Trends in the Labour Market and Their Implications for a Basic Income: Short Summary

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Abstract

One of the main arguments that has been advanced in favour of a basic income is that we are going through a technology-driven transition that involves more precarious work and that will end with our economy having either very little paid work as we know it or having a preponderance of precarious jobs (low wage, low stability, low worker control). If that is the case, it is argued, then we need to look for ways to redistribute the production of the economy that is not related to work – either directly, through wages, or indirectly, through work related benefits such as employment insurance.

In this paper, I investigate this claim using both empirical evidence and an appeal to economic theory. I examine trends in work elements that characterize precarious work, such as the proportion of work that is part time, short tenure, or in self-employment as well as work arrangements that relate to worker control over their workplace, such as unionization rates and the proportion of employment in sectors characterized by “fissured” work. In addition, I examine patterns of employment, polarization, inequality, and changes in the share of income going to labour.

A picture emerges from these investigations of a labour market in which the precariousness of jobs increased in the 1980s and early 1990s while elements of work that relate to worker control and respect such as unionization follow a declining path that continues until the mid-2000s. In a similar vein, the theoretical discussions point to a plausible future with increased inequality. Thus the right question appears not to be, is the basic income the right tool for a jobless future? but, is it the right tool for a persistent set of problems reaching back well into the past?

Introduction

One of the main arguments that has been advanced in favour of a basic income is that we are going through a technology-driven transition that involves more precarious work and that will end with our economy having either very little paid work as we know it or having a preponderance of precarious jobs (low wage, low stability, low worker control). For example, Van Parijs and Vanderborght, two strong proponents of a basic income, state, "the expectation that meaningful work will be lacking easily leads to the conviction that the growing jobless population must be provided with some means of livelihood"(Van Parijs & Vanderborght, 2017, p. 7). In part, these arguments can be seen as a subset of a larger argument that our capitalist economy distorts work patterns by giving primacy to paid work and ignoring caregiving, volunteering, and other community-building work that typically goes unpaid. The idea is that many people work at jobs in which they do not feel agency or commitment and struggle to find the time to carry out non-market tasks, such as caring for children or the elderly (let alone the time to pursue what makes life meaningful—relationships, non-work interests, etc.). Here, the argument in support of a basic income is that an unconditional source of income will allow people to walk away from bad jobs and free up time relative to any paid job to focus on other uses of time, including care giving. In this sense, it would be part of a larger re-ordering of society away from market driven interactions. Ongoing information technology (IT) related changes are then viewed as an accentuation of the perceived problems with the existing labour market. That is, we already have problems with how the labour market, with its emphasis on paid work, distributes resources. If technology dictates that the labour market will cease to do even this (because of a lack of jobs) or do it more unequally (as jobs polarize into a small set of high-paying jobs and a much larger set of precarious jobs) then the rationale for a basic income becomes stronger. Indeed, even if one does not believe in the need for a restructuring of the labour market in general, a future with either no or mainly precarious jobs requires a different mode of redistribution that does not depend on work—either directly, through wages and wage subsidies, or indirectly, through work contingent transfers. A basic income is promoted as that different mode.

In this paper, I will investigate this claim using both empirical evidence and an appeal to economic theory. I examine trends in work elements that characterize precarious work, such as the proportion of work that is part time, short tenure, or in self-employment as well as work arrangements that relate to worker control over their workplace, such as unionization rates and the proportion of employment in sectors characterized by "fissured" work. In addition, I examine patterns of employment, polarization, inequality, and changes in the share of income going to labour.

At its heart, the argument that changes in the labour market point to the usefulness of a basic income is grounded in a form of technological determinism. There is a fatalism to the claim that technological change will either end work or downgrade its form. The claim is that new technologies such as artificial intelligence (AI) and robotics are already re-making the

labour market and will be expected to do so to an ever-increasing extent. My approach is to evaluate this claim in two parts. The first is to investigate the part of it stating that the trend toward no or precarious work is already well under way. My main conclusion from an examination of a wide range of data series is that Canada and B.C. underwent a move toward a greater proportion of jobs having a precarious form in the 1980s and 1990s. Since then, the trend has either been flat or has reversed itself to some degree. The trends in employment (putting aside the COVID-19 impacts of the last few months) are also largely in the opposite direction to what one might predict in a trend toward the end of work. But even if the trend has not revealed itself so far, it is possible that technological change is moving in that direction. To discuss that possibility, I make use of the more theoretical literature on the interaction between technological change and the labour market to map out the limits of what one might predict. Put another way, I ask, under what assumptions one would predict an end to work? The answer is that the required assumptions are extreme. Under reasonable assumptions one would not expect an end to work or even a long-run reduction in the share of total income going to labour. Moreover, the literature on technological change makes it clear that we should not see that change as an exogenous force beyond our control. It responds to economic incentives and, so, can be shaped by policy. The question is then whether a basic income is a useful part of taking advantage of technological opportunities to build a better society

Along the way in these investigations, a picture emerges of a labour market in which the precariousness of jobs increased in the 1980s and early 1990s while elements of work that relate to worker control and respect such as unionization follow a declining path that continues until the mid-2000s. In a similar vein, the theoretical discussions point to a plausible future with increased inequality. Thus the right question appears not to be, is the basic income the right tool for a jobless future? but, is it the right tool for a persistent set of problems reaching back well into the past? Is it the right tool for creating workplaces where workers have reasonable control over their own work scheduling and conditions? Is it the right tool for addressing a need for balanced wage bargaining? Is it the right tool for addressing inequality that is not growing but rose to high levels in the 1990s and has resisted both strong labour markets and various policy approaches? Anderson (2017) points out that given the importance of work in our conceptions of ourselves and as a major part of our days, a lack of true justice at work implies a less just society. There needs to be a balance between the need for firms to be able to direct workers to tasks in order to produce in an efficient way and the rights of workers to some degree of autonomy and respect. We do not have that balance. The question is whether a basic income is an effective part of a set of policies that would allow us to attain it.

Defining the Gig Economy

Concern about the labour market has focused on the perceived rise of the gig economy, which can be defined as the set of “businesses and workers that are marked by alternative jobs that are usually temporary and influenced by technology” (Rinehart & Gitis, 2015). It is important to separate the two components of this definition: alternative jobs (aka precarious work that is in

a form other than a standard full-time, permanent relationship with a single employer and that is typically marked by some degree of temporariness) should be separated from the other component of the definition: work mediated through technology. We need to avoid attributing long-term trends in alternative job holding to the gig economy since such trends could call for a different policy response relative to any recent rise in technology-mediated work.

Is Precarious Work on the Rise?

I use the Labour Force Survey (LFS) in two forms. First, I use the public use micro-data files for March and November of each year from 1997 through March, 2019. I exclude people who list themselves as full- or part-time students in the reference week to avoid conflating trends in education with trends in the nature of work. Otherwise, the data refers to all individuals age 15 and older in the Canadian population. I start this data in 1997 because that is the first year in which wages are available in the LFS, and several other job-related characteristics also start then. However, for some trends, I look at longer time spans using LFS data from CANSIM tables.

The downside of the LFS data is that questions about the nature of work refer to the primary job and thus trends in supplemental work can be missed. I will return to that issue later.

Vosko et al. (2003) and Krahn (1995) emphasize instability as a key feature of non-standard. Working from the LFS data, Vosko et al. (2003) denote the categories of work that are unstable and, hence, defined as non-standard as: own-account self-employment (owners of businesses that have no employees and that are typically not incorporated); part-time (defined as less than 30 hours per week); and temporary (work with a pre-defined end date, including contract, seasonal, casual, and temp agency work). Since these categories can overlap, the simplest way to measure trends in precarious work is to examine trends in its complement: standard work, defined as work that is full time and permanent (i.e., a job with no fixed end date at which the individual works at least 30 hours per week).

Figure 1 contains plots of the proportion of workers in standard work for the period from 1989 to 2019 for workers age 15 and over who are not students for Canada as a whole. The first two data points come from Vosko et al. (2003) and are from the General Social Survey in 1989 and 1994. The remaining points are from the LFS.

Four main conclusions arise from Figure 1. First, there has been a long-term decline in stable employment. Second, however, that decline happened during the time of the weak labour markets in the early 1990s and for approximately the last 20 years the proportion has been essentially flat. That same flatness since 1997 is evident in the plots for men and women, separately, in B.C. shown in Figure 2. Third, the proportion of males with a stable job is higher than the matching proportion for females in all years. This matches well-known conclusions that women experience more precarious work patterns. Fourth, the levels for both genders are relatively high—on the order of 67% of males and 60% of females have permanent, full-time jobs. Thus there is no evidence of a rise in the gig economy pushing more people into unstable work in recent years: standard jobs remain the norm. But, a considerable proportion (33% of

males and 40% of females) are in work arrangements that are not standard and have some feature that could reflect instability.

Examinations of specific types of non-standard work (self-employment, temporary work, and part-time work) all show flat trends over the last 20 years. For example, the percentage of workers in temporary or contract work was almost unchanged between 1997 (21%) and 2019 (22%) for B.C. workers aged 25 to 54. Jeon et al. (2019) show an increase in their measure of gig work (the proportion of workers in Canadian tax data who are own-account, self-employed, and have no business number—based on an argument that not having a business number denotes a small firm of the type set up to operate in the gig economy) since 2005, but the increase is on a slackening trend in recent years and only amounts to about 1% of employment since 2009. Thus, here too, there is little evidence of gig-related unstable employment taking over work in Canada.

There have been a number of attempts to measure the extent of gig economy work more specifically. Many of these are hampered by having to rely on indirect measures, such as ownership of an unincorporated firm, such as the type of work status that might be held by Uber workers, (e.g., Jeon et al., 2019). But, as we have seen, the persistence in those types of work suggest other, longer-term driving forces. More directly, Katz and Krueger (2019) implemented a survey in the U.S. in which they asked participants about their involvement in selling services or goods through online intermediaries. They find that about 0.5% of respondents in 2015 engaged in such activity in the previous month. This is the same number Statistics Canada finds in a survey of peer-to-peer service users and providers, with about half of the providers offering Airbnb accommodations (probably not what we have in mind in terms of disruption in the labour force) (Statistics Canada, 2017). Thus, direct provision of work mediated through online services accounts for a small share of work in Canada.

Thus, there is limited evidence of a shift toward more precarious work patterns in the last two decades in Canada or B.C. There is some evidence of an increase in temporary and contract work since about 2010 for 15-to-24-year-old, non-student workers. This might fit with the kinds of shifts in the labour market that are sometimes claimed to be imminent by analysts who see IT as transforming or about to transform the labour market. However, the shift does not exist for other age groups (even 25-to-34-year-olds) and is small (on the order of about a 2 percentage point increase relative to the late 1990s). Thus, while worth watching, this is far from evidence of a substantial shift toward precarity in the labour market.

