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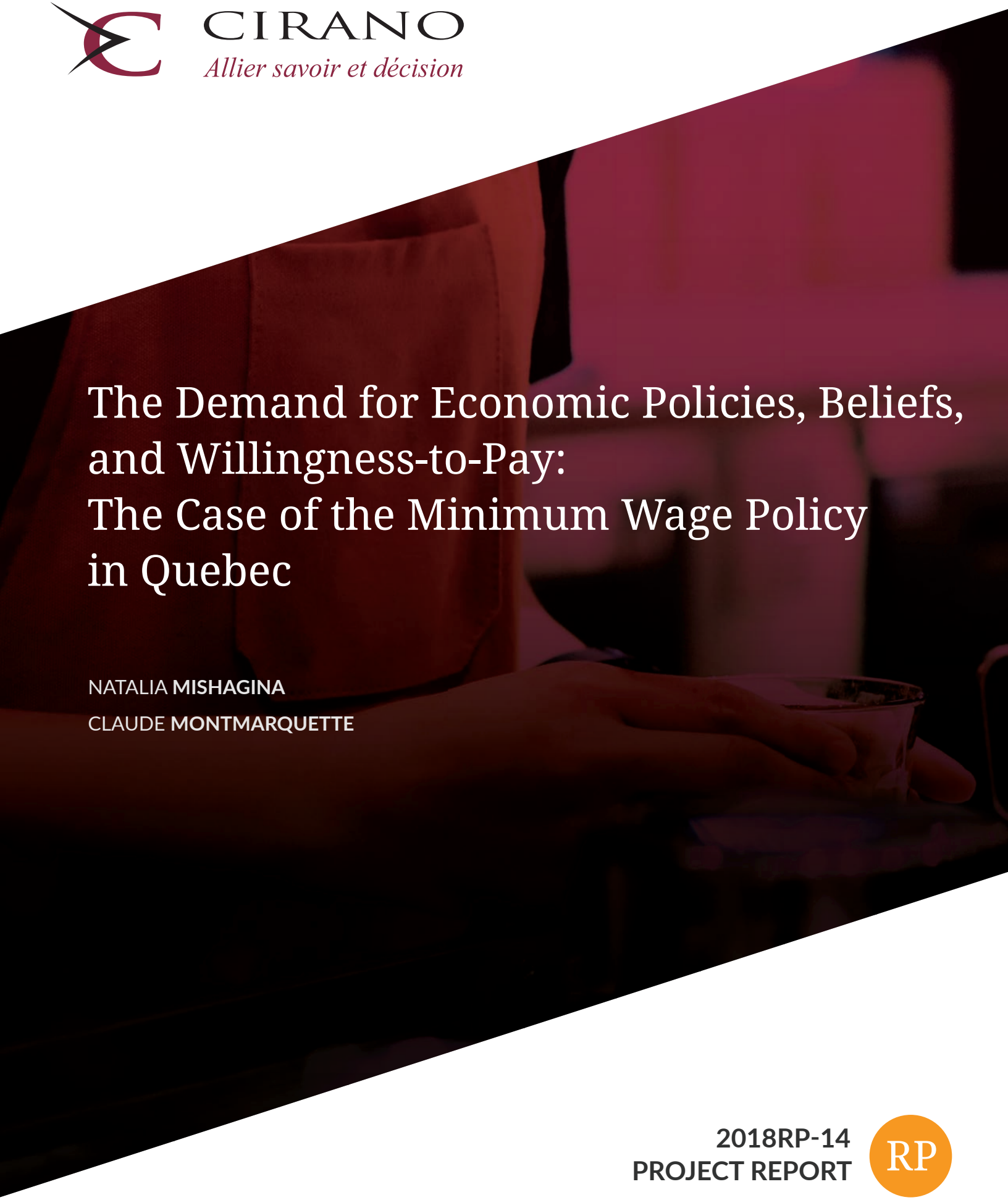

The Demand for Economic Policies, Beliefs, and Willingness-to-Pay: The Case of the Minimum Wage Policy in Quebec

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The Demand for Economic Policies, Beliefs, and Willingness-to-Pay: The Case of the Minimum Wage Policy in Quebec

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Executive Summary

With the emergence of the Internet and social media, all democratic governments face a significant challenge when it comes to informing their constituents of the relevance of their policies. Communication is already a difficult task and presents a huge challenge for governments in the context of information manipulation and the phenomenon of 'fake news.' To communicate effectively in such a context requires a good understanding of the issues and the need to answer two key questions: What determines support for economic policies? Moreover, how does the public react to information?

According to economic theory, individuals make choices based on their preferences, beliefs, and budget constraints. Does the same reasoning apply to people's choices in the domain of public policy? Moreover, if so, can we change whether they support or reject a policy by confronting their beliefs and by changing their budget constraints? Our study approaches both questions using the case of increasing the minimum wage to $15 an hour in Quebec.

In April 2007, we administered an online survey-experiment to 2,255 Quebeckers whose demographic characteristics were mainly representative of the general population. We collected their opinions on whether the hourly minimum wage should be equal to $15 (it was $10.75 at the time of the survey). The survey inquired if the individual respondent believed that he (she) or her family will directly benefit from the increase. We then elicited respondents' knowledge of specific facts about the Quebec economy and their beliefs about possible consequences of raising the minimum wage. We also measured their social preferences using a modified dictator game, as well as their values using a series of questions about attitudes to redistribution, unemployed individuals, and perceptions of whether effort drives success (as opposed to luck or other factors). At the end of the survey, we administered an economic literacy test and measured respondents' reasoning abilities using the Cognitive Reasoning Test and a numeracy test.

We then provided all respondents with the factual information about the current minimum hourly wage (in absolute terms and relative to the average hourly wage) and the proportion of workers who earn the minimum wage. Next, we randomly assigned participants to one of seven groups. All seven groups received the factual information that we described above. The first group did not receive any other information. The remaining six groups received information about hypothetical consequences of raising the minimum wage in addition to the factual information. Out of these six groups that received the hypothetical scenarios, the first three groups received one hypothetical scenario each about a possible loss of employment (10%, 30%, or 50%, respectively). The remaining three groups received one hypothetical scenario each about a possible increase in prices (5-10%, 15-20%, and 25-30%, respectively). After respondents read the provided factual information and hypothetical scenarios (if they had one), we asked them again whether the minimum wage should be raised.

Losses of employment can be thought of as a cost of the minimum wage increase directly to workers who earn the minimum wage. Price increases can be thought of as a cost of the

minimum wage increase directly to the respondents. Therefore, we treat responses after the information treatment as a willingness to pay for the policy, either as costs to others or as direct costs to self.

