
1979	3.624	3.876	3.531	3.726	3.867	3.641	3.558	3.250	3.402	3.361	3.169
1980	3.687	4.141	3.745	3.585	3.717	3.637	3.574	3.256	3.360	3.458	3.317
1984	3.398	3.301	3.701	3.513	3.336	3.318	3.467	3.232	3.155	3.559	2.816
1988	3.171	3.143	3.345	3.023	3.007	3.169	3.152	2.873	3.173	2.739	2.773
1993	3.165	3.437	3.446	3.179	3.063	3.134	3.041	3.103	2.904	2.813	3.087
1997	3.336	3.621	3.550	2.931	3.038	3.384	3.193	3.168	3.016	2.837	2.935
2000	3.543	4.864	3.532	3.361	3.081	3.572	3.177	3.148	3.244	2.894	2.984
2004	3.406	4.071	3.701	3.558	3.106	3.503	3.036	3.114	3.421	2.931	3.168
2006	3.441	3.814	3.530	3.605	3.169	3.542	3.123	3.209	3.448	3.007	3.142
2008	3.353	3.688	3.088	3.313	3.158	3.460	3.078	3.362	3.207	3.032	3.147
2011	3.391	3.729	3.351	3.063	3.108	3.588	3.140	2.942	3.137	2.726	2.848
Average	3.410	3.789	3.502	3.351	3.241	3.450	3.231	3.151	3.224	3.032	3.035
Range	0.521	1.721	0.656	0.796	0.860	0.507	0.537	0.488	0.544	0.833	0.544

Continued - Table 14: Various Measures of Income Inequality during Federal General Elections, Canada and the Provinces (1976-2011)											
Federal General Election	60/40 Inter-quintile Share Ratio										
	CAN	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL
1979	1.545	1.582	1.512	1.585	1.583	1.539	1.540	1.549	1.537	1.521	1.512
1980	1.553	1.559	1.590	1.618	1.559	1.535	1.573	1.495	1.516	1.557	1.489
1984	1.548	1.568	1.556	1.548	1.539	1.515	1.578	1.554	1.553	1.525	1.428
1988	1.523	1.545	1.557	1.494	1.498	1.503	1.546	1.489	1.551	1.435	1.478
1993	1.531	1.598	1.572	1.506	1.508	1.521	1.527	1.533	1.502	1.448	1.496
1997	1.550	1.597	1.547	1.482	1.561	1.536	1.536	1.539	1.521	1.456	1.462
2000	1.536	1.574	1.564	1.504	1.558	1.528	1.515	1.515	1.547	1.442	1.498
2004	1.531	1.559	1.582	1.593	1.510	1.565	1.475	1.539	1.495	1.431	1.511
2006	1.538	1.587	1.561	1.591	1.500	1.535	1.502	1.516	1.491	1.473	1.482
2008	1.541	1.604	1.507	1.553	1.481	1.560	1.476	1.481	1.519	1.487	1.552
2011	1.533	1.605	1.548	1.527	1.488	1.534	1.492	1.480	1.532	1.495	1.478
Average	1.539	1.580	1.554	1.546	1.526	1.534	1.524	1.517	1.524	1.479	1.490
Range	0.030	0.060	0.083	0.136	0.103	0.062	0.103	0.073	0.062	0.126	0.124
Federal General Election	40/20 Inter-quintile Share Ratio										
	CAN	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL
1979	2.346	2.450	2.336	2.350	2.442	2.366	2.310	2.098	2.213	2.210	2.096
1980	2.373	2.656	2.355	2.215	2.383	2.370	2.271	2.178	2.216	2.220	2.228
1984	2.195	2.105	2.378	2.269	2.168	2.189	2.197	2.080	2.031	2.333	1.972
1988	2.082	2.034	2.148	2.023	2.007	2.108	2.038	1.930	2.045	1.908	1.877
1993	2.068	2.151	2.192	2.111	2.031	2.060	1.992	2.024	1.933	1.942	2.063
1997	2.152	2.267	2.295	1.977	1.947	2.203	2.079	2.059	1.984	1.948	2.008
2000	2.307	3.091	2.259	2.235	1.978	2.338	2.097	2.078	2.098	2.008	1.992
2004	2.225	2.611	2.340	2.233	2.057	2.238	2.058	2.023	2.289	2.048	2.096
2006	2.238	2.403	2.262	2.266	2.113	2.307	2.080	2.116	2.312	2.041	2.119
2008	2.176	2.299	2.049	2.133	2.133	2.217	2.085	2.269	2.111	2.039	2.028
2011	2.212	2.323	2.165	2.006	2.089	2.340	2.105	1.987	2.048	1.823	1.927
Average	2.216	2.399	2.253	2.165	2.123	2.249	2.119	2.077	2.116	2.047	2.037
Range	0.305	1.057	0.329	0.374	0.496	0.309	0.318	0.340	0.379	0.510	0.351
Federal General Election	Bottom 99% Share of Income										
	CAN	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL
1979	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1980	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1984	93.7%	93.5%	92.1%	94.1%	95.2%	92.5%	95.6%	96.7%	95.3%	96.3%	97.0%
1988	91.8%	91.4%	92.4%	95.3%	95.5%	89.2%	94.0%	95.5%	95.0%	95.4%	96.9%
1993	91.7%	89.9%	88.1%	94.7%	94.8%	91.0%	93.5%	95.6%	95.2%	95.6%	97.4%
1997	91.4%	91.9%	86.8%	93.8%	93.9%	89.8%	94.2%	96.2%	94.7%	95.9%	96.7%
2000	89.4%	90.6%	86.3%	95.2%	94.4%	86.3%	93.1%	95.2%	93.8%	95.4%	96.4%
2004	89.7%	89.3%	83.7%	93.5%	94.2%	88.3%	93.1%	96.0%	94.2%	96.3%	96.3%
2006	88.4%	87.7%	78.9%	92.3%	93.9%	87.6%	93.2%	96.4%	94.1%	96.5%	96.4%
2008	89.4%	89.3%	80.6%	91.0%	93.6%	88.9%	93.5%	96.7%	94.6%	96.0%	96.1%
2011	90.0%	89.6%	83.4%	91.6%	93.6%	89.3%	93.4%	95.2%	95.0%	96.6%	94.8%
Average	90.6%	90.4%	85.8%	93.5%	94.3%	89.2%	93.7%	95.9%	94.7%	96.0%	96.4%
Range	5.3%	5.8%	13.5%	4.3%	1.9%	6.2%	2.5%	1.5%	1.5%	1.2%	2.6%
Federal General Election	Bottom 95% Share of Income										
	CAN	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL
1979	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1980	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1984	82.8%	81.3%	77.7%	82.6%	86.3%	80.5%	87.5%	89.5%	86.6%	89.7%	91.0%
1988	80.7%	79.7%	79.5%	86.8%	87.8%	76.1%	85.8%	88.7%	86.8%	88.5%	90.7%
1993	80.4%	77.2%	74.4%	86.4%	86.5%	77.9%	85.6%	88.5%	87.0%	88.4%	90.5%
1997	79.9%	79.2%	72.8%	85.2%	85.9%	76.1%	86.8%	88.9%	86.3%	88.3%	89.8%
2000	77.7%	78.9%	71.9%	87.2%	86.2%	72.2%	85.3%	87.0%	84.7%	87.8%	89.4%
2004	77.8%	76.6%	68.2%	84.6%	86.0%	74.4%	85.1%	88.8%	85.8%	89.6%	89.4%
2006	76.3%	74.3%	62.2%	82.3%	85.4%	74.3%	85.1%	89.2%	85.6%	90.1%	89.1%
2008	77.3%	76.3%	62.9%	79.6%	85.1%	76.1%	85.5%	89.2%	86.3%	89.9%	86.8%
2011	77.9%	76.7%	64.8%	78.9%	85.2%	76.7%	85.4%	87.5%	86.7%	89.7%	84.4%
Average	79.0%	77.8%	70.5%	83.7%	86.0%	76.0%	85.8%	88.6%	86.2%	89.1%	89.0%
Range	6.5%	7.0%	17.3%	8.3%	2.7%	8.3%	2.4%	2.5%	2.3%	2.3%	6.6%
Federal General Election	Bottom 90% Share of Income										
	CAN	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL
1979	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1980	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1984	72.3%	69.1%	65.6%	71.7%	76.6%	69.5%	78.9%	81.3%	77.6%	84.1%	83.3%
1988	70.6%	68.7%	68.4%	77.8%	79.3%	65.0%	77.8%	81.2%	78.2%	82.0%	83.0%
1993	70.1%	65.6%	63.1%	78.2%	78.0%	66.4%	77.3%	81.3%	78.5%	82.1%	83.2%
1997	69.4%	67.2%	62.1%	76.6%	77.6%	63.9%	79.2%	81.8%	78.8%	82.8%	82.7%
2000	67.3%	67.7%	61.2%	78.4%	78.1%	60.2%	77.6%	79.4%	77.0%	81.7%	82.0%
2004	67.2%	65.2%	56.6%	75.4%	77.8%	62.2%	77.6%	82.1%	78.6%	83.6%	81.5%
2006	66.0%	63.0%	50.8%	72.7%	77.2%	62.5%	77.9%	82.3%	77.9%	8415.0%	81.9%
2008	66.9%	65.3%	51.1%	69.0%	76.9%	64.2%	77.9%	82.1%	78.3%	83.8%	78.1%
2011	67.3%	65.6%	52.3%	67.1%	76.8%	64.8%	78.0%	79.9%	78.8%	83.7%	74.5%
Average	68.6%	66.4%	59.0%	74.1%	77.6%	64.3%	78.0%	81.3%	78.2%	83.1%	81.1%
Range	6.3%	6.1%	17.6%	11.3%	2.7%	9.3%	1.9%	2.9%	1.8%	2.4%	8.8%

Source: Statistics Canada, 2013 (CANSIM Tables 202-0703 and 204-0001)

The 100/80 Interquintile Share Ratio is the ratio of the average after-tax income of those Canadian family units receiving the highest 20 per cent of all incomes compared to that of the second highest 20 per cent of all incomes. In 2011, this ratio was 1.837 (Statistics Canada, 2013). That is, the average after-tax income of those Canadian family units receiving the second highest 20 per cent of all incomes was $75,900 while the average for the highest 20 per cent was $139,400 or 1.8 times higher. Calculated annually by Statistics Canada, this is the fifth highest it has been since 1976; the four highest ratios occurred in each of the four years prior, i.e., 2007-2010.

The 80/20 Interquintile Share Ratio is the ratio of the average after-tax income of those Canadian family units receiving the second highest 20 per cent of all incomes compared to that of the lowest 20 per cent of all incomes. In 2011, this ratio was 5.027 (Statistics Canada, 2013). That is, the average after-tax income of those Canadian family units receiving the lowest 20 per cent of all incomes was $15,100 while the average for the second highest 20 per cent was $75,900 or five times higher. Calculated annually by Statistics Canada, this is the eleventh highest it has been since 1976.

The 80/40 Interquintile Share Ratio is the ratio of the average after-tax income of those Canadian family units receiving the second highest 20 per cent of all incomes compared to that of the second lowest 20 per cent of all incomes. In 2011, this ratio was 2.272 (Statistics Canada, 2013). That is, the average after-tax income of those Canadian family units receiving the second lowest 20 per cent of all incomes was $33,400 while the average for the second highest 20 per cent was $75,900 or about 2.3 times higher. Calculated annually by Statistics Canada, this is the second highest it has been since 1976.

The 80/60 Interquintile Share Ratio is the ratio of the average after-tax income of those Canadian family units receiving the second highest 20 per cent of all incomes compared to that of the third highest 20 per cent of all incomes. In 2011, this ratio was 1.482 (Statistics Canada, 2013). That is, the average after-tax income of those Canadian family units receiving the third highest 20 per cent of all incomes was $51,200 while the average for the second highest 20 per cent was $75,900 or about 1.5 times higher. Calculated annually by Statistics Canada, this is the highest it has been since 1976.

The 60/20 Interquintile Share Ratio is the ratio of the average after-tax income of those Canadian family units receiving the third highest 20 per cent of all incomes compared to that of the lowest 20 per cent of all incomes. In 2011, this ratio was 3.391 (Statistics Canada, 2013). That is, the average after-tax income of those Canadian family units receiving the third highest 20 per cent of all incomes was $51,200 while the average for the lowest 20 per cent was $15,100 or about 3.4 times higher. Calculated annually by Statistics Canada, this is the eighteenth highest it has been since 1976.

The 60/40 Interquintile Share Ratio is the ratio of the average after-tax income of those Canadian family units receiving the third highest 20 per cent of all incomes compared to that of the second lowest 20 per cent of all incomes. In 2011, this ratio was 1.533 (Statistics Canada, 2013). That is, the average after-tax income of those Canadian family units receiving the third highest 20 per cent of all incomes was $51,200 while the average for the second lowest 20 per cent was $33,400 or about 1.5 times higher. Calculated annually by Statistics Canada, this is the twentieth highest it has been since 1976.

The 40/20 Interquintile Share Ratio is the ratio of the average after-tax income of those Canadian family units receiving the second lowest 20 per cent of all incomes compared to that of the lowest 20 per cent of all incomes. In 2011, this ratio was 2.212 (Statistics Canada, 2013). That is, the average after-tax income of those Canadian family units receiving the second lowest 20 per cent of all incomes was $15,100 while the average for the lowest 20 per cent was $33,400 or about 2.2 times higher. Calculated annually by Statistics Canada, this is the eighteenth highest it has been since 1976.

The bottom 99 per cent share of income is the proportion of annual after-tax income that the lowest 99 per cent of Canadian income-earners received. In 2011, this proportion was 90.0 per cent (Statistics Canada, 2013). Inversely, the highest 1 per cent of income-receivers held 10.0 per cent of all income in Canada in 2011. The threshold income to the top 1 per cent was $150,200 and the median income of this group was $202,600; comparatively, the median income of the bottom 99 per cent was $26,900.

The bottom 95 per cent share of income is the proportion of annual after-tax income that the lowest 95 per cent of Canadian income-earners received. In 2011, this proportion was 79.4 per cent (Statistics Canada, 2013). Inversely, the highest 5 per cent of income-earners received 20.6 per cent of all income in Canada, in 2011. The threshold income to the top 5 per cent was $84,400 and the median income of this group was $106,500; comparatively, the median income of the bottom 95 per cent was $25,700.

The bottom 90 per cent share of income is the proportion of annual after-tax income that the lowest 90 per cent of Canadian income-earners received. In 2011, this proportion was 68.7 per cent (Statistics Canada, 2013). Inversely, the highest 10 per cent of income-earners received 31.3 per cent of all income in Canada, in 2011. The threshold

income to the top 10 per cent was $67,700 and the median income of this group was $84,400; comparatively, the median income of the bottom 90 per cent was $24,200.

In general, income inequality seems to have increased the most in recent years between the highest income receivers and the rest of Canadians, as opposed to between lower-income earner groups.

Summary statistics for model variables. The mean, standard deviation, minimum value, maximum value, and number of observations for each model variable are summarized below (**Table 15**). "Overall statistics" are ordinary statistics that are based on the 110 observations. For example, across all 110 observations the average provincial level voter turnout at Canadian federal general elections is 67.0 per cent, the lowest turnout is 47.7 per cent (Newfoundland 2008) and the highest is 85.0 per cent (Prince Edward Island 1984), while the standard deviation is 7.8 per cent (see also **Table 1**). A lower standard deviation indicates little dispersion from the mean whereas a larger standard deviation indicates the opposite. Across all observations, the average Gini coefficient is 0.363 with the lowest being 0.316 (Newfoundland 1988) and highest being 0.407 (Alberta 2011) with a standard deviation of 0.0199 units (see also **Table 2**). Similarly, across all 110 observations, the average gap between the popular vote for the first and second place parties is 15.9 percentage points, from a low of 0.1 percentage points (Newfoundland 2006) to a high of 55.6 percentage points (Quebec 1980), with a standard deviation of 13.5 percentage points (see also **Table 13**).

"Between statistics" are calculated on the basis of summary statistics of the ten provinces, regardless of time period. For example, when comparing the average voter turnout in each of the ten provinces the highest average is 75.9 per cent (Prince Edward

Island) while the lowest is 56.8 per cent (Newfoundland) and the standard deviation is 4.5 per cent (see also **Table 1**). The highest average income inequality is 0.380 (British Columbia) and the lowest is 0.346 (Prince Edward Island) while the standard deviation is 0.011 units (see also **Table 2**). Similarly, the highest average electoral area size is 112,796 people per MP (Alberta), the lowest is 33,365 people per MP (Prince Edward Island) and the standard deviation is 23,981 people per MP (see also **Table 13**).

Finally, "within statistics" are again based on all 110 observations, but refer to the deviation of each observation from its provincial average with the overall average then added to increase the comparability of results, i.e., $x_{pt} - \overline{x}_p + \overline{x}_{pt}$. Regarding voter turnout, the smallest such calculation (57.0 per cent) and the largest (79.6 per cent) both belong to Alberta (2008 and 1988, respectively); indeed, Alberta has the largest range in voter turnout across these election years (22.6 per cent, see **Table 1**). For income inequality, the minimum within statistic is 0.328 and the maximum is 0.400 both of Prince Edward Island (1988 and 2011, respectively) – Prince Edward Island has the largest range in income inequality across these election years (0.048 units, see **Table 2**). Regarding population mobility (the average proportion of the population that inter-provincially migrated or internationally immigrated to Canada) the minimum within statistic is 0.008 and the maximum is 0.044 – again, both of these belong to Alberta (1984 and 1980, respectively), which is the province with the greatest range in population mobility (3.6 per cent, see **Table 13**).

In comparing the standard deviation of voter turnout, there seems to be more variation overall than between or within the provinces. This is true for all of the variables except for Electoral Area Size, which has the greatest variation between provinces.

Similarly, there seems to be greater variation within provinces (over time) than between them for all of the indicators except for Electoral Area Size and Population Mobility. More information on the variation of these variables across the sample is included below (**Table 15**).