But while there is little evidence of such a shift in the last two decades, a longer-term perspective suggests a different take. Both the proportion of workers in full-time, permanent jobs and the proportion in part-time jobs show substantial shifts in the 1980s and first part of the 1990s toward more precarity in work. Following that shift, Canada has been in what Noack and Vosko (2011) call a state of “persistent precarity.” This is a theme that will continually re-emerge in the rest of our data investigations: from the perspective of workers, the Canadian and B.C. economies took a shift for the worse in the 1980s and 1990s. The shift did not continue—the various series have been flat since about 2000—but neither was it reversed. If there is a case for a basic income to be found in labour market data, it is not based on recent trends toward

more precarious work but rather on more profound structural shifts that occurred over two decades ago. It is also worth noting that movements in work situations such as part-time work and self-employment bear an uncertain relationship to calls for a basic income. Some basic income proponents argue that the provision of a guaranteed income floor will allow people to be more entrepreneurial (i.e., to move into self-employment) and to expand other roles such as caregiving (implying a move to more part-time paid work). In that sense, those proponents would be aiming for increases in some of the series examined here.

Trends in the Characteristics of Standard Jobs

Even if workers are not engaging in more precarious types of work as their primary job, full-time jobs may be becoming more precarious, i.e., more likely to end early, with less control over work schedules, and with lower pay. Here, too, much of the evidence does not point to recent increases in such precarity. Job continuation rates, for example, the probability that a job today will still be continuing at some point in the future, have increased not decreased in Canada since the mid-1990s (Brochu, 2013 and added calculations from the LFS). The proportion of workers reporting unpaid overtime relative to the proportion reporting paid overtime (a measure of lower control over work) has declined since 1997. And wage inequality has declined for Canada as a whole and for B.C. since 1997, with growth in the 10th percentile outstripping growth in both the median and the 90th percentile, which grew at relatively similar rates (based on an update of the trends in Fortin and Lemieux, 2015). The latter trend almost surely reflects increases in provincial minimum wages in recent years, indicating the policy shifts can have substantive impacts.

There are, though, two areas in which there appears to have been considerable change in the B.C. labour market in the last two decades. The first is the decline in unionization represented in Figure 3. The overall unionization rate for women has declined slightly from 35% of workers in 1997 to 30% in 2019, while the rate for men has declined much more (from 38% to 26%). This fits with the observation in Card et al. (2020) that the composition of union membership has shifted substantially toward the public sector, where women have a larger presence. In the private sector, only 12% of female workers are union members. Here, as in other markers of precarious work, there is little evidence of a sharp change in unionization trends. Instead, de-unionization among male private sector workers has been going on for over 20 years and the very low rate of union membership among female private sector workers is a seemingly permanent element of the B.C. labour market. Thus, the declining and low level of worker representation is a long-standing concern rather than a new trend.

The second area where there may have been change is in the extent of domestic outsourcing, or working for intermediate firms or as independent contractors. Whether a worker is an employee of the firm on whose premises they work or is, alternatively, either an independent contractor or an employee of some type of intermediary firm is important for considerations of the precarity of work. Tucker et al. (2016) examine the legal limitations on outsourcing of work to subcontractors in Canada. They argue that there are few restrictions and

that for most elements of work, “the subcontracting company has no legal responsibility for the subcontractor’s employees, including pension plans and pension funds” (Tucker et al., 2016, p. 152). Further, they note:

> Sub-contractors are not under any legal obligation to offer their workers the same conditions of employment enjoyed by workers at the user company. A sub-contractor is free to negotiate entirely new conditions of employment with its employees even if this results in significantly less compensation for the performance of the same work. (p. 152)

This is the key concern with outsourcing or contracting out work to other firms. It can be a route to lower pay and fewer workplace protections for workers. As Anderson (2017) argues, since people spend a substantial portion of their time at work, questions related to being treated with dignity are central to determining how just a society is. The authoritarian power given to employers over employees is heightened in a situation where not only the worker but the intermediate firm are treated as replaceable. That power is partly necessary for the efficiency of work arrangements, but Anderson argues that, in the U.S. at least, it is stronger than is needed for that efficiency gain and is, in fact, a source of considerable concern about justice.

Measuring outsourced work is very difficult. As we have already seen, in standard surveys, workers themselves may not report whether they are in such a work arrangement. Weil (2019) introduces the term *fissured workplace* to group together the various work arrangements that include a gap between the worker and the ultimate source of direction of the work. Fissured workplaces were created as part of firms choosing to focus on their “core” competencies, leaving other tasks (such as food preparation or janitorial services) to subcontractors. Dube and Kaplan (2010) argue that breaking work up in this manner is a way to break fairness comparisons in pay between, say, janitors and lawyers at a law firm. With the janitors in firms that now only include janitors and work in multiple workplaces, there is no longer a fairness argument that they be given pay increases at the same time as the lawyers. Indeed, Dube and Kaplan (2010) find that janitors and security guards experience a 10% decline in wages when their employment contract is moved out of the firm that is the ultimate workplace and into that of a subcontractor. Similarly, Goldschmidt and Schmieder (2015) find lower wages for workers whose jobs have been outsourced in German administrative data. Song et al. (2018), using matched worker-firm data for the U.S., show that two-thirds of the increase in inequality in that country between 1978 and 2013 stems from increased between-firm differences that are themselves driven by an increased tendency to sort high-paid workers into high-paying firms. This is consistent with an increasing amount of outsourcing, sorting low-paid workers such as janitors into service firms where they are paid low wages and leaving higher-paid workers concentrated together in higher paying firms.

Dube and Kaplan (2010) identify workers in certain industries and occupations as likely to be in outsourced work arrangements. In particular, they focus on workers in food, cleaning, and security occupations whose employer is in the business services industry. With both approaches, they demonstrate a substantial increase in the extent of outsourcing in Germany over time. Weil (2019) uses a variety of case studies to identify four-digit North American

Industry Classification Systems (NAICs) industries in which a considerable proportion of workers are in fissured work arrangements. These include temporary help services, call centres, security guards, and janitorial services.[1] Based on what we have learned in the current COVID-19 crisis, I have added the care home industry to the list and then calculated the proportion of workers in these fissured industries in Canada as a whole and B.C. specifically in Figure 4.

Figure 4 displays a now familiar pattern: the proportion in these industries is substantial (on the order of 17% of all workers in B.C.) but has not displayed an upward trend in the last 10 years. It did increase in the early 2000s at a time when the B.C Liberal government reduced labour market regulation and shifted to a worker self-report approach to finding violations of regulations (Ivanova, 2019). This is suggestive of a role for policy in affecting these trends. In the full version of this paper, I investigate an indirect measure of outsourcing of work—that the premium to working in large firms for low-paid workers will decline as firms threaten to outsource their work—and show that such a decline is happening in B.C.

In the end, I see the combination of the substantial proportion in exposed industries shown in Figure 4, trends in other measures related to fissured work presented in Green(2020), and the reports about work arrangement in care homes that has emerged during the COVID-19 crisis as indicating a need for concern about the extent and nature of these work arrangements. The recent focus on gig workers, who seem like a very small portion of the labour force, has the potential to misdirect attention away from the potentially much more substantial problem of workers affected by a fissured workforce.

Assuming that fissured work arrangements are a cause for concern, is a basic income the right policy response to them? Having a basic income might allow workers to turn down these work arrangements, generating a bottom-up rearrangement of the labour market. But, in equilibrium the opposite might happen: with a secure income base, workers may have fewer concerns about taking precarious work arrangements. Essentially, a basic income could form the basis of off-loading income security from firms to workers. That, in turn, could lead to a workplace with even greater power imbalances of the kind that Anderson (2017) decries. The much more direct policy response is through enhanced regulation, holding the firm in whose workplace the work is done responsible for the workers in that workplace regardless of their contractual arrangements. Indeed, Weil (2019), in his list of policy responses to the problems he describes, focuses on regulation, training, and social norm responses.

Employment and Inequality

If the end of work is on the horizon, one might expect to see a trend down in employment in recent years. But the employment to population ratio for B.C. (males and females combined, over age 15) in the last two years are at levels close to their value in 2008, which was a historically high value since the start of consistent LFS data in 1976. Indeed, the employment rate has increased relative to the late 1970s, with the labour market absorbing the

[1] The list of industries is given in Table 1 in Weil (2019).

increased participation of women. But underlying this overall trend are declines for lower-educated men and women. Figure 5 plots employment and participation rates for male and female high school graduates, age 25 to 54. The employment rate for males in this education group shows a 5 percentage point decline from 1990 through to about 1997 then follows a roller coaster in the last 20 years. The decline in the 1990s is matched with an equal decline in the participation rate. For females, slight increases from 1990 to about 2012 were offset by some declines in recent years so that the long-term pattern is flat. Thus, there is a problem with the level of the participation and employment rates for less educated males but that problem largely emerged in the weak labour markets of the 1990s. For females there is weak evidence of worsening labour market outcomes in the most recent years but overall one would not conclude from this figure that recent technological change is driving a new movement out of work.

Accompanying the participation changes for lower-educated workers has been a shift in the composition of work with the percentage of jobs for 25-to-34-year-olds that are in “routine” occupations (occupations involving repetitive tasks that are seen as being easily replaced with IT related capital) falling from 29% in 2003 to 23% in 2019 (Figure 6). This is exactly offset by an increase in the percentage working in “cognitive” occupations (where more flexibility and non-rote decision-making is required). Thus, the nature of work is changing. But the employment numbers indicate that this has not implied a reduction in work even for the less educated in recent years. And the earlier numbers suggest that this shift is not matched by an increase in the precariousness of work. Moreover, the cognitive jobs that are rising in importance in B.C are the ones that are typically seen as complementary with new IT capital, i.e., the ones that will benefit from technological change. It is possible that the advent of AI will change this claim but, at least in the near future, B.C is shifting toward more technology-resilient jobs. At the same time, the decline in resource jobs is concerning since these have been the source of high-paying jobs for middle and lower-educated workers.

In Figure 7, I plot the Gini coefficient for market income and disposable income for B.C from 1976 to 2018. The Gini coefficient is a measure of inequality that falls in a range between 0 (perfect inequality in which everyone has the same income) and 1 (perfect inequality in which all income goes to one person). The values shown in Figure 7 put B.C. in a middle range relative to other provinces in Canada and relative to other developed economies in the world. The movement from 0.35 in 1976 to 0.42 in 1996 for the Gini coefficient for market income shown here is very large relative to the variation across countries. Market income corresponds to income from all sources other than government transfers and disposable income corresponds to income after adding in transfers and subtracting taxes. The incomes are on an individual basis with family incomes being scaled by the square root of the number of family members to take account of economies of scale in the household.