We report several findings:

1. Before the information treatment, opinions about raising the minimum wage were consistent with respondents' preferences, beliefs, economic literacy, and their reasoning abilities.
2. After the information treatment, opinions in favour of raising the minimum wage decreased in all seven groups. The smallest decrease in support occurred after the provision of the factual information alone (group 1). In the remaining six groups, the support for raising the minimum wage decreased as the hypothetical consequences of raising the minimum wage became costlier.
3. Respondents predominantly overestimated the proportion of workers who earn the minimum wage and underestimated the level of income considered a poverty threshold. Respondents also tended to believe that in a market economy high wages are mostly due to responsible business leaders and that the minimum wage is lower than a market wage.
4. A substantial proportion of respondents also expected positive outcomes on the labour market due to an increase in the minimum wage such as no loss of employment and more job opportunities for the unemployed. Respondents' beliefs about the consequences of raising the minimum wage appeared linked to their political preferences.
5. When provided with the factual information in group 1, respondents with erroneous beliefs were the most likely to reduce their support for the policy.
6. When provided with hypothetical scenarios, respondents whose beliefs contradicted the information in hypothetical scenarios were the most likely to reduce their support for the policy.
7. In each of the seven groups, out of the respondents who initially did not support the increase in the minimum wage, there were between 10% and 25% of respondents who changed their mind after the information treatment and expressed support for the policy. The largest proportion of individuals who changed their mind (25%) was in group 2 where the hypothetical scenario asked about a 10% loss in employment if the minimum wage increases.
8. Conditional on the participant's initial choice to support the increase in minimum wage to $15, we observe a good deal of heterogeneity among the participants in the dynamics of their decision before and after information: while many switched from "Yes" to "No," some went from "No" to "Yes." Compared with individuals who believed in large employment losses, believing in some loss or hardly any loss was associated with a higher probability of switching opinions from "Yes" to "No" (by 12.6 and 13.2 percentage points, respectively). The respondents who turned favourable to raising the

minimum wage after the information treatment tended to over-estimate the consequences relative to hypothetical scenarios they were presented.

We conclude that the demand for the increase in the minimum wage is consistent with individuals' preferences and beliefs. Moreover, as the price of the policy increases, the demand for the policy drops. This drop is most prominent among those whose beliefs differed from the hypothetical scenarios that we provided. Respondents appear to be more sensitive to the costs of the policy regarding job losses than regarding prices. Given that we elicited stated rather than revealed willingness-to-pay, it is possible that respondents understate their willingness to pay the costs regarding losses of jobs, and overstate their willingness to pay the costs regarding higher prices.

In our study, although information on facts is important, information on the consequences of raising the minimum wage is fundamental. However, the task of moving from hypothetical scenarios to credible consequences should not be minimized. Who should inform the citizens? How to do it? In this case, there seems to be some consensus on the consequences of raising the minimum wage on prices and employment, but for other policies, this is not necessarily the case in general.

The determinants of what is perceived as credible information remain to be analyzed. It is a difficult task in a world of false information, false data or even alternative data. We must develop a culture of evidence based on science. The solution to this problem, like many other problems, is grounded in general education, and in the case of public policy, economic literacy is a key factor.

Introduction

With the emergence of the internet and social media, all democratic governments are confronted with a significant challenge to inform their constituents about the relevance of their policies. Communication is already a difficult task, and in the context of manipulated and fake news, the problem has developed into a tremendous challenge for governments. To answer this question, we need to have a good understanding of two key issues: what determines the demand for economic policies and how does the public react to information.

As economists, we would approach the first issue by modeling the decision to support a policy the same way we study other choices. That is, we would model it as an outcome that maximizes an individual's utility given the beliefs and budget constraints. In other words, given the public's preferences over the states of the economy before and after the new policy, people would approve the policy if it results in the most favourable outcome after some cost-benefit considerations. Therefore, if the government wants people to accept a policy, it should communicate the policy's costs and benefits, because preferences are assumed to be policy-invariant. The approach to the second issue, namely, policy communication, would then consist of an information campaign based on facts and arguments supported by expert opinions and well-document research.

The approach to the first issue is fundamentally based on an assumption, among several, that people hold correct beliefs about the costs and benefits of the policy. [1] That is, people are aware of where the economy is in the present and where it will be in the future as a result of the policy. That, in turn, requires an individual to possess a sound knowledge of economic facts and a comprehensive understanding of economic mechanisms. However, it has been shown that people often hold erroneous beliefs about various aspects of the economy that are systematic (e.g., SAEE, 1996; Caplan, 2002; Blinder and Krueger, 2004) and have a poor understanding of economic mechanisms (e.g., Jappelli, 2010 and Caplan, 2007). Should we conclude that policy communication needs a fact sheet and a course in economic principles?

As reported by recent research in various fields, providing relevant facts and education produces mixed outcomes. In their famous study, Tversky and Kahneman (1982) showed people's susceptibility to framing. A vast literature in political sciences reports similar findings concerning opinion polls (Zaller, 1992). Moreover, political scientists and neuroscientists have shown that *knowing* and *believing* facts do not always coincide (Kahan, 2015), that challenging certain beliefs is difficult because of the neural mechanisms involved (Kaplan et al., 2016) and that challenging beliefs, especially those linked to one's identity, can backfire (Nyhan, 2013, 2014).

This study explores the topic of active policy communication using the case of increasing the

[1] Another implicit assumption is that people know their preferences.

minimum wage in Quebec to $15 an hour. This topic has been a matter of recent public debates with the focus in the media being on the policy's effect on the purchasing power of the concerned workers, the socio-economic profile of those earning the minimum wage, the negative consequences of higher prices for specific goods, the loss of employment among the youth, and on the overall futility of higher minimum wages in reducing poverty.

Before one attempts to tackle the central question of successful communication about the minimum wage policy, one should have good answers to an array of important questions. Who supports or disavows the policy? Are choices over the minimum wage policy consistent given people's beliefs and preferences? Which messages are more effective in changing public opinion? Who is resistant to change? How do people differ in their response to the information messages given their prior beliefs? Do political views and values affect people's choices of the policy and their reaction to information?