Table 15: Model Variable Descriptive Statistics – Canadian Federal General Elections, at the Provincial Level (1976-2011)

Variable	Analysis	Mean	Standard Deviation	Minimum Value	Maximum Value	Observations
Voter Turnout	overall	0.670	0.078	0.477	0.850	N = 110
	between		0.050	0.568	0.759	n = 10
	within		0.062	0.570	0.796	T = 11
Income Inequality (Gini)	overall	0.363	0.020	0.316	0.407	N = 110
	between		0.011	0.346	0.380	n = 10
	within		0.017	0.328	0.400	T = 11
Lack of Election Competitiveness	overall	0.159	0.135	0.001	0.556	N = 110
	between		0.097	0.087	0.420	n = 10
	within		0.098	-0.035	0.509	T = 11
Electoral Area Size	overall	84928.120	23901.560	30721.250	134931.100	N = 110
	between		23980.590	33364.800	112795.700	n = 10
	within		6998.191	66617.620	107063.600	T = 11
Population Mobility	overall	0.020	0.009	0.006	0.058	N = 110
	between		0.007	0.008	0.035	n = 10
	within		0.005	0.008	0.044	T = 11
100/20 Income Ratio	overall	7.917	1.090	5.688	12.670	N = 110
	between		0.762	6.958	9.423	n = 10
	within		0.813	5.521	11.164	T = 11
100/40 Income Ratio	overall	3.660	0.319	3.031	4.418	N = 110
	between		0.164	3.400	3.920	n = 10
	within		0.278	3.097	4.345	T = 11
100/60 Income Ratio	overall	2.396	0.189	2.052	2.844	N = 110
	between		0.065	2.298	2.480	n = 10
	within		0.178	2.029	2.880	T = 11
100/80 Income Ratio	overall	1.680	0.095	1.510	1.920	N = 110
	between		0.035	1.628	1.734	n = 10
	within		0.088	1.508	1.895	T = 11
80/20 Income Ratio	overall	4.704	0.515	3.766	7.273	N = 110
	between		0.370	4.283	5.513	n = 10
	within		0.374	3.585	6.463	T = 11
80/40 Income Ratio	overall	2.176	0.095	1.964	2.447	N = 110
	between		0.062	2.089	2.297	n = 10
	within		0.075	2.018	2.385	T = 11
80/60 Income Ratio	overall	1.425	0.041	1.330	1.524	N = 110
	between		0.017	1.403	1.454	n = 10
	within		0.038	1.338	1.522	T = 11
60/20 Income Ratio	overall	3.301	0.329	2.726	4.864	N = 110
	between		0.232	3.033	3.790	n = 10
	within		0.244	2.654	4.375	T = 11
60/40 Income Ratio	overall	1.527	0.041	1.428	1.618	N = 110
	between		0.029	1.479	1.580	n = 10
	within		0.030	1.464	1.605	T = 11
40/20 Income Ratio	overall	2.159	0.178	1.823	3.091	N = 110
	between		0.112	2.037	2.399	n = 10
	within		0.142	1.793	2.850	T = 11
Bottom 99% Income Ratio	overall	0.930	0.037	0.789	0.974	N = 90
	between		0.035	0.858	0.964	n = 10
	within		0.017	0.861	0.996	T = 9
Bottom 95% Income Ratio	overall	0.833	0.066	0.622	0.910	N = 90
	between		0.064	0.705	0.891	n = 10
	within		0.025	0.750	0.923	T = 9
Bottom 90% Income Ratio	overall	0.743	0.083	0.508	0.841	N = 90
	between		0.082	0.590	0.831	n = 10
	within		0.027	0.661	0.837	T = 9

Note: For Bottom 99%, 95%, and 90% Income Ratios the data refer to provincial level observations during federal general election years 1984-2011.

Regression Results for Alternative Income Inequality Measures

A summary of the regression analyses of these various income inequality indicators on provincial voter turnout during federal general elections (1976-2011) is included in the main body of this report while statistical data are presented below (**Table 16**). In general, the results using the interquintile income ratios comparing the income received by the highest 20 per cent of income-receivers to that received by any of the other quintiles are similar to those based on the Gini coefficient as the measure of provincial income inequality (**Table 3**). The relationship between provincial income inequality and voter turnout at federal general elections is less strong among the other income inequality indicators. This might have suggested that not all income inequality is equally impactful on voter turnout, but rather it is the concentration of wealth among the highest income receivers that is most damaging to political participation and perhaps citizenship. However, as with the Gini coefficient, once time is added to these models the relationship between income inequality and voter turnout seems to disappear.

Table 16: Additional Cross-sectional Time-series Estimates of the Determinants of Voter Turnout for Canadian Federal General Elections, at the Provincial Level (1976-2011) - Various Income Inequality Measures

Variable	100/20 Inter-quintile Share Ratio				100/40 Inter-quintile Share Ratio				100/60 Inter-quintile Share Ratio				100/80 Inter-quintile Share Ratio				80/20 Inter-quintile Share Ratio			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
Inequality	-0.018**	-0.013	-0.001	0.005	-0.087***	-0.105***	0.003	0.012	-0.192***	-0.216***	0.0150	0.028	-0.423***	-0.461***	-0.009	0.019	-0.025*	-0.003	0.001	0.008
	(0.007)	(0.007)	(0.004)	(0.004)	(0.022)	(0.021)	(0.015)	(0.014)	(0.033)	(0.029)	(0.028)	(0.028)	(0.063)	(0.055)	(0.059)	(0.057)	(0.013)	(0.013)	(0.007)	(0.007)
Lack of Election Competitiveness	-0.136**	-0.107*	-0.107***	-0.098***	-0.142**	-0.123**	-0.106***	-0.096***	-0.147**	-0.130**	-0.104***	-0.095***	-0.151**	-0.134**	-0.107***	-0.098***	-0.138**	-0.113*	-0.107***	-0.100***
	(0.043)	(0.044)	(0.023)	(0.023)	(0.044)	(0.043)	(0.024)	(0.023)	(0.044)	(0.042)	(0.024)	(0.230)	(0.043)	(0.041)	(0.024)	(0.023)	(0.043)	(0.044)	(0.023)	(0.023)
Electoral Area Size	-2.53E-06*	-1.52E-06**	-7.38E-07	-1.05E-06**	-2.30E-06*	-1.06E-06	-7.53E-07	-1.03E-06**	-1.60E-06	-8.49E-07	-7.95E-07	-1.06E-06**	-1.34E-06	-7.36E-07	-7.20E-07	-9.93E-07**	-2.83E-06*	-1.73E-06**	-7.38E-07	-1.00E-06**
	(1.11E-06)	(5.81E-07)	(4.73E-07)	(3.56E-07)	(1.01E-06)	(5.70E-07)	(4.73E-07)	(3.66E-07)	(9.16E-07)	(5.27E-07)	(4.82E-07)	(3.72E-07)	(8.68E-07)	(5.28E-07)	(4.83E-07)	(3.73E-07)	(1.14E-06)	(5.52E-07)	(4.64E-07)	(3.48E-07)
Population Mobility	-2.811**	-0.592	-0.9170	-0.910	-2.190*	-0.4120	-0.9390	-0.960	-1.542	-0.314	-0.978	-1.003*	-1.059	-0.092	-0.895	-0.947	-3.088**	-0.806	-0.914	-0.877
	(1.015)	(0.880)	(0.557)	(0.485)	(1.027)	(0.836)	(0.566)	(0.489)	(0.701)	(0.782)	(0.568)	(0.492)	(0.953)	(0.761)	(0.577)	(0.498)	(1.016)	(0.882)	(0.554)	(0.483)
Intercept (baseline)	1.091***	0.937***	0.724***	0.828***	1.245***	1.174***	0.715***	0.823***	1.317***	1.287***	0.692***	0.805***	1.537***	1.530***	0.739***	0.829***	1.094***	0.868***	0.721***	-0.110***
	(0.050)	(0.064)	(0.045)	(0.041)	(0.062)	(0.074)	(0.059)	(0.054)	(0.066)	(0.067)	(0.067)	(0.063)	(0.080)	(0.085)	(0.086)	(0.087)	(0.051)	(0.072)	(0.047)	(0.011)
Year1 (referent)			Referent	Referent			Referent	Referent			Referent	Referent			Referent	Referent			Referent	Referent
Year2 (dummy)			-0.048***	-0.051***			-0.048***	-0.051***			0.050***	-0.051***			0.045**	-0.051***			0.048***	-0.051***
			(0.010)	(0.009)			(0.012)	(0.009)			(0.014)	(0.0084)			(0.013)	(0.009)			(0.010)	(0.009)
Year3 (dummy)			0.121***	0.009			0.122***	0.007			0.124***	0.006			0.119***	0.007			0.121***	0.010
			(0.011)	(0.010)			(0.012)	(0.010)			(0.014)	(0.010)			(0.013)	(0.010)			(0.011)	(0.010)
Year4 (dummy)			0.123***	0.013			0.125***	0.009			0.128***	0.008			0.122***	0.008			0.124***	0.014
			(0.012)	(0.011)			(0.014)	(0.010)			(0.015)	(0.010)			(0.015)	(0.010)			(0.011)	(0.011)
Year5 (dummy)			0.055***	-0.057***			0.056***	-0.061***			0.059***	-0.063***			0.053***	-0.061***			0.055***	-0.056***
			(0.011)	(0.011)			(0.012)	(0.010)			(0.014)	(0.010)			(0.014)	(0.010)			(0.010)	(0.011)
Year6 (dummy)			0.029**	-0.083***			0.030*	-0.087***			0.032*	-0.090***			0.028*	-0.087***			0.029**	-0.082***
			(0.010)	(0.011)			(0.011)	(0.011)			(0.012)	(0.011)			(0.012)	(0.011)			(0.010)	(0.011)
Year7 (dummy)			0.002	-0.115***			0.002	-0.118***			0.003	-0.122***			0.002	-0.116***			0.002	-0.112***
			(0.010)	(0.011)			(0.010)	(0.012)			(0.010)	(0.014)			(0.010)	(0.014)			(0.010)	(0.010)
Year8 (dummy)			-0.021*	-0.137***			-0.021*	-0.140***			-0.020	-0.144***			-0.021*	-0.138***			-0.021*	-0.134***
			(0.010)	(0.011)			(0.010)	(0.012)			(0.010)	(0.013)			(0.010)	(0.014)			(0.010)	(0.010)
Year9 (dummy)			0.022*	-0.095***			0.022*	-0.097***			0.023*	-0.101***			0.022*	-0.095***			0.022*	-0.091***
			(0.009)	(0.011)			(0.009)	(0.012)			(0.009)	(0.014)			(0.009)	(0.014)			(0.009)	(0.010)
Year10 (dummy)			-0.033***	-0.148***			-0.033***	-0.152***			-0.033***	-0.157***			-0.033***	-0.150***			-0.033***	-0.145***
			(0.008)	(0.011)			(0.008)	(0.012)			(0.008)	(0.014)			(0.008)	(0.014)			(0.008)	(0.011)
Year11 (dummy)			0.000	-0.114***			0.000	-0.119***			0.000	-0.124***			0.000	-0.117***			0.000	-0.110***
			(0.001)	(0.011)			(0.001)	(0.013)			(0.001)	(0.015)			0.001	(0.015)			0.001	(0.011)
Model (F-test, Wald)	9.27***	27.37***	51.78***	745.03***	13.71***	59.52***	51.33***	751.55***	22.57***	107.71***	50.49***	750.24***	27.28***	127.80***	51.16***	745.45***	7.79***	21.83***	52.16***	754.41***
R2	0.301	0.415	0.897	0.915	0.389	0.556	0.897	0.914	0.512	0.601	0.895	0.915	0.559	0.623	0.896	0.914	0.266	0.302	0.898	0.915
rho_ar	0.496	0.496	0.154	0.154	0.309	0.3090	0.160	0.160	0.129	0.129	0.172	0.172	0.092	0.092	0.161	0.161	0.549	0.549	0.149	0.149
N	100	110	100	110	100	110	100	110	100	110	100	110	100	110	100	110	100	110	100	110

Statistical significance: * <0.05, ** <0.01, * <0.001 (Standard errors in parentheses)**

Continued - Table 16: Additional Cross-sectional Time-series Estimates of the Determinants of Voter Turnout for Canadian Federal General Elections, at the Provincial Level (1976-2011) - Various Income Inequality Measures

Variable	80/40 Inter-quintile Share Ratio				80/60 Inter-quintile Share Ratio				60/20 Inter-quintile Share Ratio				60/40 Inter-quintile Share Ratio				40/20 Inter-quintile Share Ratio			
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 1**	**Model 2**	**Model 3**	**Model 4**	**Model 1**	**Model 2**	**Model 3**	**Model 4**	**Model 1**	**Model 2**	**Model 3**	**Model 4**	**Model 1**	**Model 2**	**Model 3**	**Model 4**
Inequality	-0.069	-0.069	0.013	0.029	-0.081	-0.293	0.093	0.124	-0.043*	-0.003	-0.002	0.011	-0.226	0.0220	-0.024	0.011	-0.061	0.004	-0.001	0.019
	(0.066)	(0.069)	(0.032)	(0.032)	(0.156)	(0.150)	(0.084)	(0.083)	(0.019)	(0.020)	(0.011)	(0.011)	(0.152)	(0.157)	(0.074)	(0.073)	(0.032)	(0.034)	(0.018)	(0.019)
Lack of Election Competitiveness	-0.145**	-0.114**	-0.106***	-0.097***	-0.143**	-0.116**	-0.103***	-0.095***	-0.135**	-0.115**	-0.107***	-0.100***	-0.144**	-0.114**	-0.107***	-0.099***	-0.136**	-0.115**	-0.107***	-0.101***
	(0.044)	(0.044)	(0.023)	(0.023)	(0.045)	(0.044)	(0.023)	(0.023)	(0.043)	(0.044)	(0.023)	(0.023)	(0.043)	(0.044)	(0.023)	(0.023)	(0.043)	(0.044)	(0.023)	(0.023)
Electoral Area Size	-2.99E-06*	-1.66E-06**	-7.38E-07	-9.90E-07**	-3.20E-06**	-1.57E-06**	-7.78E-07	-1.02E-06**	-2.96E-06*	-1.73E-06**	-7.29E-07	-9.76E-07**	-3.11E-06**	-1.73E-06**	-7.47E-07	-9.47E-07**	-2.98E-06*	-1.74E-06**	-7.33E-07	-9.75E-07**
	(1.15E-06)	(5.61E-07)	(4.64E-07)	(3.57E-07)	(1.18E-06)	(5.43E-07)	(4.71E-07)	(3.60E-07)	(1.14E-06)	(5.43E-07)	(4.63E-07)	(3.42E-07)	(1.16E-06)	(5.45E-07)	(4.68E-07)	(3.51E-07)	(1.14E-06)	(5.42E-07)	(4.65E-07)	(3.45E-07)
Population Mobility	-3.129**	-0.813	-0.928	-0.922	-3.132**	-0.918	-0.931	-0.947	-3.016**	-0.862	-0.915	-0.859	-3.035**	-0.869	-0.905	-0.894	-3.075**	-0.847	-0.917	-0.868
	(1.037)	(0.879)	(0.555)	(0.484)	(1.052)	(0.878)	(0.555)	(0.483)	(1.010)	(0.885)	(0.554)	(0.486)	(1.026)	(0.882)	(0.557)	(0.488)	(1.017)	(0.884)	(0.555)	(0.485)
Intercept (baseline)	1.146***	0.999***	0.694***	0.796***	1.130***	1.261***	0.590***	0.690***	1.125***	0.846***	0.730***	0.817***	1.345***	0.822***	0.762***	0.839***	1.119***	0.847***	0.726***	0.815***
	(0.076)	(0.147)	(0.072)	(0.074)	(0.109)	(0.211)	(0.107)	(0.118)	(0.052)	(0.076)	(0.049)	(0.049)	(0.113)	(0.236)	(0.103)	(0.116)	(0.054)	(0.083)	(0.050)	(0.052)
Year1 (referent)			Referent	Referent			Referent	Referent			Referent	Referent			Referent	Referent			Referent	Referent
Year2 (dummy)			0.049***	-0.050***			0.052***	-0.050***			0.049***	-0.051***			0.047***	-0.051***			0.048***	-0.051***
			(0.010)	(0.009)			(0.012)	(0.008)			(0.011)	(0.009)			(0.010)	(0.009)			(0.011)	(0.009)
Year3 (dummy)			0.122***	0.007			0.126***	0.006			0.121***	0.0106			0.121***	0.008			0.121***	0.010
			(0.011)	(0.010)			(0.012)	(0.010)			(0.011)	(0.011)			(0.011)	(0.010)			(0.011)	(0.011)
Year4 (dummy)			0.125***	0.010			0.130***	0.008			0.123***	0.014			0.123***	0.009			0.123***	0.014
			(0.012)	(0.010)			(0.013)	(0.010)			(0.011)	(0.011)			(0.011)	(0.010)			(0.011)	(0.011)
Year5 (dummy)			0.056***	-0.061***			0.060***	-0.064***			0.055***	-0.056***			0.055***	-0.061***			0.055***	-0.056***
			(0.010)	(0.010)			(0.011)	(0.010)			(0.010)	(0.011)			(0.010)	(0.010)			(0.010)	(0.011)
Year6 (dummy)			0.030**	-0.086***			0.033**	-0.090***			0.029**	-0.081***			0.029**	-0.085***			0.029**	-0.081***
			(0.010)	(0.010)			(0.011)	(0.011)			(0.010)	(0.011)			(0.010)	(0.011)			(0.010)	(0.011)
Year7 (dummy)			0.002	-0.114***			0.004	-0.120***			0.002	-0.110***			0.002	-0.112***			0.002	-0.111***
			(0.010)	(0.011)			(0.010)	(0.011)			(0.010)	(0.011)			(0.010)	(0.011)			(0.010)	(0.011)
Year8 (dummy)			-0.020*	-0.136***			-0.018	-0.141***			-0.020*	-0.132***			-0.021*	-0.135***			-0.021*	-0.133***
			(0.010)	(0.010)			(0.010)	(0.011)			(0.010)	(0.011)			(0.010)	(0.011)			(0.010)	(0.011)
Year9 (dummy)			0.023*	-0.093***			0.025*	-0.098***			0.022*	-0.089***			0.022*	-0.092***			0.022*	-0.090***
			(0.009)	(0.010)			(0.010)	(0.011)			(0.009)	(0.011)			(0.009)	(0.011)			(0.009)	(0.011)
Year10 (dummy)			-0.033***	-0.148***			-0.031**	-0.154***			-0.033***	-0.143***			-0.0331***	-0.147***			-0.033***	-0.144***
			(0.008)	(0.010)			(0.009)	(0.011)			(0.008)	(0.011)			(0.008)	(0.011)			(0.008)	(0.011)
Year11 (dummy)			0.000	-0.115***			0.000	-0.123***			0.000	-0.108***			0.000	-0.113***			0.000	-0.109***
			(0.001)	(0.011)			(0.001)	(0.013)			(0.001)	(0.012)			(0.001)	(0.011)			(0.001)	(0.012)
Model (F-test, Wald)	6.94***	23.33***	51.89***	762.51***	6.87***	27.05***	50.92***	759.07***	8.00***	21.58***	52.24***	737.85***	7.12***	21.58***	51.27***	733.55***	7.63***	21.66***	51.94***	742.07***
R2	0.244	0.348	0.898	0.915	0.242	0.441	0.896	0.916	0.271	0.293	0.898	0.914	0.249	0.295	0.896	0.914	0.262	0.294	0.898	0.914
rho_ar	0.530	0.530	0.154	0.154	0.499	0.499	0.175	0.175	0.559	0.559	0.148	0.148	0.562	0.562	0.161	0.161	0.554	0.554	0.1520	0.1520
N	100	110	100	110	100	110	100	110	100	110	100	110	100	110	100	110	100	110	100	110

Statistical significance: * <0.05, ** <0.01, * <0.001 (Standard errors in parentheses)**