We can break the 42 years covered by Figure 7 into three broad periods. The first period reaches from the late 1970s to approximately 1996 and is characterized by substantial increases in market income inequality that are almost perfectly offset by taxes and transfers so that inequality in disposable income remains constant. Frenette et al. (2007) show that the mitigating effects of the tax and transfer system arose because of ongoing increases in both

transfers and top end tax rates over this period. The second period runs from 1996 through 2002 and is characterized by a continuation of the trend increase in market income inequality. This, though, is the period of major reforms in the Income Assistance (IA) system and the elimination of top-end surtaxes and, as a result, the tax and transfer system ceases to offset the rising market income inequality. Indeed, disposable income inequality rises slightly faster than market income inequality, implying that the tax and transfer changes were inequality increasing—though only mildly so. In the period since 2002, B.C. has experienced a gradual decline in market income inequality with disposable income inequality moving in a parallel fashion. Thus, since the policy changes of the mid-1990s, the system has largely stayed static, neither increasing nor decreasing inequality trends.

It is interesting to compare the time patterns for inequality and polarization with the trends we have seen in elements of work. For both self-employment and part-time work, by far the largest share of the increases that B.C. has experienced occurred before 1996. Unionization rates for males, on the other hand, have been on a long-term declining path that continued until about 2008. Similarly, employment in industries characterized by fissured work increased until about 2008, and the large firm wage premium was on a declining trend until that point. Thus, the move toward precarious work as characterized by self-employment and part-time work happened before the tax and transfer policy changes of the late 1990s and likely reflects shifts in industrial composition away from sectors with more blue collar and clerical jobs. The fissuring of jobs that may well be full time and full year, on the other hand, extends beyond the late 1990s. I am unsure about the starting point of this latter trend but it does include the era in which Canada adopted the OECD Jobs Strategy approach of reducing “passive” transfers and seeking to increase labour market flexibility. In relating this to questions about the potential role of a basic income, it is worth pointing out that the increase in precarity happened in a period with relatively generous and increasing transfers. Thus, reversing the cuts in these transfers through the mechanism of a basic income is unlikely to address the core problem. The coincidence of the major cuts to transfers with other initiatives to reduce labour market regulation makes it difficult to draw conclusions about the role a basic income could play in helping to address the fissuring of the labour market.

Declining Labour Share?

The piece of evidence that may have received the most attention as raising warnings about what technology could be doing to the labour market is the decline in the share of total income going to labour in the U.S. While there has been considerable attention given to the decline in the labour share in the U.S., it is important to recognize that this trend is far from ubiquitous across developed economies. The U.K. has actually experienced and increase in labour share in the last two decades while the labour shares in France and Germany declined but largely in the 1980s and 1990s, with some increases in recent years (Manyika et al., 2019).

In Figure 8, I plot the labour share for Canada for the period 1961 Q1 to 2020 Q1.[2] The long-term pattern can be roughly broken into four periods: a gradual increase from the early 1960s to the early 1970s, rising from about 0.5 to about 0.54; a flat period with considerable variation related to business cycles from the early 1970s to the early 1990s; a period of strong decline from 1992 to 1997; and a period with a gradual decline from 1997 to 2005 followed by gradual increase for the remainder of the period. Several points follow from this figure. First, unlike in the U.S., Canada has not been experiencing a long-term decline in labour share. The current labour share is at approximately the same level as Canada experienced in the late 1960s. More specifically, the labour share has been on a mildly increasing trend for the last 15 years. Thus, arguments that we need to be concerned about work-related means of distribution because of IT-related technological change do not hold water for Canada. Second, the most recent turnaround point in the trend occurs in 2005, which is roughly the starting point of the resource boom that would carry Canada for the next decade. Green et al. (2019) argue that the effects of the resource boom affected wage setting across Canada through bargaining spillover effects, with B.C. a key beneficiary of the resulting wage gains. Third, the period of rapid decline in the labour share between 1992 and 1997 coincides with the timing of other large changes we have discussed—increases in inequality and in part-time work, among others. It is also the period of substantial changes in the Unemployment Insurance/Employment Insurance system and in IA across most provinces, raising questions about the influence of public policies on labour market outcomes.

Plots of the labour share for B.C. and Canada show similar patterns since the mid-1990s except that B.C. experienced more of a decline in the labour share after 2009. However, in examinations of the data by industry, the decline in the labour share in B.C. after the 2008/9 recession is largely accounted for by growing economic rents in the real estate sector. As prices rose, there was both a reduction in labour share in the sector and a shift in its share of total GDP. Since real estate was already a very low labour share sector at the outset of the period, the shift in GDP share in its direction also served to reduce the overall labour share for B.C. Thus, this is not a pattern reflecting, for example, the effects of widespread technological change.

Summary of Empirical Patterns

Three key points arise from the empirical patterns above:

- There is little evidence of a recent shift toward precarious, low-wage jobs for Canada as a whole or B.C.

[2] The Canadian data is from Statistics Canada. Table 36-10-0103-01 Gross domestic product, income-based, quarterly. The labour share is the ratio of total compensation of employees divided by GDP at market prices. Note that the labour compensation series is only for employees. It is common to make adjustments to include self-employed workers, but we are unable to do that for the whole period. In years when that adjustment can be made, the labour share level is higher but the trend is substantially the same.

- There was a set of substantial shifts that generally were disadvantageous to workers in the 1980s and 1990s (increased inequality, a decline in labour share, reduced labour force participation of lower-educated men, and a lower proportion of jobs that are stable), followed by two decades of stability in these measures.
- Declining unionization and some evidence of an increase in the outsourcing of work in the last two decades indicate concerns for workers in terms of representation and fragmentation of work.

Taken together, these suggest that the immediate question about a basic income as a policy tool is not whether it is needed because of ongoing upheaval in the labour market (because there is little evidence for that) but whether it is the right tool for addressing the deeper problems that emerged in the 1990s and have persisted. Those problems have been resistant to both strong labour markets and various policy approaches in the last two decades.

COVID-19 and Near-Term Change

All of our data to this point is for the period leading up to the onset of the COVID-19 pandemic. The labour market has been severely affected by the pandemic in ways that might alter some of my predictions and conclusions. Figure 9 contains plots of the monthly B.C. employment rate for all workers age 15 and over, broken down by gender and includes data through April 2020. The figure makes evident that the pandemic has generated an unprecedented drop in employment—much larger than what B.C. experienced in either the early 1990s recession or the 2008/9 recession. It is by now well-known that much of the drop loss in the pandemic has occurred in the retail, food, and accommodation sectors, all of which are low wage and low job security industries (Lemieux et al., 2020). As a result, the percentage of employment that is full time and permanent has risen from 62% in 2019 to 69% in April 2020 for males and from 55% to 62% for females. Thus, measures of stability have risen among those who kept their jobs, but this highlights the fact that part-time, contract, and self-employment work really are precarious since it is the workers in those jobs who are most likely to lose their jobs in a crisis.

For those who continued to work, adjustments to COVID-related challenges have been in the direction of working from home and in ways that make considerable use of technologies such as Zoom. Statistics Canada included questions on these adjustments in the April LFS and found that 12 million Canadians were employed and working at least half their normal hours per week in the April survey week. Of those, 5.0 million worked most of their hours at home, which included 3.3 million who did not normally work at home. The ability to work from home varied widely across sectors, with the low-paid accommodation services industry having only 8.4% of workers working from home while the high-paid professional, scientific, and technical services sector had 75.5% of its workers working from home. (Statistics Canada, 2020). This differential ability to work from home is reflected in the employment loss numbers by sector.

As we have seen, years and years of claims and predictions that more people would work from home and the standard job is or will soon be dead do not show up in the data before

the pandemic. It is possible, though, that widespread experience with working from home will provide a shock that will move considerable numbers of workers to a new work arrangement that includes working from home. That work might be more like gig work in form—more project based and less stable. It is too early to be sure yet what is coming, but the possibility that work will shift in this direction is definitely real. Whether this would imply a need for a basic income in response is not clear. The most direct response would seem to be adjusting labour regulations to address issues like the rights of workers to turn off their computers and take breaks during the day.

Looking to the Future

Of course, it is possible that the short-term prognosis shows limited changes in the labour market but the longer-term situation is much different. We could, in fact, be in the equivalent of what Robert Allen termed *Engel's pause,* the period from 1800 to about 1840 when workers in England did not share in the benefits of the first Industrial Revolution, instead experiencing a period of stasis in wages (Allen, 2017). There is no doubt now, as then, that technological change will have real effects on work and pay (e.g., Groshen et al., 2018, predict a 0.1 percentage point increase in the U.S. unemployment rate as a result of autonomous vehicles over the next 30 years). The question is whether what is coming in the longer run will involve lower wages and precarious or no work versus rising wages and a sharing of the benefits of technology through work.

In a situation such as ours in which we do not appear to be currently on a trend to lower employment, stable work, wages and labour share, we cannot use projections of current trends to predict what would happen if technologies such as AI substantially alter much of how work is done. Instead, we need to turn to models of technological change and the labour market. As many of us have learned from mathematical models of the progression of the coronavirus, models in this situation are not about accurate predictions of the future. Rather, they are about employing logic to understand the limits of what might happen. The limits the models indicate, of course, depend on the assumptions underlying the models. The question, then, is whether under reasonable assumptions about new technologies, production, and the labour market it is likely that we will witness a future with little or no work and a low share of the total value of production going to labour? Or, put in the opposite way, how extreme would our assumptions need to be in order to fit with such a dire future?

Our starting point is a standard analysis in which the output in an economy is produced using combinations of capital and labour, with the set of feasible combinations determined by the current state of technology. So, for example, at the outset of the Industrial Revolution, there were combinations of workers and capital that could be used to produce, say, wool or transportation. Improving the level of output by having some of the materials measured and cut very precisely through the use of lasers and computers was not in the feasible set. Later, inventions shifted the feasible set to include those options. One can think in terms of a set of available recipes that involve combining labour and capital to produce output. Economists call

that set of recipes the production function. To make progress on our predictions of possible futures, we need to make some assumptions about the form of the production function and the supplies of capital and labour. Perhaps the most common assumption about the production function in the long run is that it is constant returns to scale (CRS). This means that doubling the inputs (capital and labour) doubles the output. The alternatives are decreasing returns to scale (DRS) and increasing returns to scale (IRS) production functions. Decreasing returns to scale means that doubling the inputs in the economy leads to a less than doubling of the output. This happens if there is another input to production that is fixed in supply (e.g., land). In that case, as we increase the amount of labour and capital but they are forced to work in ever more constrained land spaces then the resulting increase in output would be constrained. With increasing returns to scale production, there is something like a virtuous circle in which using more of the inputs leads to even greater increases in output. Economists tend to see both DRS and IRS as implausible in the long run—so far, technology has been able to find (eventually) a way around the constraining effects of inputs that appear fixed in the short run, on the one hand, and, on the other, IRS would imply explosive growth that we have never seen.