Although public opinion polls often collect information on people's opinions about various policies, they mostly report the socio-demographic portrait of policy supporters and its critics. Since most socio-demographics are policy-invariant (e.g., age or gender), it is more important to measure people's beliefs and preferences and to challenge those beliefs with information messages. We combine a questionnaire about socio-demographic characteristics of the participants and their policy opinions with validated incentivized instruments used in experimental economics for eliciting preferences and beliefs. We collect opinions about the minimum wage policy twice, before and after an information treatment. The information treatment contains factual information about the current minimum wage and hypothetical scenarios about possible consequences to employment and prices if the minimum wage increases. We administer the survey online to a large representative sample of Quebecers in April 2017.[2]

Our results show that before the information treatment 67% of our respondents supported the increase in the minimum wage. We also find that the information treatment reduced support by 23 percentage points (from 67% to 44%). Adding information about consequences was more effective in reducing support than providing the factual information alone. Overall, information about consequences to employment and consequences to prices were similarly effective in reducing the proportion of respondents in favour of raising the minimum wage. As hypothetical consequences increased, the support for the minimum wage fell. However, the reduction in support was not as steep in response to hypothetical increases in prices as in response to hypothetical job losses.

We also observed that the information provided to the participants was a "double-edged sword" because it changed public opinion in both directions. That is, we had respondents who changed their responses to the increase of the minimum wage from "Yes" to "No" and respondents who changed from "No" to "Yes" after the information treatment. Our analyses suggest that respondents who turned favourable to raising the minimum wage after the

[2] Elements of the survey and online experiment are presented in the Appendix.

information treatment tended to over-estimate the consequences relative to hypothetical scenarios they were presented.

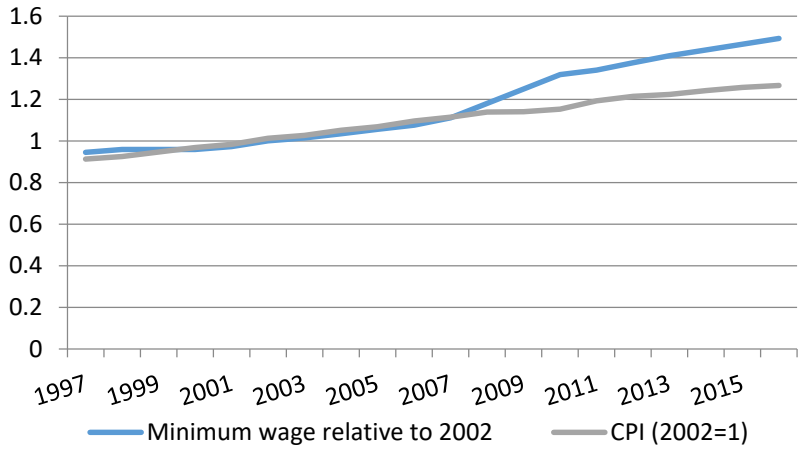
This report is organized as follows. It begins with a brief background on the minimum wage policy and its economic consequences. The next section summarizes the relevant literature on choices, economic literacy, and beliefs, as well as studies concerned with confronting beliefs. We then proceed with outlining the experimental design. The following section presents our main results, and the final section concludes.

Background on the minimum wage

The minimum wage policy is commonly seen as a tool to reduce poverty among the minimum wage earners. In the recent years, a wave of demands to raise the minimum wage to $15 an hour has affected multiple American states and Canadian provinces. Between 2014 and 2017 several American states passed legislation to raise the minimum wage gradually. In October 2017, Ontario committed to gradually raising the minimum wage to $15 an hour by January 1, 2019. In Alberta, the increase will take place in October 2018.

Quebecers have a long history of the minimum wage. Ledoux (2010) showed that the state intervention in the field of personal labour relations goes back to 1885. Since the continuing introduction of laws to ensure fair remuneration for low-income workers, the interest in the minimum wage remains present in the political agenda.

Figure 1: Dynamics of minimum wage and CPI in Quebec

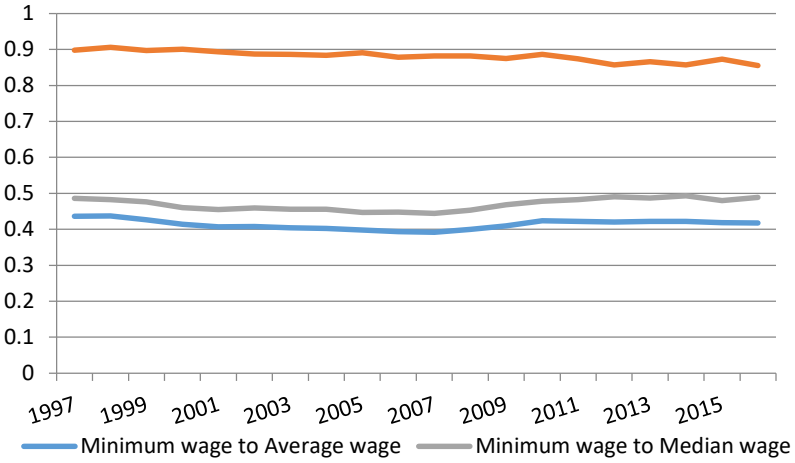


Source: 1. Commission des normes, de l'équité, de la santé et de la sécurité du travail (http://www.cnt.gouv.qc.ca/en/wages-pay-and-work/wages/history-of-the-minimum-wage/index.html). 2. Statistics Canada, Statistics Canada. Table326-0020 - Consumer Price Index, monthly (2002=100 unless otherwise noted), CANSIM (database).

The historical evolution of the minimum wage over the period from October 1, 1997, to May 1, 2016, is shown in Figures 1 and 2. Figure 1 demonstrates that the minimum wage has remained constant in real terms until 2007 and grew at a faster rate than prices afterward.

Figure 2 shows that the ratios of the minimum wage to the average wage, minimum wage to median wage and the median wage to average rate are constant over the last 20 years.[3] Relative to the average hourly wage, the minimum wage has fluctuated between 39% and 44%.[4]

Figure 2: Dynamics of minimum wage relative to mean and median wages in Quebec



Sources: 1. Commission des normes, de l'équité, de la santé et de la sécurité du travail (http://www.cnt.gouv.qc.ca/en/wages-pay-and-work/wages/history-of-the-minimum-wage/index.html). 2. Statistics Canada. Table 282-0072 - Labour force survey estimates (LFS), wages of employees by type of work, North American Industry Classification System (NAICS), sex and age group, annual (current dollars unless otherwise noted).