Continued - Table 16: Additional Cross-sectional Time-series Estimates of the Determinants of Voter Turnout for Canadian Federal General Elections, at the Provincial Level (1976-2011) - Various Income Inequality Measures												
Variable	**Bottom 99% Income Share**				**Bottom 95% Income Share**				**Bottom 90% Income Share**			
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 1**	**Model 2**	**Model 3**	**Model 4**	**Model 1**	**Model 2**	**Model 3**	**Model 4**
Inequality	0.411	0.544	0.096	-0.080	0.388	0.182	0.043	-0.053	0.346	-0.015	-0.002	-0.053
	(0.418)	(0.419)	(0.228)	(0.196)	(0.303)	(0.294)	(0.150)	(0.131)	(0.260)	(0.245)	(0.129)	(0.110)
Lack of Election Competitiveness	-0.162***	-0.143**	-0.097**	-0.103***	-0.159***	-0.141**	-0.096**	-0.104***	-0.157***	-0.145**	-0.098**	-0.105***
	(0.042)	(0.046)	(0.031)	(0.029)	(0.042)	(0.047)	(0.031)	(0.028)	(0.042)	(0.047)	(0.032)	(0.028)
Electoral Area Size	-1.78E-06	-8.85E-07	-5.21E-07	-7.47E-07	-1.47E-06	-1.06E-06	-5.82E-07	-7.42E-07	-1.37E-06	-1.39E-06	-6.64E-07	-7.51E-07
	(1.25E-06)	(1.17E-07)	(6.72E-07)	(4.25E-07)	(1.30E-06)	(7.82E-07)	(6.42E-07)	(4.36E-07)	(1.32E-06)	(8.07E-07)	(6.23E-07)	(4.43E-07)
Population Mobility	1.780	0.940	-0.131	-0.310	2.021	0.526	-0.178	-0.346	2.086	-0.053	-0.307	-0.408
	(1.439)	(1.538)	(0.941)	(0.837)	(1.461)	(1.604)	(0.951)	(0.858)	(1.472)	(1.587)	(0.961)	(0.861)
Intercept (baseline)	0.389*	0.242	0.598*	0.914***	0.415**	0.620	0.657***	0.883***	0.469***	0.824**	0.704***	0.880***
	(0.164)	(0.448)	(0.252)	(0.217)	(0.120)	(0.317)	(0.167)	(0.146)	(0.099)	(0.259)	(0.138)	(0.119)
Year1 (referent)												
Year2 (dummy)												
Year3 (dummy)			Referent	Referent			Referent	Referent			Referent	Referent
Year4 (dummy)			0.122***	-0.003			0.122***	-0.002			0.123***	-0.002
			(0.012)	(0.010)			(0.012)	(0.010)			(0.012)	(0.010)
Year5 (dummy)			0.056***	-0.071***			0.056***	-0.071***			0.056***	-0.070***
			(0.012)	(0.010)			(0.012)	(0.010)			(0.012)	(0.010)
Year6 (dummy)			0.032**	-0.097***			0.032**	-0.096***			0.032**	-0.096***
			(0.011)	(0.010)			(0.011)	(0.010)			(0.011)	(0.010)
Year7 (dummy)			0.006	-0.124***			0.005	-0.123***			0.005	-0.123***
			(0.011)	(0.010)			(0.011)	(0.010)			(0.011)	(0.010)
Year8 (dummy)			-0.017	-0.147***			-0.018	-0.146***			-0.018	-0.146***
			(0.011)	(0.010)			(0.011)	(0.010)			(0.011)	(0.010)
Year9 (dummy)			0.025*	-0.106***			0.024*	-0.105***			0.024*	-0.104***
			(0.011)	(0.011)			(0.010)	(0.010)			(0.010)	(0.010)
Year10 (dummy)			-0.032**	-0.161***			-0.032**	-0.160***			-0.032**	-0.160***
			(0.010)	(0.011)			(0.010)	(0.010)			(0.010)	(0.010)
Year11 (dummy)			0.000	-0.128***			0.000	-0.128***			0.001	-0.128***
			(0.001)	(0.011)			(0.001)	(0.011)			(0.001)	(0.011)
Model (F-test, Wald)	7.52***	23.66***	39.85***	655.57***	7.75***	21.93***	39.94***	677.36***	7.77***	21.46***	40.27***	705.06***
R2	0.313	0.282	0.881	0.916	0.320	0.240	0.882	0.916	0.320	0.202	0.883	0.916
rho_ar	0.622	0.622	0.028	0.028	0.626	0.626	0.025	0.025	0.635	0.635	0.020	0.02
N	80	90	80	90	80	90	80	90	80	90	80	90

Statistical significance: * <0.05, ** <0.01, * <0.001 (Standard errors in parentheses); No 99%, 95%, 90% data for Year1 or Year2.**

Appendix E: Canadian Provincial General Elections – Additional Descriptive Statistics and Income Inequality Variables

This is a discussion of additional descriptive statistics for the variables in the Canadian provincial general elections models, i.e., control variables, additional inco inequality variables, and summary statistics for all model variables. Subsequently, t regression results for the provincial-level determinants of voter turnout at Canadian provincial general elections using these additional income inequality measures, is presented. Generally, these results reflect those in the main study.

Additional Descriptive Statistics

Control variables. Observations for each control variable during each provi general election year (1976-2011) are detailed below (**Table 17**). As with voter turn and income inequality these variables are at the provincial level.

On average, provincial general elections seem most competitive in Quebec v the difference between the popular vote for the first and second place parties averag just 6.8 percentage points during provincial elections between 1976 and 2011, follo by Manitoba (7.0 percentage point difference) and British Columbia (8.5 percentage point difference). These elections seem least competitive in Alberta where the avera difference was 24.5 percentage points, followed by Newfoundland (18.5 percentage points) and Saskatchewan (13.0 percentage points). Again, this somewhat supports theory that less competitive elections lower voter turnout, as Alberta reported the lo average voter turnout at provincial general elections during this time period while Q reported the second highest. However, Saskatchewan's voter turnout was on the hig end of the scale and Manitoba's on the lower end, which seems to counter this theor (British Columbia and Newfoundland voter turnout fell in the middle).

The largest population represented by each provincial Member of Parliament (MP), on average during this time period, is Ontario (92,547), followed by Quebec (57,906) and British Columbia (49,391). The smallest population represented by each, on average, is Prince Edward Island (4,490), followed by Newfoundland (11,019) and New Brunswick (13,093). Support for the theory that larger the population represented by each Member of Parliament the lower is voter turnout was less clear, as Quebec has the second highest average voter turnout, British Columbia the fifth highest, and Ontario the second lowest. On the other end of the spectrum, Prince Edward Island and New Brunswick experienced relatively higher average voter turnouts at provincial general elections over this time period, which lends support to this theory.

Alberta also reports the greatest population mobility (3.3per cent), on average, for provincial general election years during this time period, followed by British Columbia (2.6per cent), and Prince Edward Island (2.5 per cent). The provinces with the lowest population mobility, on average over these election years, are: Quebec (0.8 per cent), Ontario (1.6 per cent), and Newfoundland and Labrador (1.6 per cent). On both ends of the scale for this variable are a mixture of provinces that report lower and higher voter turnout at provincial general elections, hence there is no clear indication of a negative relationship between population mobility and voter turnout.

Table 17: Lack of Election Competiveness, Electoral Area Size, and Population Mobility during Provincial General Elections, Canada and the Provinces (1976-2011)
(Provincial General Election Year Indicated below each Measure)

	Lack of Election Competitiveness										
	BC	**AB**	**SK**	**MB**	**ON**	**QC**	**NB**	**NS**	**PE**	**NL**	**Average**
1976-1978			10.0%	10.1%	8.2%	7.6%	0.1%	6.4%	2.6%		6.4%
			1978	1977	1977	1976	1978	1978	1978		
1979-1981	2.2%	37.5%		3.5%	10.7%	3.2%		14.4%	7.9%	9.8%	11.2%
	1979	1979		1981	1981	1981		1981	1979	1979	
1982-1984	4.8%	43.5%	16.4%				6.1%	19.3%	7.9%	26.3%	17.8%
	1983	1982	1982				1982	1984	1982	1982	
1985-1986	6.7%	22.2%	0.6%	1.0%	0.9%	17.3%			4.8%	11.9%	8.2%
	1986	1986	1986	1986	1985	1985			1986	1985	
1987-1989		15.6%		2.8%	21.6%	9.8%	31.6%	3.9%	24.9%	0.5%	13.8%
		1989		1988	1987	1989	1987	1988	1989	1989	
1990-1992	7.5%		25.5%	13.1%	5.2%		25.7%				15.4%
	1991		1991	1990	1990		1991				
1993-1995		4.8%	12.5%	10.0%	13.7%	0.4%	20.8%	18.6%	15.6%	7.0%	11.5%
		1993	1995	1995	1995	1994	1995	1993	1993	1993	
1996-1998	2.4%	18.4%				0.7%		0.7%	2.6%	16.0%	6.8%
	1996	1997				1998		1998	1996	1996	
1999-2001	36.1%	34.6%	0.9%	3.7%	5.2%		15.7%	9.2%	24.1%	8.8%	15.4%
	2001	2001	1999	1999	1999		1999	1999	2000	1999	
2002-2004		17.4%	5.3%	13.2%	11.8%	12.8%	0.6%	4.8%	11.6%	25.4%	11.4%
		2004	2003	2003	2003	2003	2003	2003	2003	2003	
2005-2007	4.3%		13.7%	10.1%	10.7%	2.2%	0.3%	4.9%	11.6%	47.9%	11.7%
	2005		2007	2007	2007	2007	2006	2006	2007	2007	
2008-2011	3.7%	26.3%	32.3%	2.4%	2.3%	6.9%	14.3%	18.0%	11.2%	31.5%	14.9%
	2009	2008	2011	2011	2011	2008	2010	2009	2011	2011	
Average	8.5%	24.5%	13.0%	7.0%	9.0%	6.8%	12.8%	10.0%	11.4%	18.5%	12.2%
Range	33.8%	38.8%	31.7%	12.3%	20.7%	17.0%	31.5%	18.7%	22.3%	47.5%	27.4%

Sources: Elections Alberta, 2010, 2007; Elections BC, 2009, 2013; Elections Manitoba, 2006, 2007, 2011; Elections New Brunswick, 2010, 1991; Elections Newfoundland and Labrador, 2011; Elections Nova Scotia, 2009; Elections Ontario, 2011; Elections Prince Edward Island, 2011; Elections Quebec, 2008; Elections Saskatchewan, 2011

	Electoral Area Size										
	BC	**AB**	**SK**	**MB**	**ON**	**QC**	**NB**	**NS**	**PE**	**NL**	**Average**
1976-1978			15,614	18,199	68,033	58,152	12,061	16,243	3,803		27,444
			1978	1977	1977	1976	1978	1978	1978		
1979-1981	46,759	26,544		18,167	70,498	53,666		16,440	3,840	10,963	30,860
	1979	1979		1981	1981	1981		1981	1979	1979	
1982-1984	51,009	29,998	15,415				12,198	16,874	3,862	11,035	20,056
	1983	1982	1982				1982	1984	1982	1982	
1985-1986	43,531	30,797	16,074	19,150	74,357	54,638			4,014	11,140	31,713
	1986	1986	1986	1986	1985	1985			1986	1985	
1987-1989		30,100		19,336	74,138	55,401	12,548	17,254	4,067	11,088	27,992
		1989		1988	1987	1989	1987	1988	1989	1989	
1990-1992	44,984		15,193	19,393	79,199		12,855				34,325
	1991		1991	1990	1990		1991				
1993-1995		32,136	17,486	19,810	84,232	57,539	13,654	17,768	4,131	11,153	28,657
		1993	1995	1995	1995	1994	1995	1993	1993	1993	
1996-1998	51,658	34,095				58,367		17,920	5,027	11,660	29,788
	1996	1997				1998		1998	1996	1996	
1999-2001	51,598	36,844	17,492	20,043	111,697		13,647	17,957	5,054	11,111	31,716
	2001	2001	1999	1999	1999		1999	1999	2000	1999	
2002-2004		39,030	17,181	20,418	118,857	59,887	13,625	18,029	5,082	10,803	33,657
		2004	2003	2003	2003	2003	2003	2003	2003	2003	
2005-2007	53,124		17,244	20,940	119,542	61,497	13,558	18,039	5,116	10,549	35,512
	2005		2007	2007	2007	2007	2006	2006	2007	2007	
2008-2011	52,469	43,279	18,238	21,959	124,919	62,004	13,689	18,088	5,396	10,685	37,073
	2009	2008	2011	2011	2011	2008	2010	2009	2011	2011	
Average	49,391	33,647	16,660	19,742	92,547	57,906	13,903	17,461	4,490	11,019	31,677
Range	9,593	16,736	3,045	3,792	56,886	8,339	1,628	1,845	1,593	1,112	10,457

Sources: Elections Alberta, 2010, 2007; Elections BC, 2009, 2013; Elections Manitoba, 2006, 2007, 2011; Elections New Brunswick, 2010, 1991; Elections Newfoundland and Labrador, 2011; Elections Nova Scotia, 2009; Elections Ontario, 2011; Elections Prince Edward Island, 2011; Elections Quebec, 2008; Elections Saskatchewan, 2011; Statistics Canada, 2013 (CANSIM Table 051-0001)

Table 17: Lack of Election Competiveness, Electoral Area Size, and Population Mobility during Provincial General Elections, Canada and the Provinces (1976-2011)											
(Provincial General Election Year Indicated below each Measure)											
	Population Mobility										
	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL	Average
1976-1978			2.3%	2.4%	1.7%	0.8%	2.2%	2.5%	3.1%		2.1%
			1978	1977	1977	1976	1978	1978	1978		
1979-1981	3.9%	5.6%		2.7%	1.6%	0.7%		2.4%	2.8%	1.7%	2.7%
	1979	1979		1981	1981	1981		1981	1979	1979	
1982-1984	2.0%	3.1%	2.3%				2.2%	2.1%	2.9%	1.8%	2.3%
	1983	1982	1982				1982	1984	1982	1982	
1985-1986	2.3%	2.3%	1.8%	2.0%	1.4%	0.6%			2.2%	1.1%	1.7%
	1986	1986	1986	1986	1985	1985			1986	1985	
1987-1989		3.4%		1.9%	1.9%	1.0%	1.9%	2.3%	2.7%	1.8%	2.1%
		1989		1988	1987	1989	1987	1988	1989	1989	
1990-1992	3.3%		2.0%	2.1%	1.8%		1.8%				2.2%
	1991		1991	1990	1990		1991				
1993-1995		2.6%	1.9%	1.7%	1.7%	0.7%	1.7%	2.0%	2.1%	1.3%	1.7%
		1993	1995	1995	1995	1994	1995	1993	1993	1993	
1996-1998	2.9%	3.5%				0.6%		1.8%	2.1%	1.3%	2.0%
	1996	1997				1998		1998	1996	1996	
1999-2001	2.1%	3.0%	1.6%	1.6%	1.7%		1.6%	1.9%	2.0%	1.7%	1.9%
	2001	2001	1999	1999	1999		1999	1999	2000	1999	
2002-2004		3.1%	1.7%	1.8%	1.5%	0.9%	1.5%	1.8%	2.1%	1.7%	1.8%
		2004	2003	2003	2003	2003	2003	2003	2003	2003	
2005-2007	2.3%		2.4%	2.0%	1.4%	0.9%	1.7%	1.9%	3.0%	2.1%	2.0%
	2005		2007	2007	2007	2007	2006	2006	2007	2007	
2008-2011	2.1%	2.8%	3.2%	2.3%	1.3%	0.9%	1.6%	1.9%	2.9%	2.0%	2.1%
	2009	2008	2011	2011	2011	2008	2010	2009	2011	2011	
Average	2.6%	3.3%	2.2%	2.0%	1.6%	0.8%	1.8%	2.1%	2.5%	1.6%	2.1%
Range	1.8%	3.4%	1.6%	1.1%	0.7%	0.4%	0.7%	0.7%	1.1%	1.0%	1.3%
Source: Statistics Canada, 2013 (CANSIM Tables 051-0001, 051-0011, and 051-0012)											

Additional income inequality measures. As with the Canadian federal general election data, the four regression models developed for the analysis of the Canadian provincial general elections data were re-run using thirteen alternative measures of income inequality including ten interquintile income ratios and three high-income ratios. Income inequality during provincial general election years generally increased in all provinces over this time period, as well. Prince Edward Island, Newfoundland, and New Brunswick consistently reported the lowest average income inequality during provincial general elections years over this time period. British Columbia and Alberta were consistently ranked among the top three provinces with the greatest income inequality, with Ontario and Saskatchewan also reporting higher income inequality. These patterns generally reflected those regarding federal general elections over this same time period (previous section). These provincial-level inequality measures for each Canadian provincial general election from 1976 to 2011 are summarized below (**Table 18**).