So, if we assume the production function is ultimately CRS, what does that imply for our predictions? We need to bring in assumptions about the supply of capital and labour and the nature of technological change to make more progress. First, economists typically assume that capital is perfectly elastically supplied in the long run. That means that if demand for capital goes up, eventually enough new capital will be created in response to drive the price of capital back down to a fixed, long-term price. On the other hand, labour is assumed to be fixed in the long run—assuming, for an economy like B.C., we do not simply open the immigration doors and let anyone enter at will, we cannot create any amount of labour we might want in the long run.

Finally, we need to make an assumption about how technological advances shift the production function. The simplest way to discuss this is to see technological advance as allowing more output with the same amounts of capital and labour. At its most general, the technological change makes both capital and labour more productive. The questions we are interested in come down to asking whether it is possible for an economy to have increased productivity of this type but at the same time, to have labour lose out in terms of the average wage and its share of the total value of what is produced. In the context of our production function, that is what AI doomsayers are predicting for the future and what forms the basis for calls for moving to a basic income to replace (declining) labour earnings as a way to distribute the value of what is ultimately produced.

It is important, at this point, to differentiate between short- and long-run time frames. We can define the long run as the time horizon over which new capital can be created to match demand. That is, in the long run, the price of capital will revert to its fixed level. But, as Caselli and Manning (2019) point out, if that is the case then the added returns to the increase in productivity arising from technological change must go to the factor that is fixed in the long run: labour. Put in another way, if there are multiple types of labour (delineated, for example, by skill level) then at least one of those types must benefit from the increase in productivity. There could

well be types of workers who are losers. Indeed, it is possible that the majority of workers could lose even though, on average, labour gains. But Caselli and Manning point out that this is a question that we are used to, a question of redistribution through taxes and transfers, not a technologically determined end to work that requires a completely different policy solution.

In the short run, with a scarce amount of capital, it is quite possible that the returns arising out of the increased productivity coming out of the innovations will go to capital more than labour. That is, in the short run, one would expect any inequality issues to be even worse and it is certainly possible that labour could be absolutely worse off. In the longer run, the logic says that the high returns to capital will incentivize the creation of more capital, driving capital's return down. As that new capital chases the labour it needs to work with, wages will rise. This is one way to characterize what happened in the second stage of Britain's Industrial Revolution and in other economies in the long boom after World War II. But, to very loosely paraphrase Keynes, we live in the short run. So, again, the question is not whether technological change is wiping out employment but what policies we need in place if, in the near future, inequality worsens further because capital is able to take a disproportionate share of returns to new innovations.

The conclusion that labour will not lose out in the long run is ironclad within the confines of the model we have set out so far. But that model faces a number of criticisms and we need to investigate whether any of them are sufficient to overturn the core reasoning presented so far. Perhaps the most visible critique comes in Thomas Piketty's book, *Capital in the Twenty-First Century*. Piketty works within the same production function and optimizing firms paradigm but argues that the return to capital has stayed stubbornly high over the long run in spite of accumulation of capital. In other words, the mechanism that would result in labour managing to get its share of increased productivity over the long run is not actually at work. He argues, instead, that the elasticity of substitution between capital and labour is so high that even as technological change reduces the cost of capital, firms shift so dramatically toward using capital and away from labour that the overall share going to capital rises. The natural working of the capitalist economy leads to ever increasing capital share. If this is the description of the future then a basic income could be a useful redistributive tool—funded, according to Piketty's recommendation, with a wealth tax.

Piketty's analysis has been criticized on a number of fronts. One is that the high elasticity of substitution between labour and capital that his explanation requires does not appear to be present in the data. A second is that the high and persistent returns to capital he discusses come not from returns on regular working capital but on housing. This is quite a different mechanism to the one he proposes. The issue is not the natural working of capital accumulation and implementation within a competitive economy but rising economic rents to land and other fixed factors (Rognolie, 2015). In a similar vein, Barkai (2018) presents evidence for the U.S. that the share of income going to capital as well as labour have been decreasing and that it is the share of income going to economic profits (returns over and above what would be obtained in a truly competitive economy) that has been on the rise. In either case, attention

shifts from an inevitable rise in capital share and decline in labour share to questions about imperfect competition and concentration in the goods market (Steinbaum, 2017).

This is a second main line of critique of our original model—that it relies on fundamentally competitive market forces. Caselli and Manning (2019) argue that imperfect competition in the goods market (measured by the markup of prices above the marginal cost of production) will not alter their main conclusion as long as those markups are not changing over time. Some of the returns to production go to these excess profits but that share stays constant as the other forces of capital accumulation and labour reallocations play out. Technological change only inevitably leads to declining labour share if it also inevitably leads to greater and greater market imperfection—a concentrating of market power in fewer firms. There are some claims made along these lines. Indeed, this is the line of argument underlying Autor et al.'s (2017) investigation of the impact of superstar firms on rising inequality and declining labour share in the U.S. But, as we have seen, even in their own calculations this force explains a small part of the decline in the U.S. labour share and Gutierrez and Philippon (2019) argue, in contrast, that this concentration is not actually happening. Instead, there may be reasons to be concerned that concentration is happening for political economy reasons, with big firms using lobbying power to form barriers to entry and protect their excess profits. Whether this is an inevitability given our political systems is an important question, but it is not an inevitability arising out of technical change.

Regardless of the source of any increases in business concentration, the question for us is whether a basic income is part of the tool kit one needs to address this problem or whether the real answers lie in competition policy and, possibly, limitations on lobbying in order to reduce the ability of firms to concentrate and keep power. It is worth re-emphasizing as well that these are largely arguments based on U.S. data and trends. The fact that Canada has not seen a decline in labour share over the last 15 years is reason enough to question theories that are built on a claim that labour share is declining and will continue to do so into the future.

An alternative criticism of the standard model of technological change and labour markets raised by Acemoglu and Restropo (2017) is that the characterization of technological change as a force that raises the productivity of all factors of production is inaccurate. They, instead, set out a model in which technological change can take two forms: increased automatization of existing tasks (creating new forms of capital that substitute directly for labour) and the creation of new tasks (in which labour has a comparative advantage). Thus, not all innovation is beneficial to worker productivity. Some—the automatization ones—directly reduce employment and wages. Thus, if innovation took the form of exogenously arriving automatization technologies such as robots, then we would expect to see the kinds of dire outcomes that some predict. But Acemoglu and Restropo argue that once one places the two kinds of innovation in a wider context in which innovation is an economic decision that responds to incentives then the future looks less dire. In that case, when labour costs are high, firms have an incentive to create automatizing technologies, but regular decreasing returns to activity will mean that eventually it will pay for them to switch to the second type of innovation—creating new products and approaches. Historically, the latter types of innovations have always come

with demands for new types of trained labour. Thus, in the long run, they arrive at the same place as Caselli and Manning (2019) with labour as a whole not losing share but a potentially very unequal distribution of rewards as the workers who are being replaced by robots are different from those whose skills complement the new technologies of the second type. Again, though, the short run (in this case, the time period before the focus of innovation can shift) could be worse than this with respect to both inequality and total share going to workers. It is worth looking back at the figure showing shifts in major occupations categories in the last 20 years (figure 6). That figure shows only very moderate growth in the top, cognitive occupations. This fits with the argument in Beaudry et al. (2016) that the pattern of increasing demand for cognitive skills that seemed to be occurring up to 2000 stalled or even reversed after that. Here, as in our earlier investigations, the point is that the future may hold substantial shifts toward more demand for more skilled workers and, with it, increasing inequality, but that trend is not going on now.

Two key points arise from Acemoglu and Restropo's (2017) discussion. The first concerns comparative versus absolute advantage. Workers do well in the long run in all of these models because they have a distinct role—they are always able to do some tasks relatively better than machines. But what if machines can do everything we can do but much better, i.e., they are perfect substitutes for humans but with much lower costs? This is one scenario in Acemoglu and Restropo's framework in which there can be an end to human work. Our assumptions on whether IT capital can take over all human tasks come partly from what engineers foresee as possible. In this realm, there is considerable disagreement. For computers to be better at all tasks than humans would require them to be able to make flexible, adaptive decisions like humans can. It would also require them to be able to substitute for the intangible essence of human interactions. This all may be possible, but it is far from certain; there are scientists who insist computers can take over these tasks and will do so in the next few decades and others who argue it will not be possible in the foreseeable future.

In trying to assess which side is more likely to be right, I think it is worth considering the example of psychotherapy. In principle, machine learning with a whole list of inputs on the background of the patients and what therapeutic approaches were tried with each could predict the best approach for each individual. But there is a literature in psychotherapy that argues that the best predictor of good outcomes is the therapeutic connection between the practitioner and the patient (Ardito & Rabellino, 2011). If we think of this in regression terms (a sophisticated version of which is, in very broad terms, the approach that the machine learning algorithms use) with the patient's outcome as the dependent variable, what these studies argue is that the set of patient-doctor fixed effects soaks up most of the variation and very little is left for the indicators of the specific therapy being used. But what the algorithms can use in their prediction is those latter indicators. The human connection is unlikely to be something machine learning can predict, and even if it could, it would not eliminate and could not replace the need for that connection. In this example as in many others, new technologies are likely to complement rather than replace human actions. To the extent that the latter assessment is correct, there will always be a role for human workers. The problem is that if that role is built on the ineffable

quality of being human then wages could fall to low levels because that is a quality we all have and so the supply of it will be large.

The second point underlying Acemoglu and Restropo (2017) and Caselli and Manning (2019) is that reactions of firms and workers in the market matter for the path of technological change and its impacts. This is true in two senses. The first is that there is a huge distance between an invention being technologically feasible and it being actually implemented in the economy. The fact that our smartphones are produced using low-wage labour rather than robots is a case in point. It is surely possible to design (or at least conceive of designing in the near future) an entirely automated production process for smartphones. The fact they are not produced this way speaks to the relative costs of factors of production. It may be feasible to produce them in a fully automated manner, but it is cheaper to produce them with labour. This insight that the implementation of existing inventions depends on incentives in the economy can lead to implications that would be surprising in the context of a simpler model in which new technologies are implemented exogenously. For example, increasing the education level of the workforce can lead to increases in inequality as firms shift toward technologies that are more complementary with skills, effectively leaving unskilled workers behind (Beaudry & Green, 2003; Blundell et al., forthcoming).