The popularity of the minimum wage policy is based on the expectations that a higher minimum wage will directly benefit low-income families and that its negative effects for the society are minimal if any (MaCurdy, 2015). Hence, the attention in the economic literature has focused on these two issues: what are the socio-economic profiles of the minimum wage workers (who benefits from the policy) and what are the economic consequences of the policy (who pays for the policy).[5] MaCurdy focused on the last question in more detail. He described three possible candidates to be a payer for the minimum wage policy depending on how employers of minimum wage workers handle the hike in the minimum wage.

[3] An interesting reference for Quebec is the data published by 'Le secrétariat du travail' published in their annual minimum wage revision: https://www.travail.gouv.qc.ca/fileadmin/fichiers/Documents/etudes_d_impact/AIR_Normes2018.pdf. The average salary used by the Secretariat is from Statistics Canada's Survey of Employment, Payrolls and Hours.

[4] While slightly declining since 2005, the ratios of the median over average wages remain high over time. This situation reflects a rather equal distribution of wages.

[5] There is a parallel line of research showing that the effectiveness of the minimum wage policy to improve the welfare of the low-income families is limited due to the weak relationship between low-income families and minimum-wage workers. For example, Mercier and Poulin (2010) show that in Quebec only 14.4% of low-income families have a minimum wage earner. This literature is rich and deserves special attention; however, we do not review it in detail in this report and instead focus on the consequences of the policy to employment and prices.

First, businesses can reduce own profits, and hence business owners pay for the policy. Second, businesses can reduce the number of employees or cut their benefits, and hence the minimum wage workers pay for the policy. Finally, businesses can pass the increase in the wage bill onto their customers, and hence it is the customers who pay for the policy. Therefore, the central question is whether empirical research can find evidence of a reduction in business profits, a loss of jobs, and an increase in retail prices. MaCurdy suggested that the first outcome, the loss of profits, is the least likely one because businesses that hire minimum wage workers operate in highly competitive industries with tight profit margins. Hence, their only options to deal with the policy are either to limit their exposure to the minimum wage laws or to transfer the increases in the wage bill onto their customers. This leaves the remaining two outcomes: either the minimum wage workers pay by losing employment or consumers pay through higher prices.

The effects on employment and prices as a result of raising the minimum wage have been studied intensively in the economic literature. Brown, Gilroy, and Kohen (1982) surveyed the research of the 1970s and 1980s and concluded that a 10% increase in the minimum wage is estimated to result in a 1-3% loss of employment among low-skilled youth under the age of 25. Another literature review, by Neumark (2014), confirmed these findings with newer research that analyzed the data from the 1990s and that reported a loss of 1.2-2.7% of employment among youth per a 10% increase in the minimum wage.

Neumark and Wascher (2007) also described the second wave of research, which exploited variations in minimum wages across states within the US and which was believed to provide more reliable estimates. The results of these studies provided a wider range of estimates than the earlier studies.

Neumark (2014) extends his review to research done in other countries, such as Canada and the UK. The author reports that nearly two-thirds of the reviewed studies find negative effects of the increase in the minimum wage on employment. Only eight of the reviewed studies showed a positive effect on employment. One famous example is a study by Card and Krueger (1994), which found a large positive effect on employment in the fast-food industry in New Jersey. However, a later reassessment of the data used in this study contradicted this finding and instead report a decline in employment consistent with the estimates reported earlier in the magnitude of 1-2.5% per a 10%-increase in the minimum wage.

In the recently published study, Aaronson et al. (2018) showed that disemployment effects in the fast-food industry appear small in the short-run because increases in the minimum wage are associated with exits of labour-intensive restaurants and entries of capital-intensive restaurants. Therefore, although the short-term effects are small, long-term effects of disemployment can be large.

Gunderson (2007) suggested that while earlier studies in Canada found disemployment effects that were similar to those in the US, more recent studies that used newer data and different methodologies found larger negative effects: 3-6% per a 10% increase in the minimum wage, and none found positive effects. He also proposed that increases in the minimum wage are

associated with lower labour force participation rates, meaning that not all employment reductions are reflected in unemployment rates.

Moreover, Campolieti et al. (2012) found that employment losses are concentrated among the poor. It is not surprising, therefore, that another study by Sen et al. (2011) found that a 10% increase in the minimum wage also results in a 4%-6% *increase* in the percentage of families living under Low Income Cut-Offs (LICO).

Brochu and Green (2012), using data from the Canadian Labor Force Survey for all Canadian provinces, have also found that among teenagers, hiring reductions far outweigh the drop in layoffs and explain the significant and adverse effect on employment in this age group. For older workers, the decline in layoffs is offset by the decrease in hiring so that the effect on employment is nil or not significant. For the Quebec economy, Fortin (2010) has shown that when the ratio of the minimum wage rate over the average wage rate is close to 50%, the employment effects on adolescents are relatively high. Face with recent increases in the minimum wages in many Canadian provinces, an analytical note by the Bank of Canada (Brouillette, Calista, Cheung, and Gervais, 2017) concluded that employment elasticities are statistically significant for the 15–19 and 20–24 age groups and would lead employment to fall by 60,000 by early 2019.

A recent NBER working paper by Lordan and Neumark (2017) focused on the effects of the minimum wage on employment in highly automatable jobs using the US data from 1980 to 2015. They suggested that the disemployment effects in these types of jobs may be masked by substitution of low-skilled labour with machines and high-skilled labour whose skills are complementary to the new technology. They found a decrease in employment of 1.7% per a 10% increase in the minimum wage in manufacturing, where the most affected workers are on average older individuals, women, and blacks.

We next review the research focused on the effect of minimum wage increases on prices. Lemos (2008), MaCurdy (2015), and Sherk (2017) surveyed the empirical literature. Lemos (2008) found that based on 30 studies that she considered, the average effect for the fast food industry is a 0.2-0.3% increase in prices per a 10% increase in the minimum wages. Based on the US data, Aaronson et al. (2008) estimated a 0.7% increase in prices per a 10% increase in the minimum wages. Their estimate is larger (1.5%) for restaurants that employ predominantly minimum wage employees. MaCurdy (2015) listed a range of estimates of the effect on food prices such as 0.3-0.4% per a 10%-25% increase in the minimum wage, 0.3% per a 50-cent increase, and 0.9% for restaurant prices per a 50-cent increase in the minimum wage.

A recent comprehensive analysis by MacDonald and Nilsson (2016) found with the US data that the impact of minimum wage hikes on output prices (more precisely, on the food away from home (FAFH) CPI) is substantially smaller than previously reported. Relatively to the previously reported elasticity of prices to minimum wage changes of 0.07, the authors proposed a value almost half of that, 0.036. They recognized that the market structure plays a role and that large minimum wage hikes have apparent positive effects on output prices. This last remark could

easily be extended to the effect on employment. To our knowledge, no study on the effects of increases in the minimum wage on prices or income redistribution has been done for the Quebec economy. However, the recent analytical note by the Bank of Canada (Brouillette, Calista, Cheung, and Gervais, 2017) using reduced-form estimates of direct minimum wage found that consumer price index (CPI) inflation could be boosted by about 0.1 percentage point on average in 2018.