Table 18: Various Measures of Income Inequality during Provincial General Elections, Canada and the Provinces (1976-2011)											
	100/20 Inter-quintile Share Ratio										
	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL	Average
1976-1978			8.500	9.959	8.431	7.735	7.267	8.395	12.154		8.920
			1978	1977	1977	1976	1978	1978	1978		
1979-1981	8.636	7.895		8.016	7.071	7.364		6.945	7.555	6.662	7.518
	1979	1979		1981	1981	1981		1981	1979	1979	
1982-1984	7.909	7.955	8.312				7.210	7.163	6.270	6.132	7.279
	1983	1982	1982				1982	1984	1982	1982	
1985-1986	7.684	7.762	8.626	6.860	7.256	7.114			6.245	6.662	7.276
	1986	1986	1986	1986	1985	1985			1986	1985	
1987-1989		7.978		6.950	7.006	6.730	6.805	6.887	6.733	5.595	6.836
		1989		1988	1987	1989	1987	1988	1989	1989	
1990-1992	7.938		7.728	6.775	7.209		6.614				7.253
	1991		1991	1990	1990		1991				
1993-1995		7.962	7.653	6.881	7.587	7.065	6.523	6.481	5.942	6.567	6.962
		1993	1995	1995	1995	1994	1995	1993	1993	1993	
1996-1998	8.708	8.845				7.941		8.569	6.221	6.516	7.800
	1996	1997				1998		1998	1996	1996	
1999-2001	11.131	9.075	7.811	7.368	9.475		7.115	9.437	7.318	7.508	8.471
	2001	2001	1999	1999	1999		1999	1999	2000	1999	
2002-2004		9.500	8.160	7.178	8.943	7.726	7.806	7.771	6.743	7.926	7.973
		2004	2003	2003	2003	2003	2003	2003	2003	2003	
2005-2007	9.898		8.871	8.220	9.392	8.065	8.008	8.704	6.439	8.268	8.429
	2005		2007	2007	2007	2007	2006	2006	2007	2007	
2008-2011	10.000	8.039	7.875	7.785	9.556	8.092	7.724	8.657	7.183	8.098	8.301
	2009	2008	2011	2011	2011	2008	2010	2009	2011	2011	
Average	8.988	8.334	8.171	7.599	8.192	7.537	7.230	7.901	7.164	6.993	7.811
Range	3.447	1.738	1.218	3.183	2.550	1.362	1.485	2.955	6.211	2.673	2.682
	100/40 Inter-quintile Share Ratio										
	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL	Average
1976-1978			3.647	3.645	3.214	3.405	3.137	3.455	3.807		3.473
			1978	1977	1977	1976	1978	1978	1978		
1979-1981	3.525	3.380		3.541	3.206	3.295		3.342	3.418	3.179	3.361
	1979	1979		1981	1981	1981		1981	1979	1979	
1982-1984	3.588	3.490	3.646				3.506	3.527	3.291	3.107	3.451
	1983	1982	1982				1982	1984	1982	1982	
1985-1986	3.680	3.604	3.860	3.348	3.451	3.440			3.191	3.393	3.496
	1986	1986	1986	1986	1985	1985			1986	1985	
1987-1989		3.460		3.463	3.451	3.389	3.416	3.368	3.404	3.000	3.369
		1989		1988	1987	1989	1987	1988	1989	1989	
1990-1992	3.793		3.524	3.400	3.466		3.410				3.519
	1991		1991	1990	1990		1991				
1993-1995		3.632	3.612	3.453	3.647	3.561	3.403	3.352	3.059	3.183	3.434
		1993	1995	1995	1995	1994	1995	1993	1993	1993	
1996-1998	3.914	3.855				3.810		3.828	3.076	3.337	3.637
	1996	1997				1998		1998	1996	1996	
1999-2001	4.238	4.006	3.583	3.643	4.024		3.504	3.812	3.645	3.595	3.783
	2001	2001	1999	1999	1999		1999	1999	2000	1999	
2002-2004		4.059	3.873	3.565	4.070	3.765	3.814	3.756	3.431	3.649	3.776
		2004	2003	2003	2003	2003	2003	2003	2003	2003	
2005-2007	4.195		4.043	3.965	4.088	3.813	3.784	3.765	3.230	3.894	3.864
	2005		2007	2007	2007	2007	2006	2006	2007	2007	
2008-2011	4.352	3.923	3.926	3.727	4.084	3.881	3.733	4.028	3.940	4.203	3.980
	2009	2008	2011	2011	2011	2008	2010	2009	2011	2011	
Average	3.911	3.712	3.746	3.575	3.670	3.595	3.523	3.623	3.409	3.454	3.622
Range	0.827	0.679	0.519	0.617	0.882	0.586	0.678	0.686	0.881	1.203	0.756

Table 18: Various Measures of Income Inequality during Provincial General Elections, Canada and the Provinces (1976-2011)											
	100/60 Inter-quintile Share Ratio										
	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL	Average
1976-1978			2.343	2.211	2.108	2.258	1.986	2.312	2.597		2.259
			1978	1977	1977	1976	1978	1978	1978		
1979-1981	2.228	2.236		2.303	2.121	2.184		2.168	2.248	2.102	2.199
	1979	1979		1981	1981	1981		1981	1979	1979	
1982-1984	2.265	2.311	2.356				2.286	2.270	2.203	2.139	2.261
	1983	1982	1982				1982	1984	1982	1982	
1985-1986	2.302	2.332	2.505	2.281	2.259	2.204			2.181	2.311	2.297
	1986	1986	1986	1986	1985	1985			1986	1985	
1987-1989		2.236		2.311	2.267	2.197	2.228	2.171	2.313	2.077	2.225
		1989		1988	1987	1989	1987	1988	1989	1989	
1990-1992	2.370		2.312	2.216	2.313		2.262				2.295
	1991		1991	1990	1990		1991				
1993-1995		2.310	2.383	2.288	2.421	2.299	2.254	2.232	2.113	2.128	2.270
		1993	1995	1995	1995	1994	1995	1993	1993	1993	
1996-1998	2.482	2.491				2.540		2.477	2.131	2.207	2.388
	1996	1997				1998		1998	1996	1996	
1999-2001	2.682	2.527	2.394	2.339	2.620		2.330	2.442	2.529	2.444	2.479
	2001	2001	1999	1999	1999		1999	1999	2000	1999	
2002-2004		2.567	2.527	2.409	2.639	2.525	2.486	2.551	2.345	2.448	2.500
		2004	2003	2003	2003	2003	2003	2003	2003	2003	
2005-2007	2.673		2.618	2.596	2.664	2.559	2.495	2.524	2.217	2.576	2.547
	2005		2007	2007	2007	2007	2006	2006	2007	2007	
2008-2011	2.798	2.603	2.571	2.505	2.663	2.629	2.483	2.642	2.635	2.844	2.637
	2009	2008	2011	2011	2011	2008	2010	2009	2011	2011	
Average	2.475	2.401	2.446	2.346	2.408	2.377	2.312	2.379	2.319	2.327	2.379
Range	0.570	0.368	0.305	0.385	0.557	0.445	0.509	0.474	0.523	0.766	0.490
	100/80 Inter-quintile Share Ratio										
	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL	Average
1976-1978			1.613	1.578	1.563	1.646	1.468	1.639	1.727		1.605
			1978	1977	1977	1976	1978	1978	1978		
1979-1981	1.580	1.615		1.629	1.569	1.593		1.576	1.583	1.525	1.584
	1979	1979		1981	1981	1981		1981	1979	1979	
1982-1984	1.596	1.660	1.668				1.614	1.618	1.612	1.575	1.620
	1983	1982	1982				1982	1984	1982	1982	
1985-1986	1.651	1.644	1.716	1.630	1.631	1.594			1.616	1.659	1.643
	1986	1986	1986	1986	1985	1985			1986	1985	
1987-1989		1.603		1.644	1.643	1.606	1.564	1.558	1.600	1.554	1.597
		1989		1988	1987	1989	1987	1988	1989	1989	
1990-1992	1.631		1.622	1.577	1.657		1.602				1.618
	1991		1991	1990	1990		1991				
1993-1995		1.605	1.642	1.626	1.704	1.622	1.606	1.603	1.553	1.553	1.613
		1993	1995	1995	1995	1994	1995	1993	1993	1993	
1996-1998	1.680	1.755				1.750		1.692	1.567	1.582	1.671
	1996	1997				1998		1998	1996	1996	
1999-2001	1.796	1.774	1.655	1.636	1.796		1.632	1.690	1.747	1.708	1.715
	2001	2001	1999	1999	1999		1999	1999	2000	1999	
2002-2004		1.752	1.730	1.696	1.826	1.768	1.724	1.725	1.671	1.712	1.734
		2004	2003	2003	2003	2003	2003	2003	2003	2003	
2005-2007	1.805		1.766	1.795	1.843	1.777	1.757	1.761	1.607	1.745	1.762
	2005		2007	2007	2007	2007	2006	2006	2007	2007	
2008-2011	1.843	1.828	1.717	1.725	1.821	1.780	1.689	1.804	1.779	1.868	1.785
	2009	2008	2011	2011	2011	2008	2010	2009	2011	2011	
Average	1.698	1.693	1.681	1.654	1.705	1.682	1.628	1.667	1.642	1.648	1.670
Range	0.263	0.226	0.154	0.218	0.280	0.187	0.289	0.246	0.227	0.343	0.243

Table 18: Various Measures of Income Inequality during Provincial General Elections, Canada and the Provinces (1976-2011)											
	80/20 Inter-quintile Share Ratio										
	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL	Average
1976-1978			5.271	6.309	5.392	4.699	4.950	5.123	7.038		5.540
			1978	1977	1977	1976	1978	1978	1978		
1979-1981	5.465	4.888		4.920	4.506	4.621		4.406	4.773	4.368	4.743
	1979	1979		1981	1981	1981		1981	1979	1979	
1982-1984	4.955	4.792	4.984				4.468	4.426	3.891	3.894	4.487
	1983	1982	1982				1982	1984	1982	1982	
1985-1986	4.654	4.720	5.026	4.210	4.449	4.462			3.863	4.015	4.425
	1986	1986	1986	1986	1985	1985			1986	1985	
1987-1989		4.978		4.229	4.265	4.191	4.352	4.421	4.207	3.601	4.281
		1989		1988	1987	1989	1987	1988	1989	1989	
1990-1992	4.868		4.763	4.297	4.350		4.129				4.481
	1991		1991	1990	1990		1991				
1993-1995		4.962	4.661	4.231	4.453	4.355	4.061	4.044	3.827	4.228	4.314
		1993	1995	1995	1995	1994	1995	1993	1993	1993	
1996-1998	5.183	5.039				4.538		5.064	3.971	4.119	4.652
	1996	1997				1998		1998	1996	1996	
1999-2001	6.196	5.116	4.721	4.504	5.277		4.359	5.583	4.189	4.395	4.927
	2001	2001	1999	1999	1999		1999	1999	2000	1999	
2002-2004		5.424	4.718	4.233	4.898	4.370	4.527	4.504	4.035	4.631	4.593
		2004	2003	2003	2003	2003	2003	2003	2003	2003	
2005-2007	5.484		5.022	4.580	5.095	4.540	4.558	4.944	4.006	4.739	4.774
	2005		2007	2007	2007	2007	2006	2006	2007	2007	
2008-2011	5.426	4.397	4.585	4.513	5.248	4.546	4.572	4.799	4.037	4.335	4.646
	2009	2008	2011	2011	2011	2008	2010	2009	2011	2011	
Average	5.279	4.924	4.861	4.603	4.793	4.480	4.442	4.731	4.349	4.233	4.670
Range	1.542	1.027	0.686	2.099	1.127	0.507	0.889	1.538	3.211	1.138	1.376
	80/40 Inter-quintile Share Ratio										
	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL	Average
1976-1978			2.262	2.309	2.056	2.068	2.137	2.108	2.205		2.164
			1978	1977	1977	1976	1978	1978	1978		
1979-1981	2.231	2.093		2.173	2.044	2.068		2.12	2.16	2.084	2.122
	1979	1979		1981	1981	1981		1981	1979	1979	
1982-1984	2.247	2.103	2.186				2.173	2.179	2.042	1.973	2.129
	1983	1982	1982				1982	1984	1982	1982	
1985-1986	2.229	2.192	2.249	2.055	2.116	2.158			1.974	2.045	2.127
	1986	1986	1986	1986	1985	1985			1986	1985	
1987-1989		2.159		2.107	2.101	2.111	2.184	2.162	2.127	1.931	2.110
		1989		1988	1987	1989	1987	1988	1989	1989	
1990-1992	2.326		2.172	2.156	2.091		2.129				2.175
	1991		1991	1990	1990		1991				
1993-1995		2.263	2.2	2.124	2.141	2.195	2.119	2.092	1.97	2.05	2.128
		1993	1995	1995	1995	1994	1995	1993	1993	1993	
1996-1998	2.33	2.196				2.177		2.262	1.964	2.11	2.173
	1996	1997				1998		1998	1996	1996	
1999-2001	2.359	2.258	2.165	2.227	2.241		2.147	2.255	2.087	2.104	2.205
	2001	2001	1999	1999	1999		1999	1999	2000	1999	
2002-2004		2.318	2.239	2.102	2.229	2.13	2.212	2.177	2.053	2.132	2.177
		2004	2003	2003	2003	2003	2003	2003	2003	2003	
2005-2007	2.325		2.289	2.209	2.218	2.146	2.154	2.138	2.01	2.232	2.191
	2005		2007	2007	2007	2007	2006	2006	2007	2007	
2008-2011	2.361	2.146	2.286	2.161	2.243	2.18	2.21	2.233	2.214	2.25	2.228
	2009	2008	2011	2011	2011	2008	2010	2009	2011	2011	
Average	2.301	2.192	2.228	2.162	2.148	2.137	2.163	2.173	2.073	2.091	2.167
Range	0.132	0.225	0.123	0.255	0.199	0.127	0.094	0.17	0.25	0.319	0.189

Table 18: Various Measures of Income Inequality during Provincial General Elections, Canada and the Provinces (1976-2011)											
	80/60 Inter-quintile Share Ratio										
	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL	Average
1976-1978			1.453	1.400	1.348	1.371	1.353	1.411	1.504		1.406
			1978	1977	1977	1976	1978	1978	1978		
1979-1981	1.410	1.384		1.414	1.352	1.371		1.376	1.420	1.378	1.388
	1979	1979		1981	1981	1981		1981	1979	1979	
1982-1984	1.419	1.392	1.413				1.417	1.403	1.367	1.358	1.396
	1983	1982	1982				1982	1984	1982	1982	
1985-1986	1.394	1.418	1.460	1.400	1.385	1.383			1.349	1.393	1.398
	1986	1986	1986	1986	1985	1985			1986	1985	
1987-1989		1.395		1.406	1.380	1.368	1.425	1.393	1.445	1.337	1.394
		1989		1988	1987	1989	1987	1988	1989	1989	
1990-1992	1.454		1.425	1.405	1.396		1.412				1.418
	1991		1991	1990	1990		1991				
1993-1995		1.440	1.451	1.407	1.421	1.417	1.403	1.393	1.361	1.370	1.407
		1993	1995	1995	1995	1994	1995	1993	1993	1993	
1996-1998	1.477	1.419				1.452		1.464	1.360	1.395	1.428
	1996	1997				1998		1998	1996	1996	
1999-2001	1.493	1.424	1.447	1.430	1.459		1.428	1.445	1.448	1.430	1.445
	2001	2001	1999	1999	1999		1999	1999	2000	1999	
2002-2004		1.465	1.461	1.421	1.445	1.429	1.442	1.479	1.403	1.430	1.442
		2004	2003	2003	2003	2003	2003	2003	2003	2003	
2005-2007	1.481		1.482	1.446	1.445	1.441	1.420	1.434	1.379	1.476	1.445
	2005		2007	2007	2007	2007	2006	2006	2007	2007	
2008-2011	1.518	1.424	1.497	1.452	1.463	1.477	1.470	1.465	1.481	1.522	1.477
	2009	2008	2011	2011	2011	2008	2010	2009	2011	2011	
Average	1.456	1.418	1.454	1.418	1.409	1.412	1.419	1.426	1.411	1.409	1.423
Range	0.124	0.081	0.085	0.052	0.115	0.109	0.117	0.103	0.155	0.185	0.113
	60/20 Inter-quintile Share Ratio										
	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL	Average
1976-1978			3.627	4.505	4.000	3.426	3.658	3.632	4.679		3.932
			1978	1977	1977	1976	1978	1978	1978		
1979-1981	3.876	3.531		3.480	3.333	3.371		3.203	3.361	3.169	3.416
	1979	1979		1981	1981	1981		1981	1979	1979	
1982-1984	3.492	3.442	3.528				3.153	3.155	2.847	2.868	3.212
	1983	1982	1982				1982	1984	1982	1982	
1985-1986	3.338	3.329	3.443	3.007	3.212	3.227			2.863	2.882	3.163
	1986	1986	1986	1986	1985	1985			1986	1985	
1987-1989		3.567		3.007	3.090	3.064	3.055	3.173	2.911	2.693	3.070
		1989		1988	1987	1989	1987	1988	1989	1989	
1990-1992	3.349		3.342	3.058	3.117		2.924				3.158
	1991		1991	1990	1990		1991				
1993-1995		3.446	3.212	3.007	3.133	3.073	2.894	2.904	2.813	3.087	3.063
		1993	1995	1995	1995	1994	1995	1993	1993	1993	
1996-1998	3.508	3.550				3.126		3.459	2.919	2.952	3.252
	1996	1997				1998		1998	1996	1996	
1999-2001	4.150	3.592	3.262	3.150	3.617		3.053	3.864	2.894	3.073	3.406
	2001	2001	1999	1999	1999		1999	1999	2000	1999	
2002-2004		3.701	3.229	2.979	3.389	3.059	3.140	3.046	2.875	3.238	3.184
		2004	2003	2003	2003	2003	2003	2003	2003	2003	
2005-2007	3.703		3.388	3.167	3.525	3.151	3.209	3.448	2.904	3.210	3.301
	2005		2007	2007	2007	2007	2006	2006	2007	2007	
2008-2011	3.574	3.088	3.063	3.108	3.588	3.078	3.110	3.276	2.726	2.848	3.146
	2009	2008	2011	2011	2011	2008	2010	2009	2011	2011	
Average	3.624	3.472	3.344	3.247	3.400	3.175	3.133	3.316	3.072	3.002	3.279
Range	0.811	0.613	0.565	1.526	0.910	0.367	0.764	0.960	1.954	0.544	0.901

Table 18: Various Measures of Income Inequality during Provincial General Elections, Canada and the Provinces (1976-2011)											
	60/40 Inter-quintile Share Ratio										
	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL	Average
1976-1978			1.556	1.649	1.525	1.508	1.579	1.495	1.466		1.540
			1978	1977	1977	1976	1978	1978	1978		
1979-1981	1.582	1.512		1.537	1.512	1.508		1.541	1.521	1.512	1.528
	1979	1979		1981	1981	1981		1981	1979	1979	
1982-1984	1.584	1.510	1.547				1.533	1.553	1.494	1.453	1.525
	1983	1982	1982				1982	1984	1982	1982	
1985-1986	1.599	1.545	1.541	1.468	1.527	1.560			1.463	1.468	1.521
	1986	1986	1986	1986	1985	1985			1986	1985	
1987-1989		1.547		1.498	1.522	1.543	1.533	1.551	1.472	1.444	1.514
		1989		1988	1987	1989	1987	1988	1989	1989	
1990-1992	1.600		1.524	1.535	1.499		1.508				1.533
	1991		1991	1990	1990		1991				
1993-1995		1.572	1.516	1.509	1.506	1.549	1.510	1.502	1.448	1.496	1.512
		1993	1995	1995	1995	1994	1995	1993	1993	1993	
1996-1998	1.577	1.547				1.500		1.545	1.444	1.512	1.521
	1996	1997				1998		1998	1996	1996	
1999-2001	1.580	1.586	1.496	1.558	1.536		1.504	1.561	1.442	1.471	1.526
	2001	2001	1999	1999	1999		1999	1999	2000	1999	
2002-2004		1.582	1.533	1.480	1.542	1.491	1.534	1.472	1.463	1.491	1.510
		2004	2003	2003	2003	2003	2003	2003	2003	2003	
2005-2007	1.570		1.544	1.527	1.534	1.490	1.516	1.491	1.457	1.512	1.516
	2005		2007	2007	2007	2007	2006	2006	2007	2007	
2008-2011	1.556	1.507	1.527	1.488	1.534	1.476	1.503	1.524	1.495	1.478	1.509
	2009	2008	2011	2011	2011	2008	2010	2009	2011	2011	
Average	1.581	1.545	1.532	1.525	1.524	1.514	1.525	1.524	1.469	1.484	1.522
Range	0.044	0.078	0.060	0.181	0.044	0.084	0.076	0.088	0.079	0.068	0.080
	40/20 Inter-quintile Share Ratio										
	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL	Average
1976-1978			2.331	2.732	2.623	2.272	2.317	2.430	3.192		2.557
			1978	1977	1977	1976	1978	1978	1978		
1979-1981	2.450	2.336		2.264	2.205	2.235		2.078	2.210	2.096	2.234
	1979	1979		1981	1981	1981		1981	1979	1979	
1982-1984	2.205	2.279	2.280				2.056	2.031	1.905	1.974	2.104
	1983	1982	1982				1982	1984	1982	1982	
1985-1986	2.088	2.154	2.235	2.049	2.103	2.068			1.957	1.963	2.077
	1986	1986	1986	1986	1985	1985			1986	1985	
1987-1989		2.306		2.007	2.030	1.986	1.992	2.045	1.978	1.865	2.026
		1989		1988	1987	1989	1987	1988	1989	1989	
1990-1992	2.093		2.193	1.993	2.080		1.939				2.060
	1991		1991	1990	1990		1991				
1993-1995		2.192	2.119	1.993	2.080	1.984	1.917	1.933	1.942	2.063	2.025
		1993	1995	1995	1995	1994	1995	1993	1993	1993	
1996-1998	2.225	2.295				2.084		2.239	2.022	1.952	2.136
	1996	1997				1998		1998	1996	1996	
1999-2001	2.626	2.265	2.180	2.023	2.355		2.031	2.476	2.008	2.089	2.228
	2001	2001	1999	1999	1999		1999	1999	2000	1999	
2002-2004		2.340	2.107	2.014	2.197	2.052	2.047	2.069	1.965	2.172	2.107
		2004	2003	2003	2003	2003	2003	2003	2003	2003	
2005-2007	2.359		2.194	2.073	2.297	2.115	2.116	2.312	1.994	2.123	2.176
	2005		2007	2007	2007	2007	2006	2006	2007	2007	
2008-2011	2.298	2.049	2.006	2.089	2.340	2.085	2.069	2.149	1.823	1.927	2.084
	2009	2008	2011	2011	2011	2008	2010	2009	2011	2011	
Average	2.293	2.246	2.183	2.124	2.231	2.098	2.054	2.176	2.091	2.022	2.152
Range	0.538	0.291	0.325	0.739	0.593	0.288	0.400	0.542	1.369	0.307	0.539