Markets are also important in steering innovation. Inventors themselves respond to incentives and so will tend to focus on creating new technologies that either work with increasingly abundant factors (Acemoglu, 1998) or with factors that have become more expensive (Allen, 2017). Again, this can lead to implications that are different from those in simpler models in which innovations arrive exogenously. The key point, though, is that new technologies do not fall from the sky and our economic future is not technologically determined. That there are engineers who can conceive of and even create stunning new inventions does not imply that those inventions will rule the future of work. That both innovation and implementation of innovations are affected by incentives means that there is scope for policy to affect the path of technology. Frey (2019) raises this as a point of concern, worrying that fear of technology will lead us to implement policies that will cripple future innovation.[3] For us, the question is how a basic income would interact with these forces. Innovations are developed and implemented endogenously in response to prices in the economy. A basic income would alter those prices and thus affect innovation. For example, by supporting workers' demands that increase the cost of labour it could push firms toward greater automation and what Acemoglu and Restropo (2019) call the "wrong kind of AI." It might also raise demand for consumption goods that are more likely to be consumed by lower-income families, generating a derived

[3] It is interesting to note that Frey is one of the authors of a famous study that has often been used as the basis for claims that technology will cause the demise of work. In his book, he takes a much different stance, stating, "What's more, as the historical record makes abundantly clear, fears that work will disappear have always turned out to be false alarm. If we think that this time is different, we should at least be able to explain why. Yet when we look at previous episodes of automation anxiety, like those of the 1830s, 1930s, 1960s, and 2010s, it is striking how much technology has advanced, but how little the debate has progressed. When I was researching this book, I struggled to find a single argument for why this time should be different that had not been made in earlier debates about automation" (Frey, 2019, p. 330).

demand for innovation those types of goods. The impact of a basic income on labour costs is the subject of a different part of our overall basic income project. The implications for innovations in new goods is beyond our ability to peer into the future.

In the end, I think a reasonable interpretation of the theoretical literature on new technologies and the labour market point to a set of useful conclusions. First, our future is not technologically determined. Creating policies based on a predicted future in which technology inevitably eliminates work is, in my opinion, a mistake. Second, putting aside issues of concentration of firm market power, it is reasonable to predict that labour as a whole will actually do better in terms of wages and employment in the future because of innovation. Third, though, there are good reasons to believe that innovation will contribute to increased inequality, though a new, increasing trend in inequality has not, so far, emerged. Fourth, questions of concentration of market power are important and, left unchecked, could imply worse futures for workers. In B.C.'s case, the importance of economic rents in the form of returns on residential land in the Lower Mainland is a key point of breakdown in the competitive allocation of the output of the economy that has arisen at several points in our discussion. Since these are true rents, taxing them is an economically efficient policy because by their nature their allocation is separate from the efficient functioning of production in the economy. This is quite a different conclusion from one based on finding funding sources in the context of an economy in which work and production are being mainly determined by AI and other technologies that are arriving exogenously.

Conclusion

In this paper, I examined trends in the Canadian and B.C. labour markets with a focus on the question of whether those labour markets are heading for a future with either no jobs or polarized jobs with a few high-paying jobs and many low-paying jobs. Current trends do not point to such a future in the near term. Most tellingly, the proportion of jobs that are permanent and full time has been almost unchanged over the last 20 years. Matching that is a lack of movement in the proportion of employment that is own-account self-employment, part-time work, short tenure jobs and contract work. Further, employment rates, the level of inequality, and the share of income going to labour are all quite stable in B.C. over the last 10 to 20 years. In addition, an examination of the economic theory related to technological change and the labour market indicates that only under very extreme assumptions would we expect to see a future with no jobs and/or a declining share of income going to labour. Thus, there is simply no basis for a claim that we need to adopt a basic income because paid work will cease to be a viable mechanism through which to distribute the proceeds of society's production.

This does not at all mean that there are no problems with the labour market. Inequality and rates of non-standard work may be stable, but they are stable at high levels by historical standards. Both rose sharply in the 1980s and first part of the 1990s, with part-time rates for young people rising particularly strongly. In addition, there is reason to believe that worker

agency in the workplace declined in the same period, with the trend continuing well into the 2000s. This is reflected in the fall in unionization, especially in the private sectors, and signs of the rise of fissured work, where intermediary firms separate workers from the final demander of their services, resulting in lower wages and poorer working conditions. The relevant question about a basic income then turns out to be whether it could be a useful part of a set of tools to address these longer standing problems rather than whether it is needed because work as we know it is ending. On one side, one might make an argument in favour of a basic income because something new seems to be needed. Levels of inequality and precarity of work have proven robust to two decades of policy change and relatively strong labour markets. Perhaps something radically different is needed. On the other side, those two decades of policy have not included serious attempts to reform labour regulation. Labour regulation and policies that deal directly with the nature of work and pay would be the most direct route to addressing the long-standing problems—policies such as ones that place responsibility for work conditions and pay on the final user of labour services not an intermediary. Of course, this is not an either-or: a combination may be the best approach. There are claims that a basic income would increase worker bargaining power and allow workers to demand improvements in work arrangements. I don't think we could rely on that approach alone. The route from increased worker income to something like reducing the use of intermediary firms is just too indirect. I also worry that backstopping income at a low level could have the opposite effect, allowing firms to take even less responsibility for providing a decent income as workers take advantage of the backstop to, say, look for more part-time hours. To the extent such a shift in the desired form of work is a choice, it is potentially good but we need also keep our eye on its implications for work arrangements in the part of work done in the paid labour market. This means that any move to a basic income would have to be accompanied by serious reform to labour market regulations so that worker interactions with firms are on a sound footing whatever other sources of income they might have.

It is worth noting that part of the reason there has been a rise in concern over decreasing labour share and increasing inequality is because those trends are ongoing in the U.S. We naturally hear about them and, in the absence of other evidence, conclude that the same must be happening here. Canadian data says this is not the case. Why the difference? I believe that a key reason has been the strong performance of the resource sector from the early 2000s to a few years ago. That allowed for good job opportunities the effects of which spilled over into other sectors and other parts of the country (Green et al., 2019). The slowdown in that sector means we need to watch for the onset of problems of the type in the U.S. But it also means that our strong resource base provides a foundation on which we can build for the future. It provides us some elbow room to get the issues of labour regulation right. One other difference for B.C. has been the substantial role played by rising real estate prices in determining the overall labour share. Because those price increases correspond to economic rents—returns on a factor that are not in return for an efficient choice in the market—they can be taxed without damaging the efficiency of the economy. This is a fundamental tenet of public finance

economics—tax economic rents and negative externalities. I believe that these rents should be looked at as an important source of funds for addressing the long-standing inequality issues.

My arguments about the future impact of technology on work and pay may well be wrong. This version of technological change may be different from all the ones that have gone before. Facing uncertainty about the future, I think the right question is not which future is the one we should assume but, rather, can we insure ourselves against the possible arrival of the worse (bad job, low wage) equilibrium and, if so, at what cost? More specifically, in our context, would a basic income be an effective element of insuring against the worse equilibrium or, alternatively, would it help push us toward that equilibrium?

If the future is one with few jobs and low wages then we will not be able to rely on distribution or redistribution through the labour market to share the output of the economy. A basic income seems like a useful option in that context. But should we put that basic income in place now based on the chance of the worse equilibrium arising? As I said above, a cost to doing so seems to me to lie in shifting policy effort away from redistribution through the labour market, i.e., away from an emphasis on tools such as minimum wages, unions, and conditional work-related transfers such as the Canada workers benefit. A basic income, as proponents argue, has the potential to support worker wage demands by allowing them to more easily walk away from a bad job. But it also has the potential to shift risk onto workers, supporting a model in which workers are expected to adjust themselves rather than in conjunction with a firm. It is the balance between these arguments that is probably most relevant for us (as opposed to guessing the specific technological future). If a basic income is a means to support workers to bargain for better jobs then it could be part of the solution to the longer-term employment, precarity, and wage issues that arose in the 1990s. It would also be in place to help if the worse technological outcome materializes. If, instead, a basic income ultimately undermines redistribution through work then it may not be the right tool for the present.

On the cost side, the adoption of a basic income could affect our technological path. New technologies do not fall from the skies exogenously. They are developed and implemented endogenously in response to prices in the economy. A basic income would alter those prices and thus affect innovation. For example, by supporting workers' demands that increase the cost of labour it could push firms toward greater automation and what Acemoglu and Restropo (2019) call the "wrong kind of AI." These considerations of impacts on technological development pushes us toward considering a basic income as one of a set of policy tools including, for example, sovereign wealth funds in which governments impose co-investment in new technologies. In this context, one could imagine, at the very least, setting up a small version of a basic income just so that the mechanism was in place to turn to if the worse equilibrium suddenly materialized. But since technologies take time to evolve and be implemented, there is no reason to put a substantial basic income in place now as insurance against a future that may not emerge.

Finally, if the worst future is truly on its way then there is an argument for a shift toward greater redistribution of society's output and resources—a shift that may or may not include a basic income. Francois (2019) argues that if we arrive in a future in which machines can truly

replicate everything we do—including inventing new processes—then all of our regular logic about incentives to work and invention disappear. If machines are inventing new processes then humans do not need incentives to do so. With our current market set up, the property rights over the new processes would go to the people who owned the capital just before machines started inventing for themselves. This, though, would have no economic rationale since redistributing the returns on the new inventions away from those people would not alter the machines' rate of invention. Francois argues this would appear clearly unjust to the vast majority of people in society without claims on those economic rents and considerable unrest would result. His prediction is that the societies that would handle the transition to the new world the best would be the ones with a tradition of redistribution. The ones with a strong emphasis on historical property rights and individualism will handle it badly. This argument, though, is about distributing away from the owners of capital and possessors of economic rents. How the funds recovered from taxing those sources of revenue are then distributed is a separate issue. In other words, this could be a strong argument in favour of something like a sovereign wealth fund but not necessarily for a basic income. Indeed, to the extent that a basic income is embedded in a philosophy of individual liberty and, with it, property rights, it may be the wrong tool for preparing us for the bad version of the future.

References

Abraham, K. G., B. Hershbein & Houseman S. (2019). Independent contract, informal, and online intermediary Work: Preliminary evidence on developing better measures in household surveys. University of Maryland.

Acemoglu, D. (1998). Why do new technologies complement skills? Directed technical change and wage inequality. *Quarterly Journal of Economics, 113*(4), 1055–1089.

Acemoglu, D., & Restropo P. (2017). The race between man and machine: Implications of technology for growth, factor shares, and employment. Massachusetts Institute of Economics.

Acemoglu, D., & Restropo P. (2019). The wrong kind of AI? Artificial intelligence and the future of labor demand. National Bureau of Economic Research (NBER) Working Paper 25682.

Allen, R. C. (2017). Lesson from history for the future of work. *The Future of Work, A Nature Special Issue*, *550*(7676), 321–4.

Anderson, E. (2017). *Private Government: How Employers Rule Our Lives (and Why We Don't Talk about It).* Princeton University Press.

Ardito, R. B., & Rabellino, D. (2011). Therapeutic alliance and outcome of psychotherapy: Historical excursus, measurements, and prospects for research, *Frontiers in Psychology, 2* (270).

Autor, D., Dorn, D. , Katz, L. F., Patterson, C., & Van Reenen, J. (2017). The fall of the labor share and the rise of superstar firms. NBER Working Paper 23396.

Bahar, S., & Liu, H. (2015). Unincorporated self-employment in Canada, 1989 to 2010. *The Canadian economy in transition series*. Statistics Canada, 11-622-M No. 031.

Barkai, S. (2018). Declining labor and capital shares, London Business School Working Paper.