Do we conclude that economists have a consensus regarding the minimum wage policy? That depends on whether we are interested in the economists' opinion on the policy's effectiveness overall, its consequences for the economy, whether the minimum wage should be indexed to the CPI, or whether the wage should be raised (either in general or to a specific value). The overall picture of the economists' position on the minimum wage policy appears to be mixed.

Whaples (2006) surveyed 210 members of the American Economic Association on their attitude to the policy. He reported that his respondents were divided on the issue: 47% thought that the minimum wage policy should be eliminated, whereas 38% thought that the minimum wage should be increased. Fowler (2015) surveys 166 economists affiliated with the Institute for the Study of Labor. He reports that nearly 75% of the US-based respondents opposed the increase in the minimum wage to $15 an hour. They reported expectations of negative effects of the policy, such as loss of employment, fewer employment opportunities, and difficulties for businesses to stay competitive. However, Fowler also found that the economists he surveyed did not oppose an increase in the minimum wage *per se*; rather, they were concerned with an increase to $15 an hour, while being more perceptive of an increase to $10-$10.50 an hour.

MaCurdy (2015) reported findings from a survey of the faculty from top research universities in the US. Only 40% of respondents agree that the minimum wage would adversely affect employment. The remaining 60% were split on the question: 38% disagreed with the notion of the adverse effects, and 22% were uncertain.

Finally, a poll of top economists on the IGM Economic Experts Panel of the University of Chicago Booth School of Business in September 2015 asked them whether a gradual introduction of the $15 an hour minimum wage by 2020 would lower employment of the minimum wage workers.[6] Again, the polled economists appeared to be split on the topic with 24% disagreeing with this statement, 21% agree with it, and 38% were uncertain.

A consensus among experts on a given topic does not guarantee a consensus among the general public. For example, while 97% of scientists agree on the causes of the global climate change, the public is split on the issue depending on their political views (Kahan, 2014). However, when experts disagree, it complicates matters for the general public even further. It is also natural to ask not only what outcomes the general public expects, but also what price they find acceptable to pay to have the minimum wage increased. For example, while economists find a 1-3% of the loss of employment a negligible cost to pay for a 10% increase in the minimum wage, does the general public share their view? Alternatively, is the public not

[6] http://www.igmchicago.org/surveys/15-minimum-wage (accessed on December 17, 2017).

sensitive to the cost of the policy at all making all cost communications futile? This question is among several that we assess in this study.

Beliefs, preferences, and choices

The importance of beliefs to understand preferences and choices have been studied in the literature and, in particular, in research on income redistribution. For example, Fong (2012) studying the role of beliefs about self- and exogenous-determination on reported redistributive policy preferences, found, among numerous results, that someone who believes that bad luck causes poverty reported the highest level of support for redistribution.

Along those results, Neustadt (2010) also supported the finding that surveys participants who believe that luck or connections play a crucial role in determining economic success exhibit significantly higher WTP values for income redistribution than those who consider the effort to be a decisive factor. The author also estimated that marginal WTP increases with a higher degree of religiosity. Cruces et al. (2013) show that people's preferences for redistribution are related to their beliefs about their relative place in the income distribution. Page and Goldstein (2016) contributed to the empirical literature on the factors influencing voters' preferences for redistribution by showing a correlation between political support for income redistribution with beliefs in the level of income of the poorest households.

Numerous studies in psychology, political science, and economics have shown that people frequently hold erroneous beliefs about various aspects of the economy and have a poor understanding of economic mechanisms.

Blinder and Krueger (2004) confirmed misperceptions of a wide range of economic facts and concepts. Norton and Ariely (2011) showed that people misperceive the distribution of income in their country and underestimate the degree of income inequality. Cruces et al. (2013) observed that people have mistaken beliefs about their place in the income distribution. Page and Goldstein (2016) referred to many studies suggesting that people often misperceive the distribution of income and wealth in their country. Jensen (2010) observed that people misapprehend the returns to education. Olken (2009) discussed erroneous beliefs about corruption.[7]

[7] Ipsos MORI annually report results from their multi-country study on misperceptions "Perils of Perception." According to the reports, people in many countries have mistaken beliefs on a variety of topics. For example, people consistently overestimate the percentage of immigrants in their country, especially of Muslim immigrants, the number of children under 14 and adults over 65, the proportion of the overweight, pregnancy rates among teenage girls, the share of income held by the richest 1%, and unemployment levels. At the same time, people mostly underestimate the proportion of individuals who vote, the percentage of the obese, and the percentage of women in politics. https://www.ipsos-mori.com/_assets/sri/perils/slides/

McFadden (1999) suggests that anomalies in judgment occur because of errors in perception (including beliefs) because of how information is processed and stored, and how these ideas are formulated cognitively. Erroneous beliefs may have definite consequences on the social acceptability of public policies. For example, Romer (2003) showed that if voters' errors in assessing the likely outcomes of policies are correlated, the democratic political process can result in welfare-reducing outcomes. This occurs even when voters' objectives do not conflict. Voters' errors do not necessarily indicate irrationality but are likely due to their misunderstanding of the workings of the economy and their biased beliefs or misperceptions. He further suggests that biased beliefs, in turn, may arise due to different analytical abilities to collect and process information, or different points of view and world experiences. Moreover, individual voters lack the incentives to collect and analyze information about the proposed policies because their chances of affecting the outcomes are small (i.e., they are *rationally ignorant*).

Caplan (2007) suggested that as long as voters' errors in judgment are not systematic, a democratic system does not fail to function, even if as high as 99% of voters are ignorant, due to the *Miracle of Aggregation*. Hence, an important question to ask is whether voter errors are systematic when it comes to questions of direct political relevance. Caplan then summarizes the literature that reports consistent "anti-market" bias, "anti-foreign" bias, "make-work" bias, and a "pessimistic" bias. Since individual votes have externalities because they affect the entire society rather than the voter alone, these biases are costly to all unlike individual consumer choices based on mistakes.