Table 18: Various Measures of Income Inequality during Provincial General Elections, Canada and the Provinces (1976-2011)											
	Bottom 99% Share of Income										
	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL	Average
1982-1984	93.0%	89.9%	93.2%				96.5%	95.3%	97.1%	97.5%	94.6%
	1983	1982	1982				1982	1984	1982	1982	
1985-1986	93.0%	92.5%	95.1%	95.9%	92.2%	95.1%			96.7%	97.5%	94.8%
	1986	1986	1986	1986	1985	1985			1986	1985	
1987-1989		92.3%		95.5%	90.8%	93.5%	96.8%	95.0%	95.1%	97.0%	94.5%
		1989		1988	1987	1989	1987	1988	1989	1989	
1990-1992	91.2%		95.6%	96.0%	90.3%		96.5%				93.9%
	1991		1991	1990	1990		1991				
1993-1995		88.1%	94.9%	95.1%	91.5%	92.8%	96.1%	95.2%	95.6%	97.4%	94.1%
		1993	1995	1995	1995	1994	1995	1993	1993	1993	
1996-1998	91.8%	86.8%				94.3%		94.6%	95.6%	96.7%	93.3%
	1996	1997				1998		1998	1996	1996	
1999-2001	91.8%	83.8%	94.6%	94.0%	88.4%		95.7%	93.9%	95.4%	96.5%	92.7%
	2001	2001	1999	1999	1999		1999	1999	2000	1999	
2002-2004		83.7%	94.1%	94.3%	88.6%	93.8%	95.7%	94.0%	95.5%	96.0%	92.9%
		2004	2003	2003	2003	2003	2003	2003	2003	2003	
2005-2007	88.5%		91.6%	93.6%	87.6%	93.0%	96.4%	94.1%	96.5%	96.5%	93.1%
	2005		2007	2007	2007	2007	2006	2006	2007	2007	
2008-2011	90.5%	80.6%	91.6%	93.6%	89.3%	93.5%	95.7%	95.2%	96.6%	94.8%	92.1%
	2009	2008	2011	2011	2011	2008	2010	2009	2011	2011	
Average	91.4%	87.2%	93.8%	94.8%	89.8%	93.7%	96.2%	94.7%	96.0%	96.7%	93.4%
Range	4.5%	11.9%	4.0%	2.4%	3.8%	2.3%	1.1%	1.4%	2.0%	2.7%	3.6%
	Bottom 95% Share of Income										
	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL	Average
1982-1984	80.0%	73.9%	80.3%				89.6%	86.6%	90.2%	91.9%	84.6%
	1983	1982	1982				1982	1984	1982	1982	
1985-1986	81.0%	79.1%	84.5%	86.6%	79.6%	87.1%			89.7%	91.8%	84.9%
	1986	1986	1986	1986	1985	1985			1986	1985	
1987-1989		79.4%		87.8%	77.5%	85.6%	89.2%	86.8%	88.1%	90.3%	85.6%
		1989		1988	1987	1989	1987	1988	1989	1989	
1990-1992	79.2%		87.6%	88.4%	77.6%		89.6%				84.5%
	1991		1991	1990	1990		1991				
1993-1995		74.4%	86.5%	87.1%	78.6%	80.1%	88.6%	87.0%	88.4%	90.5%	84.6%
		1993	1995	1995	1995	1994	1995	1993	1993	1993	
1996-1998	79.0%	72.8%				86.8%		85.8%	88.6%	88.7%	83.6%
	1996	1997				1998		1998	1996	1996	
1999-2001	79.7%	68.6%	86.7%	86.1%	74.3%		88.5%	85.3%	87.8%	89.3%	82.9%
	2001	2001	1999	1999	1999		1999	1999	2000	1999	
2002-2004		68.2%	85.4%	86.6%	74.5%	85.8%	88.9%	85.8%	88.7%	89.3%	83.7%
		2004	2003	2003	2003	2003	2003	2003	2003	2003	
2005-2007	75.3%		80.6%	84.7%	74.3%	85.0%	89.2%	85.6%	90.4%	88.5%	83.7%
	2005		2007	2007	2007	2007	2006	2006	2007	2007	
2008-2011	77.5%	62.9%	78.9%	85.2%	76.7%	85.5%	88.1%	86.6%	89.7%	84.4%	81.6%
	2009	2008	2011	2011	2011	2008	2010	2009	2011	2011	
Average	78.8%	72.4%	83.8%	86.6%	76.6%	85.1%	89.0%	86.2%	89.1%	89.4%	83.7%
Range	5.7%	16.5%	8.7%	3.7%	5.3%	7.0%	1.5%	1.7%	2.6%	7.5%	6.0%
	Bottom 90% Share of Income										
	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL	Average
1982-1984	67.1%	61.4%	69.2%				81.6%	77.6%	84.3%	84.0%	75.0%
	1983	1982	1982				1982	1984	1982	1982	
1985-1986	69.5%	67.1%	74.4%	77.3%	68.3%	78.8%			83.3%	84.8%	75.4%
	1986	1986	1986	1986	1985	1985			1986	1985	
1987-1989		68.4%		79.3%	66.0%	77.9%	81.1%	78.2%	82.6%	82.6%	77.0%
		1989		1988	1987	1989	1987	1988	1989	1989	
1990-1992	67.9%		78.6%	80.0%	66.7%		82.3%				75.1%
	1991		1991	1990	1990		1991				
1993-1995		63.1%	77.8%	78.5%	67.0%	71.6%	81.1%	78.5%	82.1%	83.2%	75.9%
		1993	1995	1995	1995	1994	1995	1993	1993	1993	
1996-1998	66.9%	62.1%				78.7%		78.2%	82.6%	81.1%	74.9%
	1996	1997				1998		1998	1996	1996	
1999-2001	68.3%	57.7%	78.3%	78.1%	62.1%		81.1%	77.7%	81.7%	82.2%	74.1%
	2001	2001	1999	1999	1999		1999	1999	2000	1999	
2002-2004		56.6%	76.5%	78.8%	62.2%	78.1%	81.9%	78.3%	82.9%	82.0%	75.3%
		2004	2003	2003	2003	2003	2003	2003	2003	2003	
2005-2007	64.5%		70.6%	76.4%	62.5%	77.6%	82.3%	77.9%	84.4%	80.5%	75.2%
	2005		2007	2007	2007	2007	2006	2006	2007	2007	
2008-2011	66.1%	51.1%	67.1%	76.8%	64.8%	77.9%	80.8%	78.5%	83.7%	74.5%	72.1%
	2009	2008	2011	2011	2011	2008	2010	2009	2011	2011	
Average	67.2%	60.9%	74.1%	78.2%	65.0%	77.2%	81.5%	78.1%	83.1%	81.7%	74.7%
Range	5.0%	17.3%	11.5%	3.6%	6.2%	7.2%	1.5%	0.9%	2.7%	10.3%	6.6%
Source: Statistics Canada, 2013 (CANSIM Tables 202-0703 and 204-0001)											

Summary statistics for model variables. Descriptive statistics for each of the model variables are summarized, below; these include the mean, standard deviation, minimum value, maximum value, and number of observations for each variable (**Table 19**). Again, "overall" statistics are based on all 95 observations, "between" statistics are based on the summary statistics of each of the ten provinces, and "within" statistics refer to the variation of observations within each province. A comparison of the descriptive statistics for this model and the previous model regarding federal general elections is provided below.

Across all observations, the voter turnout at provincial general elections (69.9 per cent) is slightly higher than is the voter turnout at federal general elections (67.0 per cent, **Table 15**). The lowest voter turnout in the dataset is 40.6 per cent (Alberta 2008) while the highest is 87.6 per cent (Prince Edward Island 1986) (**Table 19,** see also **Table 4**); this range is greater than was the case for federal general elections (**Table 15**). Indeed, the somewhat greater variation in provincial voter turnout for provincial as opposed to federal general elections is also evidenced by the somewhat larger standard deviation (10.6 per cent (**Table 19)** compared to 7.8 per cent, in the previous dataset (**Table 15**)).

Fittingly, the average income inequality is lower for this dataset (0.360, **Table 19**) compared to that for federal general elections (0.363, **Table 15**). The highest income inequality across all observations is a Gini coefficient of 0.405 (British Columbia 2009) while the lowest is 0.315 (Prince Edward Island 1989) (**Table 19,** see also **Table 4**). This range, as well as the standard deviation for this variable, is slightly smaller than is the case for the federal general elections data (**Table 15**).

Table 19: Model Variable Descriptive Statistics – Canadian Provincial General Elections, at the Provincial Level (1976-2011)						
Variable	**Analysis**	**Mean**	**Standard Deviation**	**Minimum Value**	**Maximum Value**	**Observations**
Voter Turnout	overall	0.699	0.106	0.406	0.876	N = 95
	between		0.086	0.532	0.829	n = 10
	within		0.067	0.520	0.827	T-bar = 9.5
Income Inequality (Gini)	overall	0.360	0.019	0.315	0.405	N = 95
	between		0.010	0.347	0.379	n = 10
	within		0.017	0.327	0.409	T-bar = 9.5
Lack of Election Competitiveness	overall	0.121	0.105	0.001	0.479	N = 95
	between		0.056	0.068	0.245	n = 10
	within		0.091	-0.076	0.415	T-bar = 9.5
Electoral Area Size	overall	30989.010	27672.980	3803.000	124919.000	N = 95
	between		27471.340	4490.182	92547.200	n = 10
	within		7480.082	6474.811	63360.810	T-bar = 9.5
Population Mobility	overall	0.021	0.008	0.006	0.056	N = 95
	between		0.007	0.008	0.033	n = 10
	within		0.004	0.010	0.044	T-bar = 9.5
100/20 Income Ratio	overall	7.779	1.112	5.595	12.154	N = 95
	between		0.623	6.993	8.988	n = 10
	within		0.948	6.359	12.769	T-bar = 9.5
100/40 Income Ratio	overall	3.613	0.295	3.000	4.352	N = 95
	between		0.147	3.409	3.911	n = 10
	within		0.261	3.148	4.361	T-bar = 9.5
100/60 Income Ratio	overall	2.376	0.181	1.986	2.844	N = 95
	between		0.055	2.312	2.475	n = 10
	within		0.174	2.050	2.892	T-bar = 9.5
100/80 Income Ratio	overall	1.669	0.086	1.468	1.868	N = 95
	between		0.026	1.628	1.705	n = 10
	within		0.083	1.508	1.889	T-bar = 9.5
80/20 Income Ratio	overall	4.653	0.548	3.601	7.039	N = 95
	between		0.312	4.233	5.279	n = 10
	within		0.465	3.966	7.343	T-bar = 9.5
80/40 Income Ratio	overall	2.162	0.091	1.931	2.361	N = 95
	between		0.065	2.073	2.301	n = 10
	within		0.067	2.002	2.321	T-bar = 9.5
80/60 Income Ratio	overall	1.422	0.041	1.337	1.522	N = 95
	between		0.018	1.409	1.456	n = 10
	within		0.038	1.350	1.535	T-bar = 9.5
60/20 Income Ratio	overall	3.269	0.349	2.693	4.679	N = 95
	between		0.191	3.002	3.624	n = 10
	within		0.299	2.857	4.876	T-bar = 9.5
60/40 Income Ratio	overall	1.520	0.040	1.442	1.649	N = 95
	between		0.031	1.470	1.581	n = 10
	within		0.027	1.463	1.644	T-bar = 9.5
40/20 Income Ratio	overall	2.148	0.201	1.823	3.192	N = 95
	between		0.089	2.022	2.293	n = 10
	within		0.183	1.881	3.250	T-bar = 9.5
Bottom 99% Income Ratio	overall	0.935	0.034	0.806	0.975	N = 80
	between		0.031	0.872	0.967	n = 10
	within		0.016	0.869	0.988	T-bar = 8
Bottom 95% Income Ratio	overall	0.839	0.061	0.629	0.919	N = 80
	between		0.058	0.724	0.894	n = 10
	within		0.024	0.744	0.909	T-bar = 8
Bottom 90% Income Ratio	overall	0.749	0.079	0.511	0.848	N = 80
	between		0.077	0.609	0.831	n = 10
	within		0.027	0.651	0.824	T-bar = 8

As expected given the higher average voter turnout, the average percentage point difference between the popular vote for the first and second place parties (lack of election competitiveness) is less for provincial general elections (12.1 percentage points, **Table 19**) than was the case federally (15.9 percentage points, **Table 15**) – that is, provincial general elections seem more competitive. Across the entire dataset the most competitive provincial general election was in New Brunswick in 1978 (0.1 percentage point difference between popular vote for first and second place parties) and the least competitive was in Newfoundland in 2007 (47.9 percentage point difference in popular vote for the top two parties) (**Table 19,** see also **Table 18**). Again, the range and standard deviation for this variable (**Table 18**) is slightly smaller than is the case for the federal general elections data (**Table 15**).

Again supportive of the higher average overall voter turnout at provincial general elections, the average overall electoral area is also smaller for provincial general elections (30,989 people represented by each provincial MP, **Table 19**) compared to federal (84,928 people represented by each federal MP, **Table 15**). The observations for this variable ranged from a low of 3,803 (Prince Edward Island, 1978) to a high of 124,919 (Ontario 2011) (**Table 19**, see also **Table 18**). The range and standard deviation for electoral area size is greater for provincial general elections (**Table 19**) than for federal general elections (**Table 15**), over this time period.

Lastly, the overall average population mobility during provincial general elections years (2.1 per cent, **Table 19**) is slightly higher than was the case for federal general election years (2.0 per cent, **Table 15**), though the range and standard deviation are lower for provincial general elections. The lowest population mobility during a provincial

general election year was in Quebec in 1998 (0.6 per cent of the population had inter-provincially or internationally migrated to Quebec) and the highest was in Alberta in 1979 (5.6 per cent of the population) (**Table 19**, see also **Table 18**).

Comparing the standard deviation of each of these variables overall, between, and within provinces, there seems to be greater variation overall for each of the variables in this model. Further, voter turnout, electoral area size, and population mobility seem to vary more between provinces than within provinces; while income inequality and lack of election competitiveness vary more within provinces (over time) than between provinces. Each voter turnout and income inequality observation (**Table 4**), as well as each observation for the other model variables (**Table 18**) are detailed elsewhere.

Regression Results for Alternative Measures of Income Inequality

The results of the regression analyses using these alternative measures of income inequality are included in the main report ("Other Measures of Income Inequality" section of the provincial general elections data results discussion) and are detailed, below (**Table 20**). In general, income inequality has the expected statistically significant relationship with voter turnout in those regression models that include variables comparing the highest income receivers to the other segments of the population; these results are most similar to those using the Gini coefficient as the measure of income inequality. As with the federal general elections data, the relationship between provincial income inequality and voter turnout at federal general elections is generally less strong among the other indicators of income inequality. Again, this might have suggested not all income inequality is equally impactful on turnout; however, the relationship between income inequality and voter turnout disappears once time is added to the models.

Table 20: Additional Cross-sectional Time-series Estimates of the Determinants of Voter Turnout for Canadian Provincial General Elections, at the Provincial Level (1976-2011) - Various Income Inequality Measures