Beaudry, P., & Green, D. A. (2003). The changing structure of wages in the US and Germany: What explains the difference? *American Economic Review*, *93*(3), 573–602.

Beaudry, P., Green, D. A., & Sand, B M. (2016). The great reversal in the demand for skill and cognitive tasks. *Journal of Labor Economics, 34*(S1), S199-S247.

Bloom, N., Guvenen, F. Smith, B., Song, J., & von Wachter, T. (2018). Is the large firm wage premium dead or merely resting? *AEA Papers and Proceedings 108*(1), 317–22.

Blundell, R., Green, D. A. & Jin, W. (forthcoming). The UK as a technological follower: Higher education expansion, technological adoption, and the labour market. *Review of Economics Studies*.

Brochu, P. (2013). The source of the new Canadian job stability patterns. *Canadian Journal of Economics, 46*(2), 412–440.

Brochu, P., & Zhou, L. (2009). Is job insecurity on the rise? Evidence from Canadian perception data. *Canadian Journal of Economics, 42*(4), 1305–25.

Busby, C., & Muthukumaran, R. (2016). *Precarious positions: Policy options to mitigate risks in non-standard employment.* C.D. Howe Institute: Commentary No. 462.

Caselli, F., & Manning, A. (2019). Robot arithmetic: New technology and wages. *American Economic Review: Insights, 1*(1), 1–12.

Collins, B., Garin, A. Jackson, E. Koustas, D. & Payne, M. (2019). Is gig work replacing traditional employment? Evidence from two decades of tax returns. https://www.irs.gov/pub/irs-soi/19rpgigworkreplacingtraditionalemployment.pdf

Dao, M. C., Das, M., Koczan, Z., & Lian, W. (2017). Why is labor receiving a smaller share of global income? Theory and empirical evidence. IMF Working Paper 17/169.

Dube, A., & Kaplan, E. (2010). Does outsourcing reduce wages in the low-wage service occupations? Evidence from janitors and guards. *Industrial & Labor Relations Review 63*(2), 287–306.

Elsby, Michael W. L., Hobijn, B., & Sahin, A. (2013, Fall). The decline of the U.S. labor share. Brookings Papers on Economic Activity.

Fortin, N. & Lemieux, T. (2015). Changes in wage inequality in Canada: An interprovincial perspective. *Canadian Journal of Economics, 48*(2), 682–713.

Frenette, M., Green, D. A., & Milligan, K. (2007). The tale of the tails: Canadian income inequality in the 1980s and 1990s. *Canadian Journal of Economics, 40*(3), 734–64.

Frey, C. B. (2019). *The technology trap: Capital, labor, and power in the age of automation.* Princeton University Press.

Fuller, S., & Stecy-Hildebrandt, N. (2014). Lasting disadvantage? Comparing career trajectories of matched temporary and permanent workers in Canada. *Canadian Review of Sociology, 51*(4), 293–323.

Fuller, Sylvia, & Stecy-Hildebrandt, N. (2015). Career pathways for temporary workers: Exploring heterogeneous mobility dynamics with sequence analysis. *Social Science Research, 50*, 76–99.

Gray, D., & Busby, C. (2016). Unequal access: Making sense of EI eligibility rules and how to improve them. CD Howe Institute, Commentary No. 450.

Green, D. A. (2020). Trends in the BC and Canadian Labour Markets and Their Implications for a Basic Income. Research paper commissioned by the Expert Panel on Basic Income, British Columbia.

Green, D. A., Liu, H., Ostrovsky, Y., & Picot, G. (2019). Immigrant entrepreneurs: The entry of immigrants into firm ownership, UBC Vancouver School of Economics Working Paper.

Green, D. A., Morissette, R., Sand, B. M., & Snoddy, I. (2019). Economy wide spillovers from booms: Long distance commuting and the spread of wage effects. *Journal of Labor Economics, 37*, S642-S687.

Green, D. A., & Sand, B. M. (2015). Has the Canadian labour market polarized? *Canadian Journal of Economics, 48*(2), 612–646.

Grekou, D., & Liu, H. (2018). The entry into and exit out of self-employment and business ownership in Canada. *Analytic Studies Branch Research Paper Series.* Statistics Canada, 11F0019M–No. 407.

Groshen, E. L., Helper, S., MacDuffie, J. P. & Carson, C. (2018). Preparing U.S. workers and employers for an autonomous vehicle future. Prepared for Securing America's Future Energy. Upjohn Institute Technical Report No 19–036.

Gutierrez, G., & Philippon, T. (2019). Fading stars. NBER Working Paper 25529.

International Labour Organization. (2016). *Non-standard employment around the world*. https://www.ilo.org/global/publications/books/WCMS_534326/lang--en/index.htm

Ivanova, I. (2019, March). *CCPA-BC response to the BC Ministry of Labour consultation paper on modernizing the Employment Standards Act*. Canadian Centre for Policy Alternatives, BC Office.

Jeon, S-H., Liu, H. & Ostrovsky, Y. (2019). Measuring the gig economy in Canada using administrative data. Statistics Canada Working Paper.

Katz, L. F., & Krueger, A. B. (2016). The rise and nature of alternative work arrangements in the United States: 1995–2015. Harvard University Working Paper.

Katz, L. F., & Krueger, A. B. (2019). Understanding trends in alternative work arrangements in the United States. NBER Working Paper No. 25425.

Kehrig, M., & Vincent, N. (2017). Growing productivity without growing wages: The micro-level anatomy of the aggregate labor share decline. Duke University, Economics Working Paper.

Krahn, H. (1995, Winter). Non-standard work on the rise. *Perspectives on Labour and Income.* Statistics Canada, 75-001-XPE, 35–42.

Lawrence, R. Z. (2015). Recent declines in labor's share in US income: A preliminary neoclassical account. NBER Working Paper 21296.

Lemieux, T., Milligan, K. Schirle, T., & Skuterud, M. (2020). Initial impacts of the COVID-19 pandemic on the Canadian labour market. Canadian Labour Economics Forum. Working Paper 26.

Manyika, J., Mischke, J., Bughin, J., Woetzel, J., Krishnan, M., & Cudre, S. (2019, May). A new look at the declining labor share of income in the United States, McKinsey Global Institute Discussion Paper.

Noack, A. M., & Vosko, L. F. (2011, November). Precarious jobs in Ontario: Mapping dimensions of labour market insecurity by workers' social location and context. *Vulnerable Workers and Precarious Work*. Law Commission of Ontario.

Piketty, T. (2017). *Capital in the Twenty-First Century.* Belknap Press.

Rinehart, W., & Gitis, B. (2015). Independent contractors and the emerging gig economy. *American Action Forum*, https://www.americanactionforum.org/research/independent-contractors-and-the-emerging- gig-economy/

Rognlie, M. (2015). Deciphering the fall and rise in the net capital share: Accumulation or scarcity? *Brookings Papers on Economic Activity, 46*(1), 1–69.

Song, J., Price, D. J., Guvenen, F., Bloom, N., & Von Wachter, T. (2018). Firming up inequality, UCLA Department of Economics.

Statistics Canada. (2017, February 28). The sharing economy in Canada. *The Daily.* Statistics Canada Catalogue 11-001-X. https://www150.statcan.gc.ca/n1/daily-quotidien/170228/dq170228b-eng.htm

Statistics Canada. (2020, May 8). Labour Force Survey, April 2020. *The Daily*. https://www150.statcan.gc.ca/n1/daily-quotidien/200508/dq200508a-eng.htm

Steinbaum, M. (2017, May 12). Why are economists giving Piketty the cold shoulder? *Boston Review*.

Tucker, E., Vosko, L. F., Grundy, J., & Stromdahl, A. (2016). Outsourcing and supply chains in Canada. Articles & Book Chapters, 2599. https://digitalcommons.osgoode.yorku.ca/scholarly_works/2599

Van Parijs, P., & Vanderborght, Y. (2017). *Basic income: A radical proposal for a free society and a sane economy.* Harvard University Press.

Vosko, L. F., Zukewich, N., & Cranford, C. (2003, Fall). Precarious jobs: A new typology of employment. *Perspectives on Labour and Income.* Statistics Canada, 75-001-XIE, 16–26.

Weil, D. (2019). Understanding the present and future of work in the fissured workplace context. *Russell Sage Foundation Journal of Social Sciences, 5*(5), 147–165.

Figure 1

Proportion of Workers Who Are Permanent, Full-Time Employees, Canada: 1989–2019

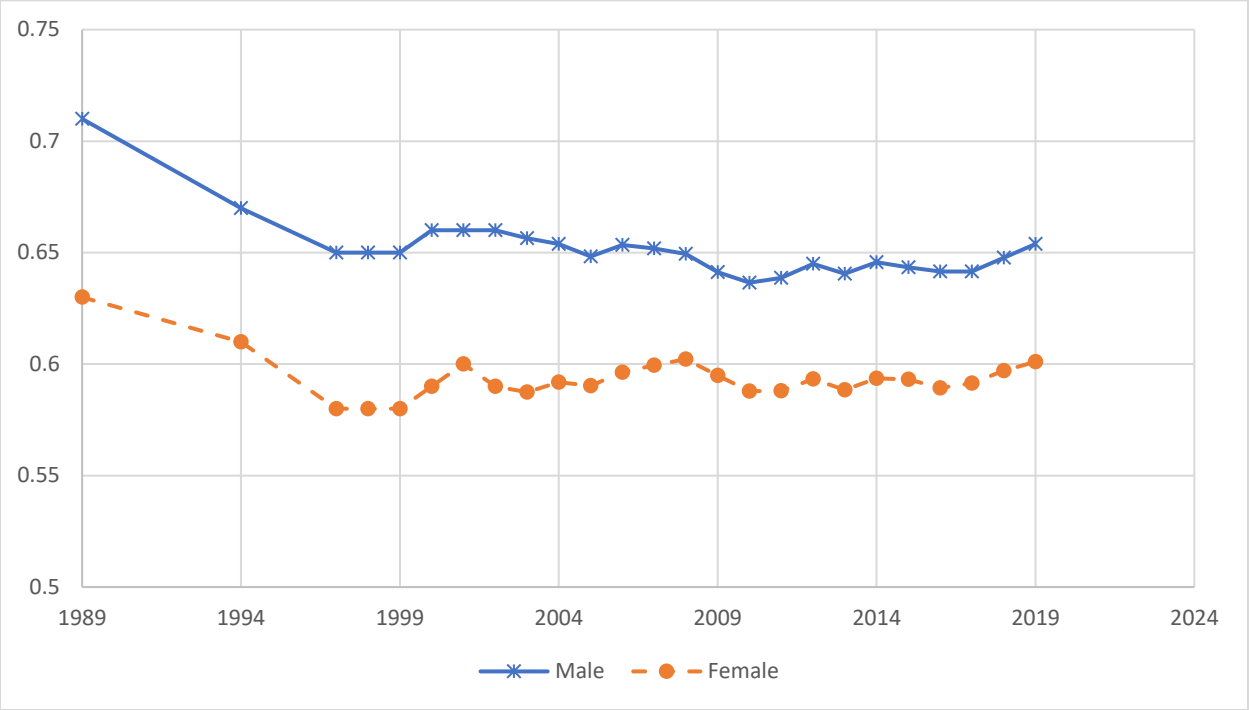

Figure 2

Proportion of Workers Who Are Permanent, Full-Time Employees, Canada and B.C., 1997–2019