Understanding economic mechanisms (to which we will further refer as *economic literacy*) has been shown to be pivotal in the successful implementation of policies and governance. Jappelli (2010) cites Bernanke affirming that:

> *"The Federal Reserve's mission of conducting monetary policy and maintaining a stable financial system depends upon the participation and support of an educated public. As the Fed pursues the monetary policy objectives that have been set out by Congress (price stability, maximum employment, and moderate long-term interest rates), it is essential that the public understand our objectives and our actions. Educating the public about the reasoning behind our decisions helps to build confidence in our economic system – another critical factor in keeping our economy running smoothly."*

Burke and Manz (2014) demonstrated the importance of economic literacy at the individual level by experimentally showing that economic literacy allows people to make better economic forecasts, in part due to a better choice of information and in part due to a better use of information. They found that more literate subjects chose more relevant information and used the given information more efficiently.

However, the level of economic and financial literacy has been found to be very low. Jappelli (2010) studied economic literacy of senior business leaders in 55 countries during 1995-2008 using the IMD World Competitiveness Yearbook. Christelis et al. (2010) analyzed indicators of

cognitive abilities including questions on economic literacy among people aged 50 and over in 11 countries. Lusardi (2008) studied the knowledge and understanding of various financial concepts and instruments in the US population. Her works consistently report a low level of knowledge accompanied by a high degree of self-confidence among studied subjects. The level of knowledge increases with income and education. In cross-country comparisons, the level of knowledge is lower in countries with more generous social security systems. Authors independently concluded that having more resources available for private management leads to stronger incentives to acquire necessary economic and financial knowledge, both at the individual and the aggregate levels.

Confronting beliefs with information

Given that studies consistently report mistaken beliefs about the economy and misunderstanding of economic mechanisms, a question arises whether it is possible to correct these beliefs by providing correct information. According to some studies, educating people can *sometimes* be effective: people update their beliefs and change their decisions once their misperceptions have been corrected. For example, Cruces et al. (2013) demonstrated that their survey respondents who overestimated their relative position in the income distribution were more likely to favour income redistribution once they were informed about their mistaken belief.

In another study, providing correct information about the number of immigrants has reduced the perception of too many immigrants among the American population.[8]

Other studies offered mixed reactions to information treatment. Jensen (2010) reported that even though study subjects, in general, changed their beliefs about returns to education and this resulted in lower high-school dropout rates among the least-poor students, no such effect was found for the poorest students. That it, the information treatment did not change students' choices. Chetty and Saez (2013) reported heterogeneous treatment effects on earnings in response to providing information about tax incentives for the EITC program. It is possible that participants did not believe the provided information.

Studies in political sciences on the persistence of beliefs also showed that information correction does not always work as intended. Nyhan et al. (2014) revealed that after having been provided with information about vaccination, some parents *increased* their misperceptions about costs and benefits of vaccination, and *reduced* their vaccination intentions. In another study, Nyhan et al. (2013) reported that attempts to correct a false belief that the Affordable Care Act would create "death panels" resulted in *stronger* false beliefs and *increased* opposition to the reform. This result occurred predominantly among individuals who were more politically knowledgeable and who strongly supported politicians claiming the existence of death panels. The authors suggested that information provided may be inefficient to overcome "motivated reasoning" among more sophisticated members of the public. These

[8] Transatlantic Trends: Mobility, Migration and Integration, 2014. http://trends.gmfus.org/files/2014/09/Trends_Immigration_2014_web.pdf.

individuals may be using motivated reasoning biased towards their pre-existing attitudes and beliefs, leading them to uncritically accept claims that support their attitudes and refute information that counters their attitudes. This outcome has been found to be especially pronounced among people who were more knowledgeable and sophisticated.

Kahan (2015) considered that such a negative reaction to information occurs because information attempts to challenge beliefs related to someone's identity. That is, challenging information creates a strong rejection by those whose identity is negatively affected by the message, which destroys (if not reverses) the effectiveness of the message. He suggested that the information treatment should be detached from identity, although he did not give any suggestion on how to do so. Similarly to Nyhan's work described above, Kahan also suggested that more sophisticated and knowledgeable respondents are less likely to update their beliefs and more likely to strongly support the wrong belief on controversial issues if those are related to their identity.[9]

We relied on this literature to design our information treatment. We had to be particularly careful about the framing of the messages because they were meant to elicit respondents' willingness to pay various costs of the minimum wage policy. If these messages appeared as challenging respondents' beliefs, or if respondents did not believe the information we provided (which was hypothetical and not necessarily reflecting realistically possible outcomes), we would have elicited something other than their real willingness to pay and would have had difficulty interpreting our results. The next section presents our experimental design and the information treatment.

Experimental Design

The design of our study consists of an online survey-experiment that collects respondents' opinions about raising the minimum wage before and after the information treatment. The survey also collects respondents' beliefs about the state of the economy and economic mechanisms and their social preferences. At the end of the survey, we test respondents' numeracy skills and cognitive reasoning abilities and collect demographic data. The survey borrows from the questionnaire used by Engle-Warnick, Héroux, Montmarquette, and Viennont-Briot (2010) who studied the knowledge of QC economy. In their survey, the minimum wage policy was one of the several studied issues. What follows describes our instruments and information provided to respondents in more detail.

Beliefs

Several sets of questions were designed to elicit respondents' beliefs about the Quebec economy and perceived consequences of raising the minimum wage.

Questions about the economy of Quebec include questions about:

[9] However, Kahan did not distinguish between held and reported beliefs. It is possible that held beliefs coincide with people's knowledge, and only reported beliefs contradict them.

- the current rate of the minimum wage,
- the proportion of workers who earn the minimum wage,
- the size of the minimum wage relative to the average wage in the economy,
- the current rate of unemployment,
- the poverty threshold for a family of four.

The second set of questions elicits beliefs about the consequences of raising the minimum wage on:

- the employment of current minimum wage earners,
- the employment opportunities for currently-unemployed workers,
- the prices for goods and services,
- the wages for workers currently paid more than the minimum wage,
- the respondents and their families.

Next, we elicited beliefs about economic mechanisms (economic literacy). We based our questions on the Test of Economic Literacy (TEL) by Walstad, Rebeck, Butters (2013), which is an American standardized test for measuring the knowledge of high school students about economic concepts. Rather than measuring the overall level of economic literacy, we focused on several questions that are relevant to the topic we study. This also allowed us to limit the overall length of the survey to ensure higher response rates. Since our goal was to measure respondents' understanding of the market economy, determinants of wages and prices, and the role of the government, we selected three questions from the TEL:

- about consequences of simultaneous proportional increases in nominal income and prices,
- about determinants of high wages,
- about consequences of price floors to supply and demand.