Variable	100/20 Inter-quintile Share Ratio				100/40 Inter-quintile Share Ratio				100/60 Inter-quintile Share Ratio				100/80 Inter-quintile Share Ratio				80/20 Inter-quintile Share Ratio			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
Income Inequality	-0.0199	0.0010	0.009	0.001	0.129**	-0.101**	-0.006	-0.007	0.189**	-0.179***	-0.031	-0.018	0.474***	-0.366***	-0.012	-0.011	0.076**	0.018	-0.012	-0.011
	(0.013)	(0.007)	(0.012)	(0.008)	(0.041)	(0.029)	(0.040)	(0.034)	(0.064)	(0.042)	(0.065)	(0.054)	(0.089)	(0.090)	(0.136)	(0.118)	(0.023)	(0.014)	(0.136)	(0.118)
Lack of Competitive Election	-0.008	-0.0430	-0.010	-0.018	-0.032	-0.018	-0.005	-0.016	-0.033	-0.015	-0.003	-0.016	-0.042	-0.014	-0.006	-0.017	-0.012	-0.0390	-0.006	-0.017
	(0.088)	(0.062)	(0.062)	(0.060)	(0.094)	(0.061)	(0.063)	(0.061)	(0.099)	(0.061)	(0.063)	(0.061)	(0.089)	(0.062)	(0.063)	(0.061)	(0.082)	(0.062)	(0.063)	(0.061)
Electoral Area Size	1.39E-06	-2.25E-06**	-5.82E-07	-1.26E-06*	-1.14E-06	-1.69E-06*	-3.19E-07	-1.22E-06*	-1.06E-06	-1.64E-06*	-2.73E-07	-1.23E-06*	-3.30E-06	-1.58E-06*	-3.38E-07	-1.24E-06*	-2.58E-07	-2.35E-06**	-3.38E-07	-1.24E-06*
	(2.23E-06)	(6.90E-07)	(1.18E-06)	(6.19E-07)	(2.21E-06)	(6.72E-07)	(1.17E-06)	(6.18E-07)	(2.17E-06)	(6.61E-07)	(1.16E-06)	(6.10E-07)	(1.92E-06)	(6.50E-07)	(1.15E-06)	(6.15E-07)	(2.09E-06)	(6.81E-07)	(1.15E-06)	(6.15E-07)
Population Mobility	0.542	-1.9420	-2.118	-1.923	1.169	-2.017	-2.179	-1.912	1.734	-1.953	-2.169	-1.915	0.377	-2.049	-2.165	-1.910	-0.135	-2.168	-2.165	-1.910
	(2.122)	(1.253)	(1.890)	(1.331)	(2.297)	(1.215)	(1.897)	(1.326)	(2.427)	(1.200)	(1.893)	(1.326)	(2.232)	(1.213)	(1.899)	(1.327)	(1.991)	(1.248)	(1.899)	(1.327)
Intercept (baseline)	0.500***	0.806***	-0.121*	0.838***	0.236***	1.158***	-0.106*	0.868***	0.241***	1.215***	-0.099	0.883***	-0.023	1.400***	-0.106*	0.861***	0.370***	0.731***	-0.106*	0.861***
	(0.037)	(0.067)	(0.051)	(0.080)	(0.059)	(0.109)	(0.051)	(0.122)	(0.065)	(0.105)	(0.052)	(0.128)	(0.065)	(0.152)	(0.052)	(0.190)	(0.036)	(0.074)	(0.052)	(0.190)
Year1 (referent)			Referent	Referent			Referent	Referent			Referent	Referent			Referent	Referent			Referent	Referent
Year2 (dummy)			0.523***	-0.027			0.556***	-0.029			0.580***	-0.029			0.559***	-0.028			0.559***	-0.028
			(0.075)	(0.027)			(0.094)	(0.024)			(0.098)	(0.024)			(0.133)	(0.023)			(0.133)	(0.023)
Year3 (dummy)			0.722***	-0.025			0.771***	-0.026			0.807***	-0.026			0.774***	-0.026			0.774***	-0.026
			(0.099)	(0.031)			(0.127)	(0.027)			(0.134)	(0.027)			(0.186)	(0.027)			(0.186)	(0.027)
Year4 (dummy)			0.776***	-0.046			0.835***	-0.046			0.875***	-0.046			0.836***	-0.046			0.836***	-0.046
			(0.106)	(0.031)			(0.140)	(0.028)			(0.148)	(0.028)			(0.206)	(0.028)			(0.206)	(0.028)
Year5 (dummy)			0.837***	-0.022			0.897***	-0.024			0.938***	-0.023			'0.898***	-0.023			'0.898***	-0.023
			(0.115)	(0.031)			(0.146)	(0.027)			(0.154)	(0.027)			(0.212)	(0.027)			(0.212)	(0.027)
Year6 (dummy)			0.859***	-0.006			0.920***	-0.008			0.962***	-0.007			'0.9204***	-0.007			'0.9204***	-0.007
			(0.115)	(0.034)			(0.148)	(0.030)			(0.156)	(0.030)			(0.214)	(0.030)			(0.214)	(0.030)
Year7 (dummy)			0.825***	-0.041			0.887***	-0.042			0.930***	-0.042			0.888***	-0.042			0.888***	-0.042
			(0.112)	(0.032)			(0.147)	(0.028)			(0.156)	(0.028)			(0.215)	(0.028)			(0.215)	(0.028)
Year8 (dummy)			0.808***	-0.058			0.876***	-0.057			0.921***	-0.056			0.876***	-0.058			0.876***	-0.058
			(0.121)	(0.031)			(0.156)	(0.030)			(0.165)	(0.030)			(0.224)	(0.030)			(0.224)	(0.030)
Year9 (dummy)			0.781***	-0.073*			0.856***	-0.072*			0.903***	-0.070*			0.855***	-0.073*			0.855***	-0.073*
			(0.124)	(0.029)			(0.158)	(0.030)			(0.168)	(0.031)			(0.229)	(0.031)			(0.229)	(0.031)
Year10 (dummy)			0.756***	-0.108***			0.828***	-0.106***			0.875***	-0.104**			0.828**	-0.107**			0.828**	-0.107**
			(0.125)	(0.029)			(0.161)	(0.030)			(0.172)	(0.031)			(0.232)	(0.032)			(0.232)	(0.032)
Year11 (dummy)			0.741***	-0.118***			0.816***	-0.116***			0.865***	-0.114***			0.816**	-0.117***			0.816**	-0.117***
			(0.130)	(0.028)			(0.165)	(0.030)			(0.175)	(0.031)			(0.237)	(0.032)			(0.237)	(0.032)
Year12 (dummy)			0.694***	-0.168***			0.767***	-0.165***			0.818***	-0.162***			0.767**	-0.166***			0.767**	-0.166***
			(0.130)	(0.028)			(0.169)	(0.031)			(0.180)	(0.033)			(0.239)	(0.034)			(0.239)	(0.034)
Model (F-test, Wald)	1.26	12.19*	15.72***	77.24***	3.48*	25.52***	15.53***	77.1***	3.40*	31.80***	15.59***	77.12***	8.65***	30.82***	15.54***	77.25***	3.56*	14.00*	15.83***	77.16***
R2	0.066	0.076	0.797	0.601	0.164	0.310	0.795	0.601	0.161	0.372	0.796	0.601	0.328	0.366	0.795	0.601	0.167	0.073	0.798	0.600
rho_ar	0.661	0.661	0.383	0.383	0.568	0.568	0.386	0.386	0.524	0.524	0.387	0.387	0.510	0.510	0.383	0.383	0.669	0.669	0.384	0.384
N	85	95	85	95	85	95	85	95	85	95	85	95	85	95	85	95	85	95	85	95

Statistical significance: * <0.05, ** <0.01, * <0.001 (Standard errors in parentheses)**

Continued - Table 20: Additional Cross-sectional Time-series Estimates of the Determinants of Voter Turnout for Canadian Provincial General Elections, at the Provincial Level (1976-2011) - Various Income Inequality Measures

Variable	80/40 Inter-quintile Share Ratio				80/60 Inter-quintile Share Ratio				60/20 Inter-quintile Share Ratio				60/40 Inter-quintile Share Ratio				40/20 Inter-quintile Share Ratio			
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 1**	**Model 2**	**Model 3**	**Model 4**	**Model 1**	**Model 2**	**Model 3**	**Model 4**	**Model 1**	**Model 2**	**Model 3**	**Model 4**	**Model 1**	**Model 2**	**Model 3**	**Model 4**
Income Inequality	0.396***	-0.144	-0.014	-0.022	0.664***	-0.572**	-0.197	-0.102	0.149***	0.045*	0.053	0.008	0.693***	0.230	0.175	0.027	0.234***	0.072*	0.080	0.012
	(0.064)	(0.095)	(0.104)	(0.089)	(0.096)	(0.178)	(0.228)	(0.195)	(0.032)	(0.021)	(0.038)	(0.026)	(0.075)	(0.214)	(0.241)	(0.194)	(0.050)	(0.035)	(0.062)	(0.043)
Lack of Competitive Election	-0.025	-0.036	-0.006	-0.017	-0.0240	-0.029	-0.001	-0.016	-0.013	-0.034	-0.008	-0.018	-0.020	-0.046	-0.010	-0.019	0.005	-0.032	-0.005	-0.017
	(0.073)	(0.062)	(0.063)	(0.061)	(0.075)	(0.060)	(0.062)	(0.060)	(0.077)	(0.061)	(0.061)	(0.060)	(0.062)	(0.062)	(0.062)	(0.061)	(0.077)	(0.061)	(0.062)	(0.060)
Electoral Area Size	-2.99E-06	-2.12E-06**	-3.28E-07	-1.23E-06*	-3.47E-06	-1.04E-06**	-2.52E-07	-1.26E-06	-1.10E-06	-2.40E-06***	-6.95E-07	-1.30E-06	-3.54E-06*	-2.33E-06**	-5.14E-07	-1.28E-06*	-1.08E-06	-2.37E-06***	-5.79E-07	-1.29E-06*
	(1.88E-06)	(6.83E-07)	(1.17E-06)	(6.10E-07)	(1.76E-06)	(6.83E-07)	(1.16E-06)	(6.00E-07)	(1.95E-06)	(6.81E-07)	(1.15E-06)	(6.14E-07)	(1.50E-06)	(6.83E-07)	(1.15E-06)	(6.04E-07)	(1.96E-06)	(6.74E-07)	(1.15E-06)	(6.11E-07)
Population Mobility	-1.285	-1.974	-2.193	-1.920	-1.535	-1.877	-2.239	-1.954	-0.597	-0.344	-2.039	-1.984	-2.208	-1.870	-2.191	-1.932	-0.835	-2.395	-2.04	-1.979
	(1.786)	(1.238)	(1.896)	(1.326)	(1.863)	(1.213)	(1.880)	(1.323)	(1.883)	(1.236)	(1.867)	(1.331)	(1.529)	(1.250)	(1.892)	(1.325)	(1.877)	(1.238)	(1.874)	(1.333)
Intercept (baseline)	-0.081	1.119***	-0.108*	0.889***	-0.151**	1.617***	-0.102*	0.988***	0.278***	0.672***	-0.118*	0.814***	-0.246***	0.462	-0.105*	0.803**	0.261***	0.666***	-0.119*	0.814***
	(0.045)	(0.208)	(0.050)	(0.195)	(0.050)	(0.256)	(0.050)	(0.276)	(0.034)	(0.077)	(0.049)	(0.109)	(0.039)	(0.325)	(0.051)	(0.300)	(0.035)	(0.081)	(0.050)	(0.115)
Year1 (referent)			Referent	Referent			Referent	Referent			Referent	Referent			Referent	Referent			Referent	Referent
Year2 (dummy)			0.562***	-0.029			0.698**	-0.029			0.453***	-0.023			0.386	-0.028			0.453***	-0.023
			(0.145)	(0.023)			(0.195)	(0.023)			(0.091)	(0.028)			(0.236)	(0.023)			(0.095)	(0.028)
Year3 (dummy)			0.780***	-0.027			0.975**	-0.028			0.630***	-0.020			0.537	-0.025			0.629***	-0.020
			(0.195)	(0.028)			(0.269)	(0.027)			(0.122)	(0.034)			(0.319)	(0.028)			(0.129)	(0.034)
Year4 (dummy)			0.845***	-0.047			1.066**	-0.048			0.678***	-0.040			0.572	-0.046			0.677***	-0.041
			(0.217)	(0.028)			(0.301)	(0.028)			(0.133)	(0.035)			(0.353)	(0.028)			(0.141)	(0.035)
Year5 (dummy)			0.908***	-0.024			1.140**	-0.024			0.733***	-0.016			0.623	-0.022			0.732***	-0.017
			(0.228)	(0.027)			(0.315)	(0.027)			(0.143)	(0.035)			(0.367)	(0.027)			(0.151)	(0.035)
Year6 (dummy)			0.932***	-0.008			1.169**	-0.007			0.754***	-0.000			0.642	-0.007			0.753***	-0.001
			(0.231)	(0.030)			(0.320)	(0.030)			(0.144)	(0.038)			(0.371)	(0.031)			(0.153)	(0.038)
Year7 (dummy)			0.899***	-0.043			1.139**	-0.042			0.722***	-0.035			0.609	-0.041			0.721***	-0.035
			(0.230)	(0.028)			(0.322)	(0.028)			(0.141)	(0.036)			(0.370)	(0.028)			(0.150)	(0.036)
Year8 (dummy)			0.887***	-0.058*			1.131**	-0.056			0.704***	-0.052			0.596	-0.058			0.703***	-0.053
			(0.236)	(0.029)			(0.328)	(0.030)			(0.148)	(0.036)			(0.372)	(0.030)			(0.157)	(0.036)
Year9 (dummy)			0.866**	-0.073*			1.113**	-0.070*			0.675***	-0.069*			0.575	-0.073*			0.673***	-0.070*
			(0.236)	(0.028)			(0.330)	(0.029)			(0.151)	(0.032)			(0.372)	(0.029)			(0.161)	(0.032)
Year10 (dummy)			0.838**	-0.108***			1.085**	-0.105***			0.656***	-0.102**			0.548	-0.108***			0.653***	-0.103**
			(0.237)	(0.028)			(0.331)	(0.029)			(0.149)	(0.034)			(0.371)	(0.029)			(0.159)	(0.034)
Year11 (dummy)			0.827**	-0.119***			1.073**	-0.115***			0.639***	-0.113**			0.535	-0.118***			0.637***	-0.114***
			(0.239)	(0.027)			(0.332)	(0.028)			(0.154)	(0.033)			(0.373)	(0.028)			(0.164)	(0.032)
Year12 (dummy)			0.778**	-0.167***			1.030**	-0.161***			0.600***	-0.161***			0.488	-0.167***			0.596***	-0.162***
			(0.242)	(0.027)			(0.339)	(0.030)			(0.150)	(0.035)			(0.371)	(0.028)			(0.160)	(0.035)
Model (F-test, Wald)	10.43***	14.57*	15.51***	76.97***	13.37***	22.91***	15.68***	76.63***	6.35***	17.00**	16.14***	76.81***	23.19***	13.31*	15.74***	77.51***	6.29***	16.80**	16.03***	76.79***
R2	0.370	0.131	0.795	0.601	0.430	0.280	0.797	0.602	0.264	0.107	0.801	0.600	0.567	0.122	0.797	0.601	0.262	0.092	0.800	0.600
rho_ar	0.656	0.656	0.388	0.388	0.600	0.600	0.395	0.395	0.667	0.667	0.390	0.390	0.640	0.640	0.379	0.379	0.672	0.672	0.390	0.390
N	85	95	85	95	85	95	85	95	85	95	85	95	85	95	85	95	85	95	85	95

Statistical significance: * <0.05, ** <0.01, * <0.001 (Standard errors in parentheses)**

Continued - Table 20: Additional Cross-sectional Time-series Estimates of the Determinants of Voter Turnout for Canadian Provincial General Elections, at the Provincial Level (1976-2011) - Various Income Inequality Measures												
Variable	**Bottom 99% Income Share**				**Bottom 95% Income Share**				**Bottom 90% Income Share**			
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 1**	**Model 2**	**Model 3**	**Model 4**	**Model 1**	**Model 2**	**Model 3**	**Model 4**
Income Inequality	1.148***	0.982	-0.308	0.464	1.031***	0.446	-0.193	0.170	1.149***	0.3520	-0.201	0.144
	(0.142)	(0.515)	(0.506)	(0.478)	(0.159)	(0.300)	(0.310)	(0.281)	(0.173)	(0.251)	(0.279)	(0.239)
Lack of Competitive Election	-0.024	-0.020	-0.025	-0.027	-0.003	-0.017	-0.028	-0.026	0.010	-0.015	-0.031	-0.025
	(0.067)	(0.068)	(0.065)	(0.066)	(0.070)	(0.068)	(0.065)	(0.067)	(0.072)	(0.068)	(0.065)	(0.068)
Electoral Area Size	-2.95E-06	-1.27E-06	-1.04E-06	-1.17E-06	-1.23E-06	-1.42E-06	-1.04E-06	-1.27E-06	-1.95E-07	-1.39E-06	-1.09E-06	-1.24E-06
	(1.64E-06)	(7.36E-07)	(1.31E-06)	(6.81E-07)	(1.69E-06)	(7.69E-07)	(1.30E-06)	(7.05E-07)	(1.70E-06)	(8.00E-07)	(1.30E-06)	(7.37E-07)
Population Mobility	1.042	-0.672	1.072	-1.685	2.043	-0.803	0.989	-1.829	2.609	-0.809	0.867	-1.804
	(1.975)	(1.927)	(2.283)	(2.047)	(2.055)	(1.968)	(2.299)	(2.119)	(2.101)	(1.982)	(2.322)	(2.168)
Intercept (baseline)	-0.363***	-0.176	-0.122*	0.373	-0.315***	0.375	-0.120*	0.674*	-0.273***	0.485*	-0.116	0.708**
	(0.4634)	(0.514)	(0.058)	(0.482)	(0.049)	(0.288)	(0.059)	(0.275)	(0.050)	(0.227)	(0.060)	(0.223)
Year1 (referent)												
Year2 (dummy)												
Year3 (dummy)			Referent	Referent			Referent	Referent			Referent	Referent
Year4 (dummy)			0.728*	-0.024			0.657**	-0.024			0.657***	-0.024
			(0.307)	(0.027)			(0.183)	(0.027)			(0.156)	(0.027)
Year5 (dummy)			0.993*	0.003			0.891**	0.001			0.888***	0.000
			(0.418)	(0.027)			(0.248)	(0.027)			(0.212)	(0.028)
Year6 (dummy)			1.104*	0.019			0.989**	0.016			0.983***	0.014
			(0.460)	(0.032)			(0.272)	(0.032)			(0.232)	(0.032)
Year7 (dummy)			1.114*	-0.013			0.992**	-0.016			0.982***	-0.017
			(0.474)	(0.029)			(0.276)	(0.029)			(0.233)	(0.029)
Year8 (dummy)			1.112*	-0.028			0.988**	-0.031			0.978***	-0.033
			(0.481)	(0.032)			(0.283)	(0.032)			(0.240)	(0.032)
Year9 (dummy)			1.103*	-0.041			0.978**	-0.046			0.968***	-0.048
			(0.480)	(0.030)			(0.281)	(0.029)			(0.239)	(0.029)
Year10 (dummy)			1.075*	-0.074*			0.950**	-0.081**			0.940***	-0.083**
			(0.481)	(0.031)			(0.283)	(0.029)			(0.240)	(0.029)
Year11 (dummy)			1.053*	-0.083**			0.928**	-0.089**			0.917***	-0.091**
			(0.479)	(0.030)			(0.282)	(0.029)			(0.240)	(0.029)
Year12 (dummy)			1.004*	-0.132***			0.878**	-0.138***			0.866**	-0.139***
			(0.480)	(0.029)			(0.281)	(0.029)			(0.238)	(0.028)
Model (F-test, Wald)	18.50***	16.46**	16.30***	61.32***	14.31***	14.16*	16.41***	60.83***	12.55***	13.79*	16.54***	61.19***
R2	0.569	0.195	0.819	0.586	0.505	0.156	0.819	0.586	0.473	0.130	0.821	0.584
rho_ar	0.631	0.631	0.379	0.379	0.650	0.650	0.371	0.371	0.656	0.656	0.3640	0.364
N	70	80	70	80	70	80	70	80	70	80	70	80

Statistical significance: * <0.05, ** <0.01, * <0.001 (Standard errors in parentheses); No 99%, 95%, 90% data for Year1 or Year2.**

Appendix F: National General Elections in Late-modern Capitalist Democrac
Additional Descriptive Statistics and Income Inequality Variables

Below is a discussion regarding additional descriptive statistics for the varia in this model, particularly the control variables, additional income inequality variab and summary statistics for all model variables. This is followed by the regression re of the national-level determinants of voter turnout at national parliamentary election based on these additional income inequality measures. As discussed in the main rep these results generally support those found using the Gini coefficient as the measure income inequality.

Additional Descriptive Statistics

Control variables. The observations for each of national-level control varia during each national general election in the dataset are described below (**Table 21**). average and range is also included for each variable and for each country in this tab comparative purposes.

Regarding election competitiveness, the average percentage point difference between the popular vote for the first and second place parties is smallest, i.e., mean elections are most competitive, in Finland (2.2%), the Netherlands (3.4%), Belgium (3.9%), and Switzerland (4.0%) and greatest, i.e., elections are least competitive, in (19.1%), Sweden (16.1%), Canada (14.7%), and Ireland (14.3%). The sample avera for this variable consistently declined in each successive time period, except the last on average, elections generally became increasingly more competitive over time. T seems to counter the hypothesis that election competitiveness increases voter turnou sample average voter turnout consistently declined in each successive time period.