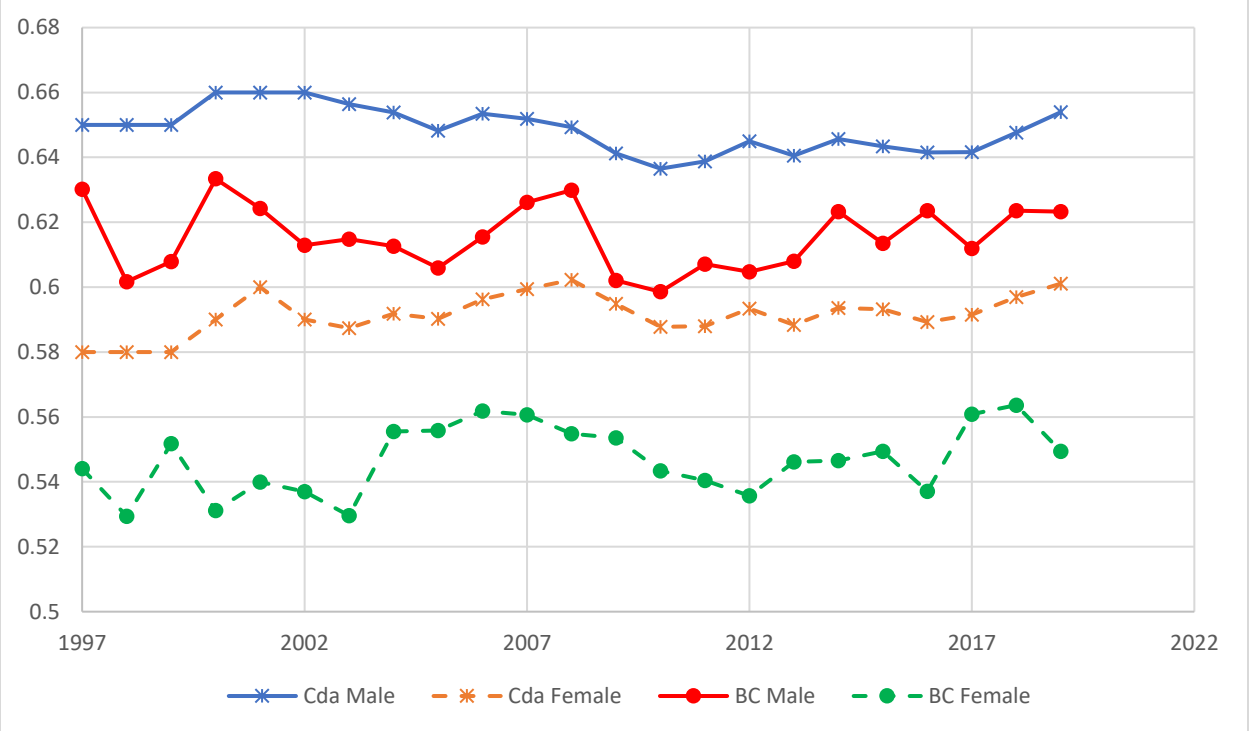

Figure 3

B.C. Unionization Rates, All Workers and Private Sector, by Gender

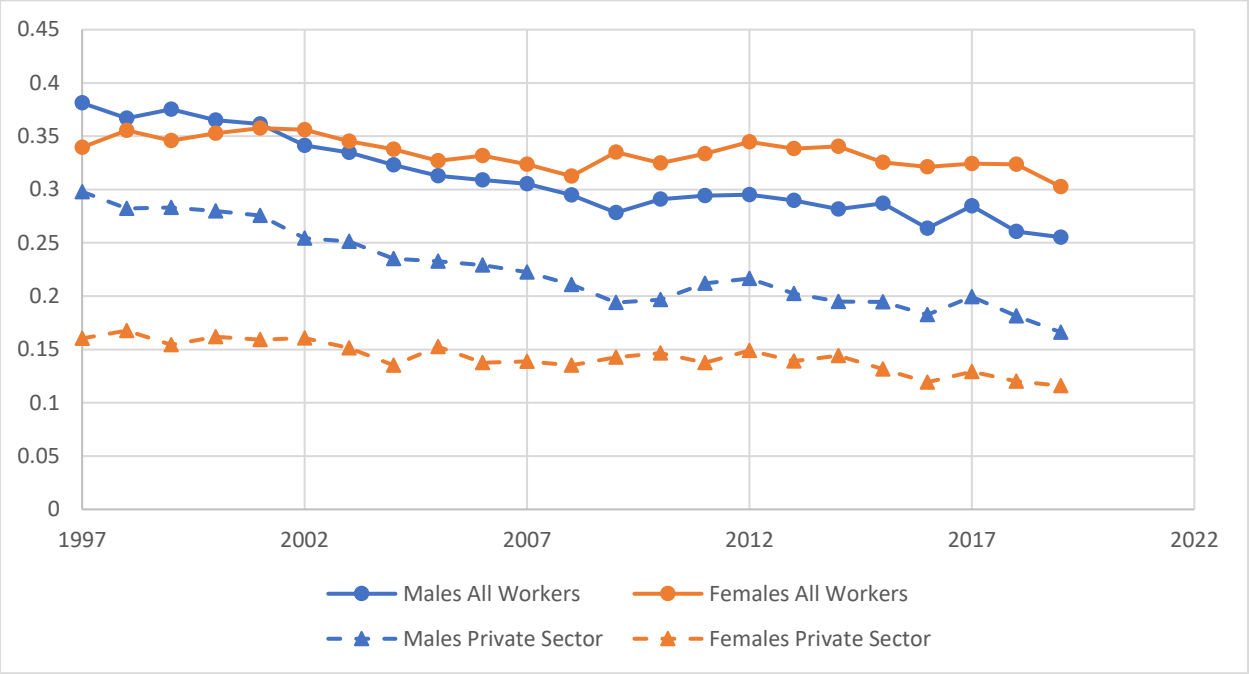

Figure 4

Proportion of All Workers in Fissured Industries, B.C. and Canada

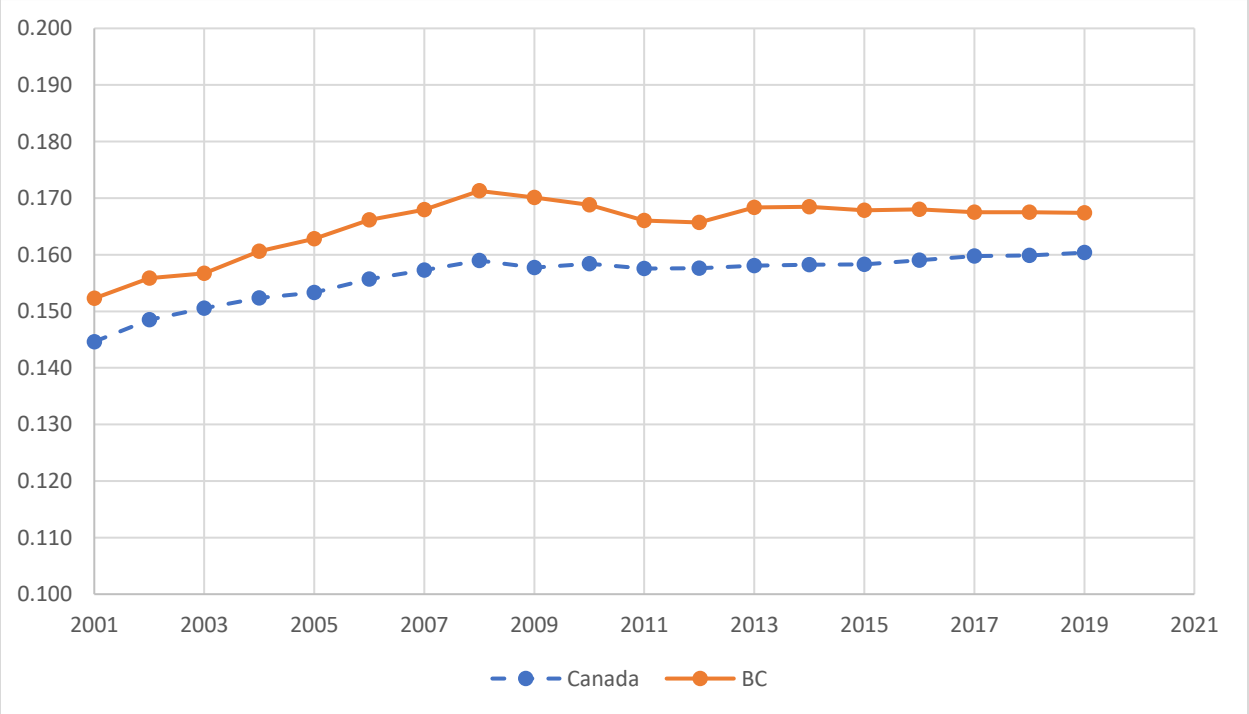

Figure 5

Employment and Participation Rates, B.C., Age 25 to 54, High School Graduates

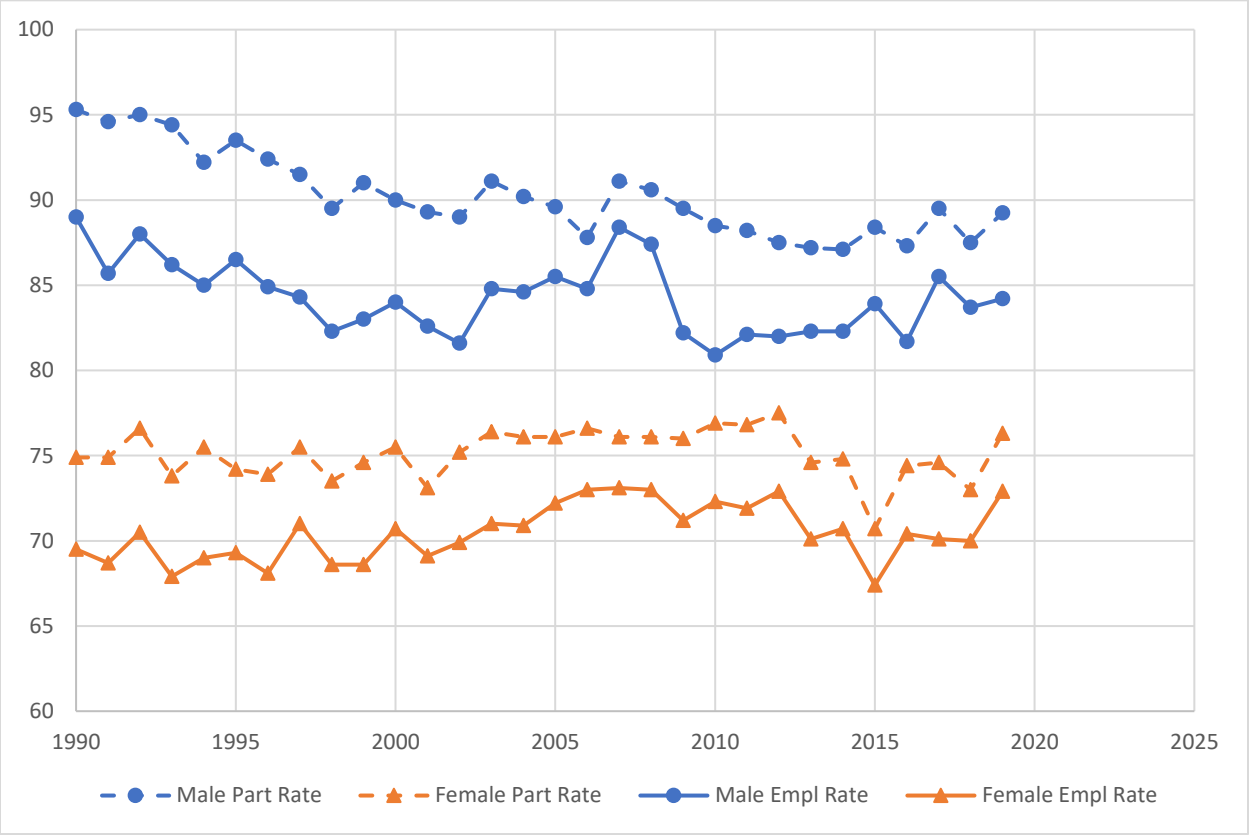