We also asked respondents about their beliefs whether the minimum wage would be higher or lower than the market wage, after having provided them with a definition of a market wage:

> A *market wage is the highest wage that employers are willing to pay and the lowest wage that workers are willing to accept in a market without a government intervention.*

Numeracy and cognitive reasoning

Next, we assessed respondents' cognitive abilities using two measures. First, we used the Cognitive Reflection Test (CRT) by Frederick (2005), which can be thought of as a test of ability to think "slow" rather than "fast" in the terminology of Kahneman's book "Thinking, fast and slow" (2011). The CRT consists of three questions with answers to each question that are intuitive (fast) but incorrect, answers that are given after some reflection (slow) and correct, and answers that are other than fast or slow and always incorrect. The score for the test ranges from 0 to 3 reflecting the number of correct answers.

Second, we used questions from a numeracy test by Jappelli et al. (2010). We were interested in respondents' numeracy skills to gauge their ability to understand and appreciate quantitative information normally used to communicate economic information, such as percentage and fractions. As reported by Peters et al. (2006), highly numerate individuals are more likely to retrieve and use appropriate numerical principles, are less susceptible to framing effects, and tend to draw stronger or more precise affective meaning from numbers and numerical comparisons. Due to time constraints, we did not administer a comprehensive numeracy test and, instead, focused on four questions presented in Jappelli et al. (2010) about understanding fractions and percentages, which are frequently used in communicating the information about the minimum wage. The score for the test ranged from 0 to 4 reflecting the number of correct answers.

Questions about a) Quebec economy, b) economic literacy, c) cognitive reasoning, and d) numeracy all had correct answers. We incentivized responses to these questions by paying a respondent a bonus of 1 point for every correct answer. We limited the time to respond to the questions about the Quebec economy and the economic literacy (between 45 seconds and 1.5 minutes) to prevent respondents from searching answers on the internet. We also added an option "I don't know" to avoid random responses.

Using the number of correct answers, we constructed the scores for the knowledge of the Quebec economy, the economic literacy, cognitive reasoning, and numeracy. By summing over the total scores for all four groups of questions, we then calculated the total score for each respondent.

Preferences

Because the minimum wage policy is a form of redistribution (Freeman, 1996), the next group of questions elicited respondents' social preferences. Since the majority of our respondents were not likely to be directly affected by an increase in the minimum wage (i.e., they earned more than the minimum wage), we would need to elicit their social preferences specifically towards people that might be directly affected (e.g., minimum wage earners, the unemployed, and low-income individuals). We used several measures. The first measure included choices in a modified dictator game. The second measure consisted of responses to three statements about income redistribution, attitudes towards the unemployed and perceived determinants of success in life (e.g., effort vs. luck).

A classical dictator game typically involves two agents: a dictator and a recipient (Forsythe et al., 1994). A dictator is asked to allocate a fixed amount of money between herself and the recipient. That is, the amount of money transferred to the recipient reduces the amount available to the dictator by a dollar per every dollar transferred (i.e., the price of generosity is 1). In a modified dictator game by Andreoni and Miller (2002), the amount of money transferred to the recipient reduces the amount available to the dictator by either less or more than a dollar per dollar transferred (i.e., the price of generosity is either less or more than 1). A

dictator's choices in response to a change in the price of generosity allow determining the dictator's social preferences.

In our experiment, all respondents acted as dictators who could allocate some money to the same recipient, which was *Centraide*, a well-known network of non-profit organizations in Quebec that raise and invest funds in improving the lives of the disadvantaged population. Having a charity as a recipient allowed us to focus on social preferences towards those who are worse off. If we had used a randomly chosen respondent as a recipient, he or she would most likely be too similar to the "dictators" regarding their income and employment status and not reflect social preferences that we were interested in.

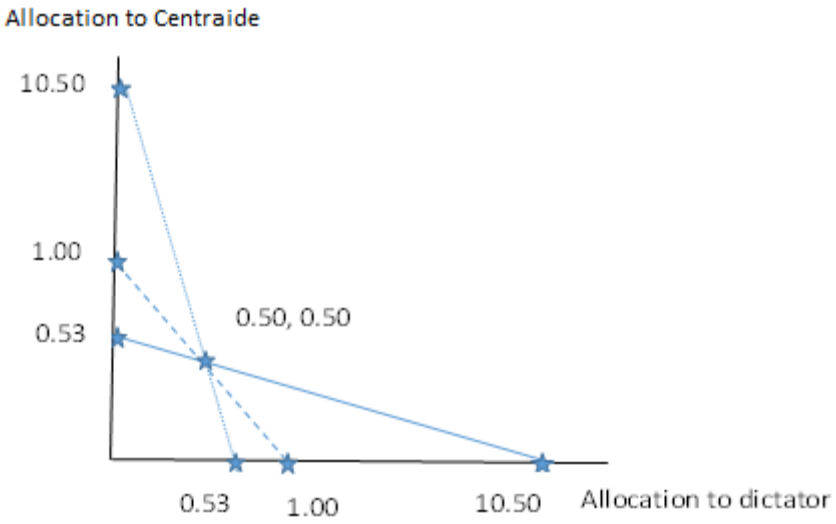
Dictators were given 100 tokens, which they could either keep or donate (some or all) to Centraide. They were presented with three scenarios that varied at which rates tokens would be converted into cash, thus varying the price of generosity. In each scenario, dictators were asked to choose one of three possible allocations: keeping everything, splitting tokens equally, and giving everything. The first scenario offered choices where it was very expensive to be generous (i.e., the dictator had to give up $10.50 to give $0.53 to Centraide). The second scenario offered choices where it was less expensive to be generous (i.e., for every dollar given away, a dictator lost a dollar). Finally, the third scenario offered choices where it was cheap to be generous (i.e., a dictator had to give up only $0.53 to donate $10.50).

Erreur ! Source du renvoi introuvable. illustrates the dictator allocations under each of the t hree scenarios. Choices in each scenario can be thought of as belonging to the same budget line. The solid line contains choices for scenario 1, the dashed line contains choices for scenario 2, and the dotted line contains choices for scenario 3. Notice that all three budgets cross at a point where 100 tokens are split equally in each scenario. This simple setup allows us to identify the type of respondents' social preferences using their choices. Respondents who kept everything in all three scenarios are "selfish," while respondents who gave away everything in all three scenarios are "altruists." Respondents who chose 50/50 splits in each scenario are "egalitarian." Finally, respondents who kept more in scenarios where it was cheaper to keep and gave more in scenarios where it was cheaper to give are "utilitarian" (Andreoni and Miller, 2002).[10]

This arrangement of the dictator game also permits to identify respondents whose choices violate axioms of the theory of revealed preference and whose preferences cannot be identified. Out of 27 possible combinations of choices, 10 describe rational choices produced by different types of preferences, and the remaining 17 reveal violations.