Ireland reports the smallest average number of people represented by each Member of Parliament (MP), over this time period (23,283), followed by each of the social democracies: Sweden (25,288), Finland (25,585), Norway (27,143), and Denmark (30,291). On the opposite end of the scale, sample countries reporting the highest average number of people represented by each Member of Parliament are: the United States (625,145 people per representative), Japan (251,773), Germany (134,789), and Australia (126,861). Canada has a slightly smaller average electoral area size (99,654 people per representative) than the overall average for this sample (101,560). As with voter turnout, sample average electoral area size increased over each successive time period; this supports the expected relationship between these two variables.

Amongst the sample nations, average net migration across all time periods is highest in: Australia (3.4%), Canada (2.9%), Switzerland (2.7%), Spain (2.2%) and the United States (1.9%); and lowest in: Japan (0.2%), Portugal (0.7%), Finland (0.7%), France (0.8%), and the Netherlands (0.8%). The sample average for this variable fluctuated over each successive time period, in a non-linear manner.

Table 21: Lack of Election Competitiveness, Electoral Area Size, and Population Mobility during National General Elections, Late Modern Capitalist Democracies (1980-2013)									
	1980-1984	1985-1989	1990-1994	1995-1999	2000-2004	2005-2009	2010-2013	Average	Range
Country	**Australia**								
Lack of Election Competitiveness	12.0%	11.5%	6.4%	3.2%	1.8%	7.1%	9.9%	7.4%	10.2%
Electoral Area Size	114,136	109,982	118,463	125,050	130,987	140,362	149,051	126,861	39,068
Population Mobility	3.0%	4.1%	2.0%	2.8%	3.4%	5.4%	3.4%	3.4%	3.4%
Country	**Austria**								
Lack of Election Competitiveness	4.4%	1.8%	9.0%	8.0%	5.8%	2.1%	2.8%	4.9%	7.2%
Electoral Area Size	41,329	41,436	42,749	43,546	44,185	45,355	46,040	43,520	4,711
Population Mobility	0.4%	1.2%	3.5%	0.3%	2.6%	1.9%	1.8%	1.7%	3.2%
Country	**Belgium**								
Lack of Election Competitiveness	6.5%	5.3%	3.3%	2.1%	0.4%	6.0%	3.7%	3.9%	6.0%
Electoral Area Size	46,496	46,632	47,375	67,872	68,891	70,878	73,523	60,238	27,028
Population Mobility	0.1%	0.5%	1.1%	0.7%	1.9%	3.2%	1.4%	1.3%	3.0%
Country	**Canada**								
Lack of Election Competitiveness	21.9%	11.1%	22.1%	19.1%	11.2%	8.7%	9.0%	14.7%	13.4%
Electoral Area Size	89,257	90,149	96,561	99,508	103,044	107,052	112,003	99,654	22,746
Population Mobility	1.5%	3.3%	2.5%	2.5%	3.3%	3.8%	3.2%	2.9%	2.3%
Country	**Denmark**								
Lack of Election Competitiveness	13.3%	9.5%	16.4%	11.9%	2.2%	2.0%	1.9%	8.2%	14.5%
Electoral Area Size	29,244	29,284	29,556	30,180	30,708	31,240	31,826	30,291	2,582
Population Mobility	0.2%	0.6%	1.3%	1.4%	0.9%	1.6%	1.3%	1.0%	1.4%
Country	**Finland**								
Lack of Election Competitiveness	4.6%	1.0%	2.7%	4.4%	0.2%	0.8%	1.3%	2.2%	4.4%
Electoral Area Size	24,144	24,663	25,197	25,691	26,006	26,453	26,943	25,585	2,799
Population Mobility	0.5%	0.4%	0.9%	0.4%	0.6%	1.3%	0.9%	0.7%	1.0%
Country	**France**								
Lack of Election Competitiveness	26.9%	15.9%	0.1%	15.9%	12.0%	4.9%	14.9%	12.9%	26.8%
Electoral Area Size	113,722	100,133	101,992	103,964	107,111	110,877	113,287	107,298	13,589
Population Mobility	0.6%	0.5%	0.2%	0.3%	1.7%	0.8%	1.0%	0.7%	1.5%
Country	**Germany**								
Lack of Election Competitiveness	4.4%	2.6%	7.7%	5.8%	0.0%	5.9%	8.4%	5.0%	8.4%
Electoral Area Size	150,536	150,343	120,740	122,504	136,683	133,050	129,670	134,789	29,796
Population Mobility	0.4%	2.4%	4.0%	1.0%	1.1%	0.0%	0.7%	1.4%	4.0%
Country	**Greece**								
Lack of Election Competitiveness	12.2%	5.2%	7.9%	3.4%	2.9%	7.1%	2.4%	5.9%	9.8%
Electoral Area Size	32,603	33,352	34,534	35,892	36,627	37,310	37,653	35,424	5,050
Population Mobility	1.2%	1.6%	4.5%	2.8%	0.5%	0.5%	0.4%	1.6%	4.0%
Country	**Ireland**								
Lack of Election Competitiveness	8.3%	15.9%	14.6%	11.4%	19.0%	14.2%	16.7%	14.3%	10.7%
Electoral Area Size	20,957	21,270	21,414	22,154	23,699	26,099	27,389	23,283	6,432
Population Mobility	-1.4%	-3.3%	-0.3%	2.3%	5.1%	2.5%	1.1%	0.8%	8.3%
Country	**Italy**								
Lack of Election Competitiveness	3.0%	7.7%	7.1%	0.5%	12.9%	5.9%	7.6%	6.4%	12.4%
Electoral Area Size	89,721	89,871	90,143	90,291	91,066	94,269	98,393	91,965	8,672
Population Mobility	0.5%	0.0%	0.3%	0.4%	3.2%	3.2%	1.5%	1.3%	3.2%

Table 21: Lack of Election Competitiveness, Electoral Area Size, and Population Mobility during National General Elections, Late Modern Capitalist Democracies (1980-2013)

	1980-1984	1985-1989	1990-1994	1995-1999	2000-2004	2005-2009	2010-2013	Average	Range
Country	**Japan**								
Lack of Election Competitiveness	28.1%	32.3%	21.8%	10.7%	10.3%	10.1%	20.2%	19.1%	22.2%
Electoral Area Size	231,764	238,307	242,887	252,140	265,393	266,067	265,854	251,773	34,304
Population Mobility	0.2%	-0.5%	0.4%	0.0%	0.5%	0.3%	0.3%	0.2%	1.0%
Country	**Netherlands**								
Lack of Election Competitiveness	1.8%	2.4%	1.8%	4.3%	6.9%	5.3%	1.3%	3.4%	5.6%
Electoral Area Size	95,335	97,784	101,172	104,159	107,504	109,365	111,280	103,800	15,946
Population Mobility	0.6%	0.9%	1.5%	1.0%	0.9%	0.3%	0.3%	0.8%	1.2%
Country	**New Zealand**								
Lack of Election Competitiveness	3.7%	3.9%	6.5%	7.0%	20.4%	6.5%	19.8%	9.7%	16.7%
Electoral Area Size	33,840	33,712	35,814	31,395	33,002	34,784	36,380	34,133	4,986
Population Mobility	-0.1%	-0.3%	3.4%	1.1%	3.4%	1.5%	1.7%	1.5%	3.7%
Country	**Norway**								
Lack of Election Competitiveness	5.5%	11.3%	19.9%	19.7%	3.1%	11.6%	4.0%	10.7%	16.8%
Electoral Area Size	26,540	26,016	25,986	26,714	27,515	27,917	29,312	27,143	3,326
Population Mobility	0.6%	0.9%	1.1%	1.3%	1.5%	3.7%	3.0%	1.7%	3.1%
Country	**Portugal**								
Lack of Election Competitiveness	13.6%	18.5%	21.5%	10.7%	2.4%	11.9%	10.6%	12.7%	19.1%
Electoral Area Size	39,587	40,089	43,398	43,896	45,070	46,084	45,973	43,442	6,498
Population Mobility	-0.7%	-1.5%	1.5%	1.7%	1.7%	0.9%	0.9%	0.7%	3.2%
Country	**Spain**								
Lack of Election Competitiveness	21.8%	15.0%	4.1%	1.2%	7.8%	4.5%	15.6%	10.0%	20.6%
Electoral Area Size	108,299	110,339	111,624	113,197	118,282	127,919	131,870	117,361	23,571
Population Mobility	-0.1%	-0.2%	0.8%	2.0%	6.8%	5.0%	1.3%	2.2%	7.0%
Country	**Sweden**								
Lack of Election Competitiveness	22.0%	24.2%	19.3%	13.5%	24.6%	8.8%	0.6%	16.1%	24.0%
Electoral Area Size	23,852	24,096	24,839	25,343	25,584	26,233	27,072	25,288	3,219
Population Mobility	0.4%	1.6%	1.8%	0.7%	1.6%	2.9%	2.1%	1.6%	2.5%
Country	**Switzerland**								
Lack of Election Competitiveness	0.5%	3.3%	2.5%	0.9%	3.3%	9.4%	7.8%	4.0%	8.9%
Electoral Area Size	31,925	32,760	34,323	35,455	36,427	37,864	39,557	35,473	7,632
Population Mobility	1.3%	2.0%	3.6%	0.9%	2.6%	4.6%	4.0%	2.7%	3.6%
Country	**United Kingdom**								
Lack of Election Competitiveness	14.8%	11.4%	7.5%	12.5%	9.0%	2.8%	7.1%	9.3%	12.0%
Electoral Area Size	86,682	87,397	88,429	88,520	90,064	94,431	96,539	90,294	9,857
Population Mobility	-0.2%	0.2%	0.4%	0.9%	1.6%	1.4%	1.4%	0.8%	1.8%
Country	**United States**								
Lack of Election Competitiveness	6.1%	9.1%	6.8%	0.9%	2.5%	9.4%	4.0%	5.5%	8.6%
Electoral Area Size	532,401	557,087	589,500	626,769	661,505	692,411	716,343	625,145	183,942
Population Mobility	1.6%	1.6%	1.7%	3.1%	1.9%	1.7%	1.6%	1.9%	1.6%
Average Lack of Election Comp.	11.2%	10.4%	9.9%	7.9%	7.6%	6.9%	8.1%	8.9%	13.2%
Average Electoral Area Size	93,446	94,510	96,509	100,678	105,207	108,858	111,712	101,560	21,703
Average Population Mobility	0.5%	0.8%	1.7%	1.3%	2.2%	2.2%	1.6%	1.5%	3.1%

Sources:
Lack of Election Competitiveness and Electoral Area Size: Nohlen, Grotz, Harmann, 2001; Nohlen, 2005; Nohlen & Stover, 2010; Australian Electoral Commission, 2011; New Zealand Electoral Commission, 2013; Japanese Ministry of Internal Affairs and Communications, 2005; Alvarez-Rivera, 2013; Parliament of Canada, 2012; United States Federal Election Commission, 2004, 2006, 2008, 2010, 2012; World Bank, 2013; United Nations, 2013; Norwegian Social Science Data Services, 2014
Population Mobility: World Bank, 2013.

Notes: Where data were available for more than one year during the time period, an average of the available data was utilised. Population mobility refers to net migration, i.e., the net total of migrants during the period, that is, the total number of immigrants less the annual number of emigrants, including both citizens and noncitizens; these data are five-year estimates, and shown as proportion of population. (Source: World Bank, 2013)

Additional income inequality measures. The four regression models were repeated using five measures of income inequality, as alternatives to the Gini coefficient that was used in the models presented in the main study. These five additional measures of income inequality were:

- the 90/10 interdecile proportion ratio (the ratio of the upper bound value of the ninth decile (the 10 per cent of people with highest income) to that of the upper bound value of the first decile);
- the 90/50 interdecile proportion ratio (the ratio of the upper bound value of the ninth decile (the 10 per cent of people with highest income) to the median income);
- the 50/10 interdecile proportion ratio (the ratio of median income to the upper bound value of the first decile);
- the 80/20 interdecile share ratio (the share of all income received by the top quintile divided by the share of the first, or the ratio of the average income of the top quintile to that of the first); and
- the 90/10 interdecile share ratio (the share of all income received by the top decile divided by the share of the first, or the ratio of the average income of the top decile to that of the first).

The sample average income inequality generally increased following a decrease in the late-1980s, for the P90/P10, S80/S20, and S90/S10 measures, while the measures comparing median income (P90/P50 and P50/P10) experienced little change, on average, over the time period. Across these measures, average income inequality over the selected time period (1980-2013) is highest in the United States, Spain, Portugal, Greece, Japan,

and the United Kingdom and lowest in Denmark, Finland, Norway, Sweden, Austria, and the Netherlands, with the remaining countries falling in-between these. Indeed, among these late-modern capitalist democracies, generally, the social democracies seem to have lower income inequality and the southern European and liberal democracies seem to have higher income inequality with the conservative democracies in the middle. More specifically, Denmark, Norway, Finland, and Sweden had the lowest average income inequality for all of these measures except for the S90/S10 ratio, for which the Netherlands had the third lowest while Norway and Sweden were fourth and fifth lowest respectively (Denmark and Finland were the lowest). At the opposite end of the spectrum, the United States had the greatest average income inequality of all the nations, for five of these measures and the second greatest for the sixth (P90/P50). Canada's average income inequality was just slightly above the overall average, for each of these measures. A summary of these measures of income inequality is presented, below (**Table 22**).

Table 22: Various Measures of Income Inequality during National General Elections, Late-modern Capitalist Democracies (1980-2013)								
	1980-1984	1985-1989	1990-1994	1995-1999	2000-2004	2005-2009	2010-2013	Average
Country	**Australia**							
Interdecile ratio (P90/P10)				4.0	4.2	4.5	4.5	4.3
Interdecile ratio (P90/P50)				1.9	2.0	2.0	2.0	2.0
Interdecile ratio (P50/P10)				2.1	2.1	2.3	2.2	2.2
Interquintile ratio (S80/S20)				5.0	5.2	5.7	5.7	5.4
Interdecile ratio (S90/S10)				7.7	7.9	9.3	8.9	8.5
Country	**Austria**							
Interdecile ratio (P90/P10)					3.2	3.3	3.2	3.2
Interdecile ratio (P90/P50)					1.8	1.8	1.7	1.8
Interdecile ratio (P50/P10)					1.8	1.8	1.9	1.8
Interquintile ratio (S80/S20)					3.9	3.8	3.9	3.9
Interdecile ratio (S90/S10)					5.9	5.7	5.9	5.8
Country	**Belgium**							
Interdecile ratio (P90/P10)					3.4	3.4	3.4	3.4
Interdecile ratio (P90/P50)					1.7	1.7	1.7	1.7
Interdecile ratio (P50/P10)					1.9	2.0	2.0	2.0
Interquintile ratio (S80/S20)					3.9	3.9	3.9	3.9
Interdecile ratio (S90/S10)					5.7	5.7	5.6	5.7
Country	**Canada**							
Interdecile ratio (P90/P10)	4.1	3.8	3.8	3.9	4.1	4.1	4.1	4.0
Interdecile ratio (P90/P50)	1.9	1.8	1.9	1.9	1.9	1.9	1.9	1.9
Interdecile ratio (P50/P10)	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Interquintile ratio (S80/S20)	4.9	4.6	4.5	4.8	5.2	5.2	5.3	4.9
Interdecile ratio (S90/S10)	8.0	7.3	7.3	8.0	8.8	8.7	8.9	8.2
Country	**Denmark**							
Interdecile ratio (P90/P10)		2.8	2.8	2.6	2.7	2.8	2.9	2.8
Interdecile ratio (P90/P50)		1.5	1.5	1.5	1.5	1.6	1.6	1.5
Interdecile ratio (P50/P10)		1.8	1.8	1.7	1.7	1.8	1.8	1.8
Interquintile ratio (S80/S20)		3.1	3.2	3.0	3.2	3.4	3.6	3.3
Interdecile ratio (S90/S10)		4.3	4.5	4.0	4.4	4.9	5.3	4.6
Country	**Finland**							
Interdecile ratio (P90/P10)		2.6		2.6	3.0	3.2	3.2	2.9
Interdecile ratio (P90/P50)		1.5		1.6	1.7	1.7	1.7	1.6
Interdecile ratio (P50/P10)		1.7		1.6	1.8	1.9	1.9	1.8
Interquintile ratio (S80/S20)		2.9		3.0	3.6	3.8	3.7	3.4
Interdecile ratio (S90/S10)		4.1		4.2	5.1	5.4	5.4	4.8
Country	**France**							
Interdecile ratio (P90/P10)				3.4	3.5	3.4	3.6	3.5
Interdecile ratio (P90/P50)				1.9	1.9	1.9	1.9	1.9
Interdecile ratio (P50/P10)				1.8	1.8	1.8	1.9	1.8
Interquintile ratio (S80/S20)				4.1	4.2	4.3	4.5	4.3
Interdecile ratio (S90/S10)				6.1	6.3	6.7	7.2	6.6
Country	**Germany**							
Interdecile ratio (P90/P10)		3.0	3.0	3.3	3.3	3.6	3.6	3.3
Interdecile ratio (P90/P50)		1.7	1.8	1.8	1.8	1.8	1.8	1.8
Interdecile ratio (P50/P10)		1.7	1.7	1.8	1.9	2.0	1.9	1.8
Interquintile ratio (S80/S20)		3.5	3.6	3.9	4.1	4.3	4.3	3.9
Interdecile ratio (S90/S10)		5.1	5.3	6.0	6.3	6.7	6.7	6.0
Country	**Greece**							
Interdecile ratio (P90/P10)					4.5	4.5	4.6	4.5
Interdecile ratio (P90/P50)					2.1	2.0	2.0	2.0
Interdecile ratio (P50/P10)					2.2	2.2	2.3	2.2
Interquintile ratio (S80/S20)		6.2	6.2	6.4	5.7	5.7	6.0	6.0
Interdecile ratio (S90/S10)		11.5	10.9	11.5	9.6	9.7	10.8	10.7
Country	**Ireland**							
Interdecile ratio (P90/P10)					4.2	3.9		4.1
Interdecile ratio (P90/P50)					1.9	2.0		1.9
Interdecile ratio (P50/P10)					2.2	2.0		2.1
Interquintile ratio (S80/S20)					5.0	4.8		4.9
Interdecile ratio (S90/S10)					7.3	7.4		7.3
Country	**Italy**							
Interdecile ratio (P90/P10)	3.8		3.6	4.7	4.3	4.2	4.3	4.1
Interdecile ratio (P90/P50)	1.8		1.8	1.9	2.0	2.0	1.9	1.9
Interdecile ratio (P50/P10)	2.1		2.1	2.4	2.2	2.1	2.2	2.2
Interquintile ratio (S80/S20)	4.5		4.3	5.9	5.6	5.2	5.6	5.2
Interdecile ratio (S90/S10)	7.2		6.6	10.6	10.0	9.0	10.2	8.9
Country	**Japan**							
Interdecile ratio (P90/P10)		4.0		4.5	5.0	5.1		4.6
Interdecile ratio (P90/P50)		1.8		1.9	2.0	2.0		1.9
Interdecile ratio (P50/P10)		2.2		2.4	2.5	2.6		2.4
Interquintile ratio (S80/S20)		5.0		5.7	6.1	6.1		5.7
Interdecile ratio (S90/S10)		8.6		10.2	10.9	10.5		10.1