Figure 6

Proportion of Workers in Cognitive, Manual, and Routine Occupations, B.C., Age 15-plus

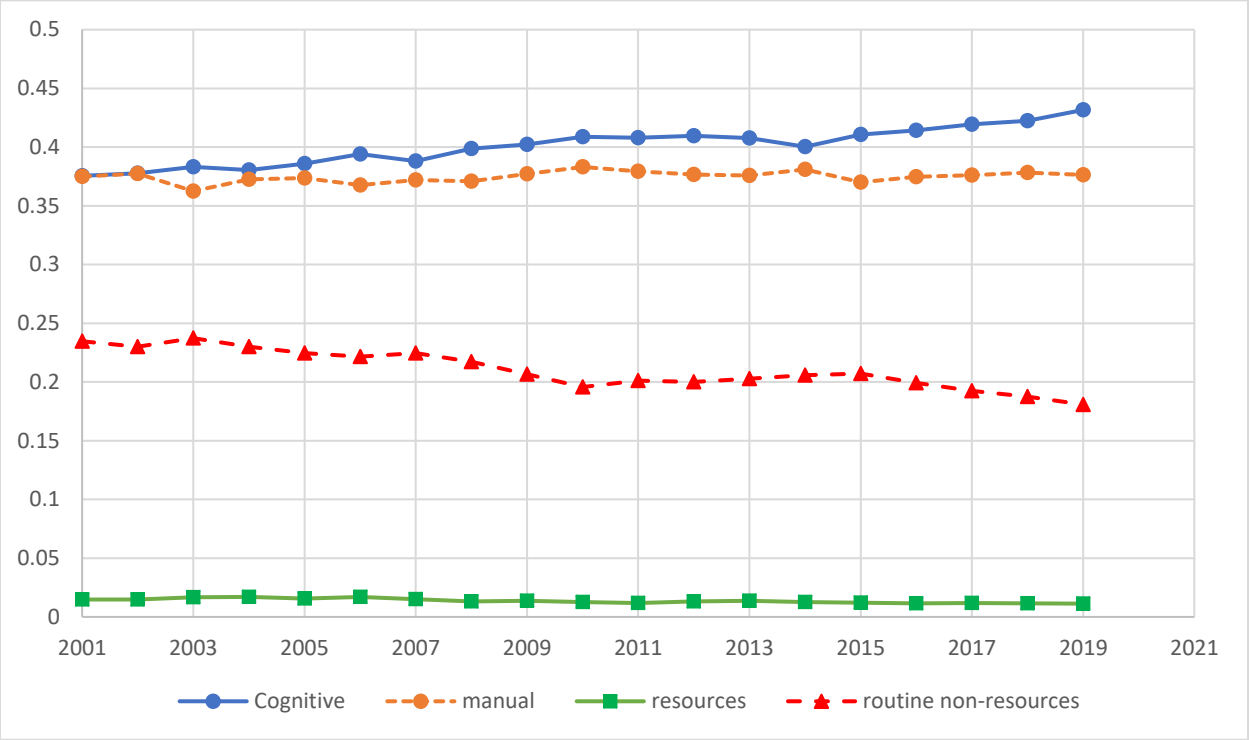

Figure 7

Gini Coefficients for Market and Disposable Income, B.C., 1976–2018

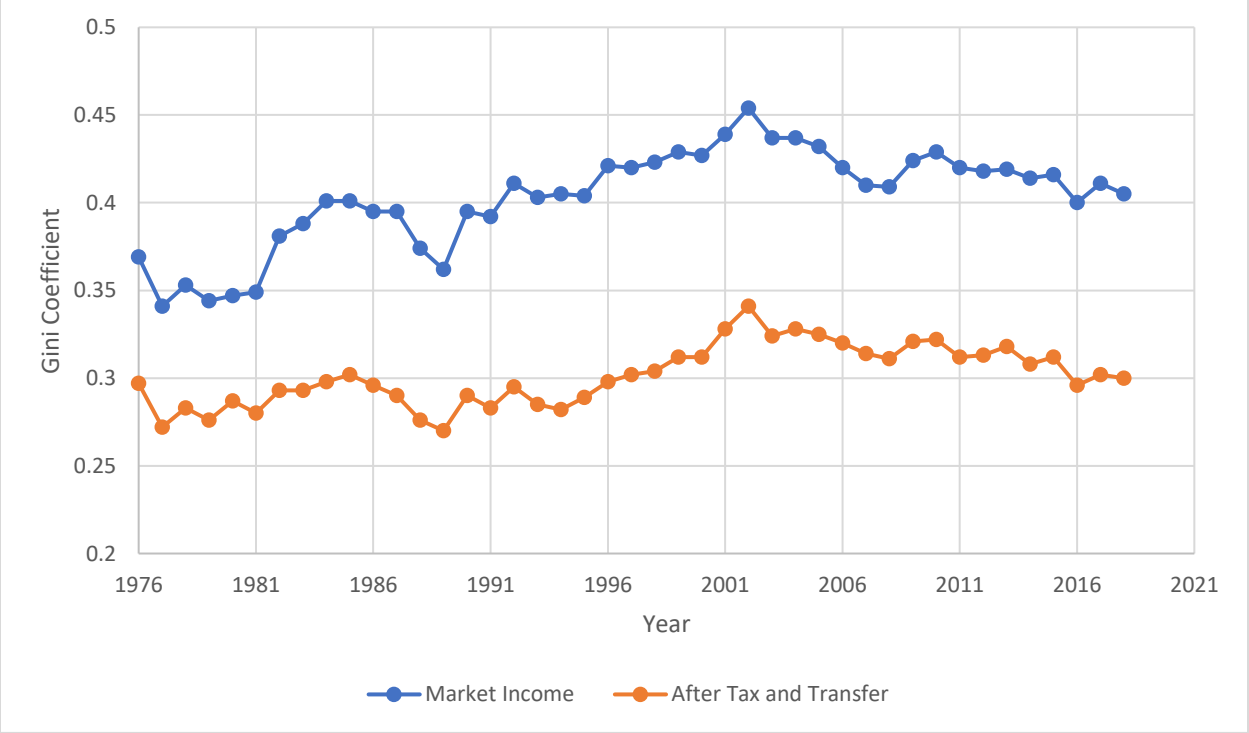

Figure 8

Canada: Unadjusted Labour Share, 1961 Q1–2020 Q1

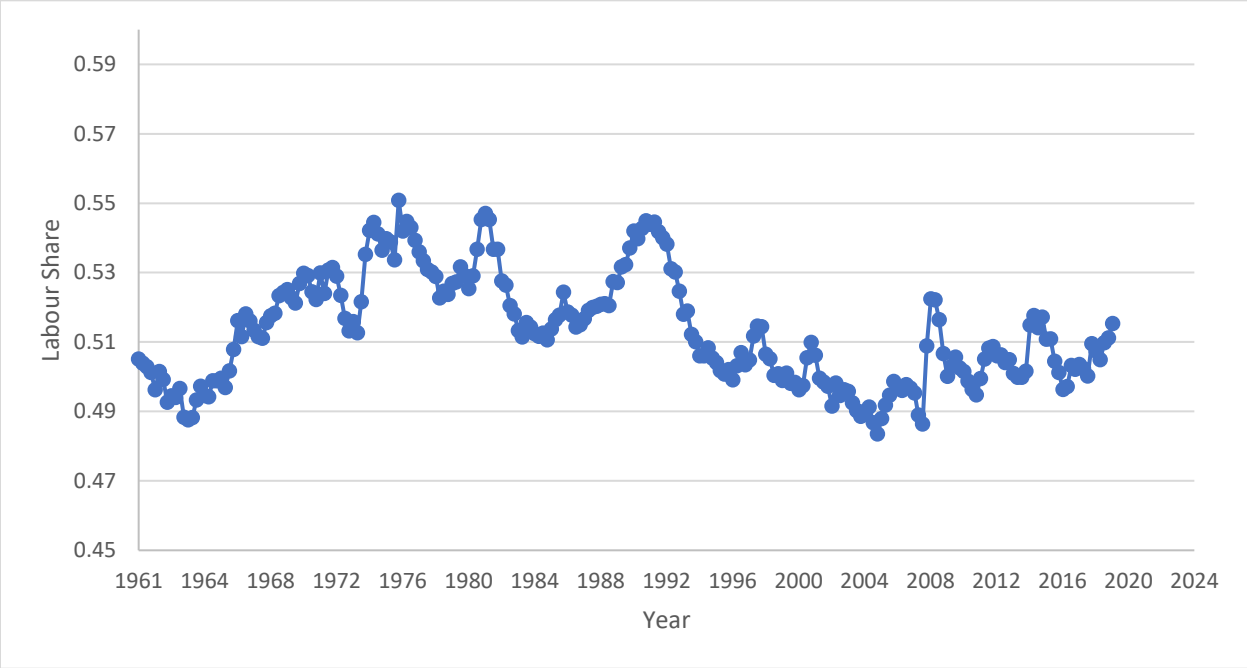

Figure 9

B.C. Employment Rate, January 1997–April 2020