Table 22: Various Measures of Income Inequality during National General Elections, Late-modern Capitalist Democracies (1980-2013)								
	1980-1984	1985-1989	1990-1994	1995-1999	2000-2004	2005-2009	2010-2013	Average
Country	**Netherlands**							
Interdecile ratio (P90/P10)		2.9	3.3	3.4	3.3	3.3	3.4	3.3
Interdecile ratio (P90/P50)		1.8	1.8	1.8	1.8	1.8	1.8	1.8
Interdecile ratio (P50/P10)		1.6	1.8	1.9	1.8	1.8	1.8	1.8
Interquintile ratio (S80/S20)		3.8	4.2	4.4	4.3	4.2	4.3	4.2
Interdecile ratio (S90/S10)		5.6	6.4	6.7	6.7	6.7	6.9	6.5
Country	**New Zealand**							
Interdecile ratio (P90/P10)		3.4	3.9	4.1	4.3	4.2		4.0
Interdecile ratio (P90/P50)		1.9	2.0	2.1	2.1	2.1		2.0
Interdecile ratio (P50/P10)		1.8	2.0	1.9	2.1	2.0		2.0
Interquintile ratio (S80/S20)		4.1	5.0	5.3	5.5	5.2		5.0
Interdecile ratio (S90/S10)		6.0	8.0	8.9	8.8	8.2		8.0
Country	**Norway**							
Interdecile ratio (P90/P10)		2.8		2.9	2.8	3.0	2.9	2.9
Interdecile ratio (P90/P50)		1.6		1.6	1.6	1.6	1.6	1.6
Interdecile ratio (P50/P10)		1.8		1.8	1.8	1.8	1.8	1.8
Interquintile ratio (S80/S20)		3.2		3.5	3.9	3.7	3.7	3.6
Interdecile ratio (S90/S10)		4.5		5.4	6.3	5.9	6.0	5.6
Country	**Portugal**							
Interdecile ratio (P90/P10)					5.4	5.0	4.6	5.0
Interdecile ratio (P90/P50)					2.4	2.3	2.2	2.3
Interdecile ratio (P50/P10)					2.2	2.2	2.1	2.2
Interquintile ratio (S80/S20)					6.9	6.3	5.7	6.3
Interdecile ratio (S90/S10)					11.8	10.4	9.3	10.5
Country	**Spain**							
Interdecile ratio (P90/P10)					4.9	4.6	5.3	4.9
Interdecile ratio (P90/P50)					2.0	2.0	2.1	2.0
Interdecile ratio (P50/P10)					2.4	2.3	2.6	2.4
Interquintile ratio (S80/S20)					6.0	5.7	6.6	6.1
Interdecile ratio (S90/S10)					10.6	10.4	13.1	11.4
Country	**Sweden**							
Interdecile ratio (P90/P10)	2.4		2.5	2.5	2.8	3.3	3.3	2.8
Interdecile ratio (P90/P50)	1.6		1.5	1.6	1.7	1.7	1.7	1.6
Interdecile ratio (P50/P10)	1.5		1.6	1.6	1.7	1.9	2.0	1.7
Interquintile ratio (S80/S20)	2.7		2.9	2.9	3.4	4.0	4.0	3.3
Interdecile ratio (S90/S10)	3.5		3.8	4.1	4.9	6.0	6.1	4.7
Country	**Switzerland**							
Interdecile ratio (P90/P10)						3.6		3.6
Interdecile ratio (P90/P50)						1.8		1.8
Interdecile ratio (P50/P10)						2.0		2.0
Interquintile ratio (S80/S20)						4.6		4.6
Interdecile ratio (S90/S10)						7.3		7.3
Country	**United Kingdom**							
Interdecile ratio (P90/P10)		3.7	4.4	4.4	4.2	4.2	4.1	4.2
Interdecile ratio (P90/P50)		2.0	2.1	2.1	2.0	2.1	2.1	2.1
Interdecile ratio (P50/P10)		1.9	2.1	2.1	2.1	2.1	2.0	2.0
Interquintile ratio (S80/S20)		4.8	5.9	5.6	5.6	5.7	5.6	5.5
Interdecile ratio (S90/S10)		7.2	9.5	9.2	9.3	9.8	10.0	9.2
Country	**USA**							
Interdecile ratio (P90/P10)	5.5	5.6		5.4	5.4	5.9	6.1	5.7
Interdecile ratio (P90/P50)	2.0	2.1		2.1	2.1	2.2	2.2	2.1
Interdecile ratio (P50/P10)	2.7	2.7		2.6	2.6	2.7	2.7	2.7
Interquintile ratio (S80/S20)	6.4	6.7		6.9	6.9	7.8	7.9	7.1
Interdecile ratio (S90/S10)	10.8	11.7		12.5	12.7	15.3	15.9	13.2
Overall Average								
Interdecile ratio (P90/P10)	4.0	3.5	3.4	3.7	3.9	3.9	3.9	3.8
Interdecile ratio (P90/P50)	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.8
Interdecile ratio (P50/P10)	2.1	1.9	1.9	2.0	2.0	2.1	2.1	2.0
Interquintile ratio (S80/S20)	4.6	4.4	4.4	4.7	4.9	4.9	5.0	4.7
Interdecile ratio (S90/S10)	7.4	6.9	6.9	7.7	8.0	8.1	8.4	7.6
Overall Range								
Interdecile ratio (P90/P10)	3.1	3.0	1.9	2.9	2.7	3.1	3.2	2.8
Interdecile ratio (P90/P50)	0.4	0.6	0.6	0.6	0.9	0.7	0.6	0.6
Interdecile ratio (P50/P10)	1.2	1.1	0.5	1.0	0.9	0.9	0.9	0.9
Interquintile ratio (S80/S20)	3.7	3.8	3.3	4.0	3.7	4.3	4.3	3.9
Interdecile ratio (S90/S10)	7.3	7.6	7.1	8.5	8.3	10.4	10.6	8.5

Source: Organization for Economic Co-operation and Development (OECD), 2013.

Notes:

The P90/P10 ratio is the ratio of the upper bound value of the ninth decile (i.e. the 10% of people with highest income) to that of the upper bound value of the first decile.

The P90/P50 ratio is the ratio of the upper bound value of the ninth decile to the median income

The P50/P10 ratio is the ratio of median income to the upper bound value of the first decile

The S80/S20 ratio is the share of all income received by the top quintile divided by the share of the first, or the ratio of the average income of the top quintile to that of the first.

The S90/S10 ratio is the share of all income received by the top decile divided by the share of the first, or the ratio of the average income of the top decile to that of the first.

Summary statistics for model variables. Model variable statistics are summarized, below (**Table 23**). "Overall" statistics are based on all observations for each variable; "between" statistics are based on the summary statistics of each of the twenty-one nations, for each variable; and "within" statistics measure variation between each observation and the summary statistics for each nation while also factoring in the overall mean, for each variable.

Across all 147 observations, the average voter turnout is 71.9 per cent; the lowest voter turnout is 35.3 per cent (Switzerland 1995-1999); and the highest voter turnout is 94.4 per cent (Italy 1985-1989) (**Table 23**, see also **Table 6**). The lowest average voter turnout across the observations for each nation is 39.0 per cent (Switzerland) while the highest is 87.7 per cent (Belgium). Regarding the "within" statistics for this variable, the smallest sum of the deviation of each observation from its national average plus the overall average ($x_{nt} - \overline{x}_n + \overline{x}_{nt}$) is 54.7 per cent (Italy 2010-2013) while the largest is 82.2 per cent (Portugal 1980-1984). Indeed, Italy has the greatest range (26.1 percentage points) in voter turnout observations over this time period (1980-2013) while Portugal has the second greatest (25.7 percentage points), compared to all the other nations in this dataset.

There are 98 observations for the income inequality variable, across all of these, the average Gini coefficient is 0.296; the highest income inequality is 0.380 (United States 2010-2013); and the lowest income inequality is 0.198 (Sweden 1980-1984) (**Table 23**, see also **Table 6**). The lowest average Gini coefficient across the observations within each nation is 0.231 (Denmark) while the highest is 0.360 (Portugal).

Table 23: Model Variable Decriptive Statistics – National General Elections, Late-modern Capitalist Democracies (1980-2013)						
Variable	**Analysis**	**Mean**	**Standard Deviation**	**Minimum Value**	**Maximum Value**	**Observations**
Voter Turnout	overall	0.719	0.137	0.353	0.944	N = 147
	between		0.129	0.390	0.877	n = 21
	within		0.053	0.547	0.822	T = 7
Income Inequality (Gini)	overall	0.296	0.044	0.198	0.380	N = 98
	between		0.040	0.231	0.360	n = 21
	within		0.015	0.250	0.334	T = 4.7
Lack of Election Competitiveness	overall	0.089	0.069	0.000	0.323	N = 147
	between		0.047	0.022	0.191	n = 21
	within		0.051	-0.067	0.229	T = 7
Electoral Area Size	overall	101560.100	130276.400	20957.000	716343.000	N = 147
	between		132105.200	23283.140	625145.100	n = 21
	within		15406.470	8815.986	192758.000	T = 7
Population Mobility	overall	0.015	0.014	-0.033	0.068	N = 147
	between		0.008	0.002	0.034	n = 21
	within		0.012	-0.026	0.061	T = 7
Interdecile Ratio (P90/P10)	overall	3.810	0.852	2.400	6.100	N = 94
	between		0.801	2.767	5.650	n = 21
	within		0.245	3.160	4.360	T = 4.5
Interdecile Ratio (P90/P50)	overall	1.862	0.198	1.500	2.400	N = 94
	between		0.192	1.533	2.300	n = 21
	within		0.056	1.722	1.962	T = 4.5
Interdecile Ratio (P50/P10)	overall	2.024	0.280	1.500	2.700	N = 94
	between		0.256	1.717	2.667	n = 21
	within		0.092	1.799	2.308	T = 4.5
Interquintile Ratio (S80/S20)	overall	4.768	1.174	2.700	7.900	N = 97
	between		1.091	3.250	7.100	n = 21
	within		0.368	3.848	5.568	T = 4.6
Interdecile Ratio (S90/S10)	overall	7.773	2.602	3.500	15.900	N = 97
	between		2.390	4.567	13.150	n = 21
	within		0.907	5.423	10.523	T = 4.6

The smallest "within" statistic for this variable is 0.250 (New Zealand 1985-1989) while the largest is 0.334 (Sweden 2010-2013). Of all the sample nations, Sweden has the greatest range (0.071) in Gini coefficient observations and New Zealand the second greatest (0.066) over the observed time period (1980-2013).

For lack of election competitiveness there were 147 observations, the average being an 8.9 percentage point difference in the popular vote for the first and second place party; the least competitive election was in Japan (1985-1989) where this difference was 32.3 percentage points; the most competitive was in Germany (2000-2004) where this difference was 0.01 percentage points (**Table 23**, see also **Table 21**). Regarding the average for each nation, the least competitive elections seem to be in Japan (average 19.1 percentage point difference between the popular vote for the first and second place parties) while the most competitive seem to be in Finland (average difference of 2.2 percentage points).

The average electoral area size across all 147 observations is 101,560 people per representative; the largest is 716,343 (United States 2010-2013); and the smallest is 20,957 (Ireland 1980-1984) (**Table 23**, see also **Table 21**). Similarly, on average over the time period for these data (1980-2013), the largest number of persons per Member of Parliament (MP) is in the United States (625,145) while the smallest is in Ireland (23,283).

Lastly, the average net migration as a proportion of the population is 1.5 per cent, across all 147 observations for this variable – from a high of 6.8 per cent (Spain, 2000-2004) to a low of -3.3 per cent (Ireland, 1985-1989). On average, over the time period for this dataset (1980-2013), the highest population mobility seems to be in Australia (3.4 per cent) while the lowest seems to be in Japan (0.2 per cent) (**Table 23**, see also **Table 21**).

Similar to the Canadian data, the standard deviation of voter turnout seems to vary more overall than between or within nations and this is true for all model variables except Electoral Area size, which has the greatest variation between nations. There seems to be greater variation between nations than within them, for each of voter turnout, income inequality, and electoral area size; conversely, lack of election competitiveness and population mobility both seem to vary more within each nation (over time) than between nations. These variables are described in more detail, elsewhere, including a complete listing of each voter turnout and income inequality observation (**Table 6**), as well as each observation for the other model variables (**Table 21**).

Regression Results for Alternative Measures of Income Inequality

A summary of the regression analyses of these various income inequality determinants of national voter turnout during parliamentary general elections (1980-2013) is included in the main section while statistical data are presented below (**Table 24**). In general, these results mirror those of the Gini coefficient, i.e., the fixed- and random-effects models not controlling for time show income inequality to have a statistically significant negative relationship with voter turnout; however, this relationship disappears once time is added to the models.

Table 24: Additional Cross-sectional Time-series Estimates of the Determinants of Voter Turnout in Late-modern Capitalist Democracies (1980-2013) - Various International Income Inequality Measures																				
Variable	**Interdecile ratio (P90/P10)**				**Interdecile ratio (P90/P50)**				**Interdecile ratio (P50/P10)**				**Interquintile ratio (S80/S20)**				**Interdecile ratio (S90/S10)**			
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 1**	**Model 2**	**Model 3**	**Model 4**	**Model 1**	**Model 2**	**Model 3**	**Model 4**	**Model 1**	**Model 2**	**Model 3**	**Model 4**	**Model 1**	**Model 2**	**Model 3**	**Model 4**
Income Inequality	0.019	-0.034	-0.005	-0.004	0.360**	-0.069	0.131	0.042	0.094	-0.100	-0.047	-0.038	-0.014	-0.032*	-0.017	-0.007	-0.016	-0.015**	-0.010	-0.004
	(0.035)	(0.019)	(0.032)	(0.020)	(0.099)	(0.079)	(0.155)	(0.083)	(0.070)	(0.052)	(0.068)	(0.052)	(0.024)	(0.013)	(0.022)	(0.014)	(0.010)	(0.006)	(0.009)	(0.006)
Lack of Election Competiveness	0.077	-0.041	-0.026	-0.111	-0.046	-0.038	-0.036	-0.118	0.050	-0.035	-0.021	-0.110	0.081	-0.053	-0.052	-0.114	0.081	-0.052	-0.049	-0.112
	(0.121)	(0.098)	(0.112)	(0.098)	(0.109)	(0.099)	(0.111)	(0.100)	(0.118)	(0.096)	(0.111)	(0.097)	(0.122)	(0.095)	(0.117)	(0.096)	(0.120)	(0.094)	(0.116)	(0.096)
Electoral Area Size	6.83E-07	-3.10E-07	3.30E-07	-3.22E-07*	-2.11E-07	-4.02E-07*	2.82E-07	-3.72E-07*	4.49E-07	-3.14E-07	3.97E-07	-2.96E-07	9.14E-07	-2.70E-07	4.50E-07	-3.00E-07	1.08E-06*	-2.32E-07	4.65E-07	-2.84E-07
	(5.49E-07)	(1.70E-07)	(6.08E-07)	(1.62E-07)	(5.30E-07)	(1.57E-07)	(5.95E-07)	(1.49E-07)	(5.61E-07)	(1.68E-07)	(6.12E-07)	(1.57E-07)	(5.66E-07)	(1.69E-07)	(6.34E-07)	(1.60E-07)	(5.36E-07)	(1.70E-07)	(6.31E-07)	(1.63E-07)
Population Mobility	-0.520	-0.530	-1.211	-0.533	-0.403	-0.609	-1.173	-0.535	-0.552	-0.481	-1.208	-0.500	-0.458	-0.331	-1.064	-0.428	-0.535	-0.410	-1.072	-0.434
	(0.692)	(0.507)	(0.668)	(0.549)	(0.594)	(0.513)	(0.658)	(0.552)	(0.663)	(0.503)	(0.659)	(0.547)	(0.637)	(0.469)	(0.634)	(0.511)	(0.630)	(0.460)	(0.629)	(0.505)
Intercept (baseline)	0.534***	0.881***	0.134	0.838***	0.032	0.892***	0.049	0.751***	0.440***	0.954***	0.161	0.894***	0.659***	0.899***	0.233*	0.850***	0.710***	0.863***	0.248*	0.845***
	(0.057)	(0.072)	(0.099)	(0.076)	(0.067)	(0.145)	(0.099)	(0.149)	(0.055)	(0.102)	(0.092)	(0.105)	(0.049)	(0.062)	(0.101)	(0.065)	(0.040)	(0.046)	(0.098)	(0.049)
Year1 (referent)			Referent	Referent			Referent	Referent			Referent	Referent			Referent	Referent			Referent	Referent
Year2 (dummy)			0.381***	-0.009			0.285*	-0.008			0.400***	-0.011			0.358**	-0.010			0.336**	-0.009
			(0.094)	(0.029)			(0.139)	(0.029)			(0.100)	(0.029)			(0.097)	(0.028)			(0.096)	(0.028)
Year3 (dummy)			0.512**	-0.025			0.367	-0.025			0.542**	-0.025			0.489**	-0.023			0.465**	-0.022
			(0.140)	(0.031)			(0.212)	(0.031)			(0.148)	(0.030)			(0.144)	(0.030)			(0.142)	(0.030)
Year4 (dummy)			0.524**	-0.057			0.360	-0.060*			0.560**	-0.057			0.500**	-0.056			0.477**	-0.054
			(0.165)	(0.030)			(0.247)	(0.030)			(0.174)	(0.029)			(0.170)	(0.029)			(0.168)	(0.029)
Year5 (dummy)			0.538**	-0.066*			0.367	-0.071*			0.576**	-0.066*			0.509**	-0.066*			0.486*	-0.064*
			(0.181)	(0.031)			(0.265)	(0.032)			(0.189)	(0.031)			(0.186)	(0.030)			(0.184)	(0.030)
Year6 (dummy)			0.557**	-0.074*			0.382	-0.079*			0.597**	-0.073*			0.517*	-0.074*			0.495*	-0.072*
			(0.188)	(0.031)			(0.273)	(0.032)			(0.197)	(0.031)			(0.193)	(0.031)			(0.191)	(0.031)
Year7 (dummy)			0.535**	-0.100**			0.360	-0.104**			0.577**	-0.098**			0.492*	-0.099**			0.472*	-0.096**
			(0.193)	(0.031)			(0.277)	(0.031)			(0.202)	(0.031)			(0.198)	(0.031)			(0.196)	(0.031)
Model (F-test, Wald)	0.86	12.87*	5.21***	33.83***	4.27**	11.08*	5.29***	34.00***	1.24	13.28*	5.22***	34.33***	0.77	15.51***	4.96***	37.12***	1.43	17.35**	5.00***	37.26***
R2	0.066	0.084	0.5480	0.344	0.259	0.038	0.5520	0.354	0.092	0.091	0.548	0.349	0.056	0.098	0.519	0.356	0.100	0.121	0.521	0.357
rho_ar	0.570	0.570	0.423	0.423	0.595	0.595	0.432	0.432	0.587	0.587	0.436	0.436	0.580	0.58	0.421	0.421	0.571	0.571	0.430	0.430
N	73	94	73	94	73	94	73	94	73	94	73	94	76	97	76	97	76	97	76	97

Statistical significance: * <0.05, ** <0.01, * <0.001 (Standard errors in parentheses)**