Figure 3: Allocations in the three scenarios of the dictator game

[10] Notice that given the precise allocations, from which respondents were asked to choose, we get exact types of preferences without having to estimate a utility function based on choices.


Allocation to Centraide
10.50
1.00
0.53
0.50, 0.50
0.53
1.00
10.50
Allocation to dictator

Information treatment

1. Group 1: facts about the minimum wage

Incorrect beliefs about the amount of the minimum wage, its size relative to the average wage, and the proportion of workers who earn the minimum wage can affect public demand for a higher minimum wage policy. For example, Blinder and Krueger (2004) found that respondents who correctly identified the amount of the minimum wage were less likely to support its increase.

In the first group, we provide only the factual information about the magnitude of the minimum wage (in absolute terms and relative to the average hourly wage) and the proportion of workers who earn it. Then we ask again whether respondents support a minimum wage at $15 an hour.

> *The current minimum wage for workers not receiving tips in Quebec is $10.75 an hour, which is about 45% of the average hourly wage in Quebec. About 6% of all workers in Quebec are currently paid this minimum wage.*
>
> *Do you think the minimum wage should be equal to $15 an hour?*

2. Groups 2-4: facts about the minimum wage and consequences to employment

Hypothetical job losses among minimum wage earner constitute public costs of a higher minimum wage policy. In the next three groups, we add information about hypothetical consequences to employment to the factual information provided in group 1. Hypothetical consequences were presented as the number of minimum wage workers who would get a raise and the number of workers who would lose their jobs out of every 100 workers. Based on the estimated disemployment effects reported in the literature, a 10% increase in prices would result in 1-3% job loss. Therefore, a 40%-increase in the minimum wage of $10.75 (at the time of the survey) to $15 an hour would result in a 4-12% job loss. Hence, our scenario for group 2 asks about a 10% loss of jobs:

> *The current minimum wage for workers not receiving tips in Quebec is $10.75/hour, which is about 45% of the average hourly wage in Quebec. About 6% of all workers in Quebec are currently paid this minimum wage.*
>
> *Do you think the minimum wage should be equal to $15/hour if, as a result, 90 out of every 100 workers who earn the minimum wage will get a raise, while the remaining 10 out of every 100 workers will lose their jobs?*

To evaluate how demand for the increase in the minimum wage varies with job losses, we varied the number of people who gain (loose) from 90 (10) in group 2 to 70 (30) in group 3 to 50 (50) in group 4.

3. Groups 5-7: facts about the minimum wage and consequences to prices

Higher prices resulting from an increase in the minimum wage constitute private costs of a higher minimum wage policy. In the remaining three groups we add information about hypothetical increases in prices to the factual information provided to group 1. Given the estimated price effects reported in the literature, a 10% increase in the minimum wage would result in 0.3-1.5% increase in prices. Therefore, a 40%-increase in the minimum wage would result in a 1.2-6% price increase.

> *The current minimum wage for workers not receiving tips in Quebec is $10.75/hour, which is about 45% of the average hourly wage in Quebec. About 6% of all workers in Quebec are currently paid this minimum wage.*
>
> *Do you think the minimum wage should be equal to $15/hour if, as a result, you will pay 5%-10% more for goods and services produced by minimum-wage earners, for example, fast food?*

Hypothetical price increases were 5-10% in group 5, 15-20% in group 6, and 25-30% in group 7.

Econometric Models

Two decisions are of interest for our study. The first decision is a choice "Yes" or "No" to support an increase in the minimum wage *before* the information treatment. The second decision is a choice "Yes" or "No" *after* the information treatment.

We use the first decision to determine factors that influence the demand for the higher minimum wage. To do so, we model a decision to respond "Yes" to the question about raising the minimum wage before the information treatment ($y = \{yes = 1, no = 0\}$) as a function of a person's preferences, beliefs, knowledge and reasoning, and demographic characteristics:

$$y = f(Preferences, Beliefs, Knowledge, X) + \varepsilon \qquad (1)$$

The vector of preferences includes the person's preferences over individual outcomes related to minimum wage and preferences over outcomes to others (e.g., social preferences):

$$Preferences = f(own\ outcome, social\ outcomes)$$

The vector of beliefs includes beliefs about the current state of the economy (e.g., the level of minimum wage) and beliefs about consequences of increasing the minimum wage, both to the person herself and to the economy in general:

$$Beliefs = f(current\ minimum\ wage, consequences\ of\ raising\ the\ minimum\ wage)$$

The vector of knowledge includes economic literacy (i.e., understanding economic concepts such as price floor or supply and demand) and reasoning abilities measured using the CRT and the numeracy test.

$$Knowledge = f(economic\ literacy, reasoning\ abilities)$$

Finally, demographic and personal characteristics include age, gender, education, income, sources of information, and political views:

$$X = f(age, gender, education, income, political\ views, information\ sources),$$

and ε_i is the random element.

We use the first and the second decision together to estimate treatment effect of the information treatment with the difference-in-differences approach:

$$y_{it} = \beta_0 + \beta_1 T_i + \beta_2 post_{it} + \beta_3 T_i \times post_{it} + \varepsilon_{it}, \qquad (2)$$

where $y_{it} = \{1,0\}$ is the response of person i to the question about raising the minimum wage before or after the information treatment ($t = \{1,2\}$), T is an indicator that person i is in the group of interest (i.e., T = 0 is the control group), and *post* is an indicator for decisions made after the information treatment (i.e., at $t = 2$). For example, for an individual who makes a decision in the treatment group T_i =1. For this person's decision made before the information treatment $post_{i1} = 0$ and for her decision made after the information treatment, $post_{i2} = 1$. Depending on the treatment effect estimated, the treatment and control groups vary. We provide more information about the treatment and control groups further in the text when we discuss our identification strategies.

We also use the first and the second decision to investigate dynamics of choices due to the information treatment on the individual level. That is, we study determinants of probabilities to change responses from "Yes" to "No" and from "No" to "Yes" when asked about the rise in the minimum wage before and after the information treatment. To do so, we estimate a model based on equation (1) on decisions before and after the information treatment. That is, we have a bivariate probit regression of two binary dependent variables with correlated error terms:

$$y_j = \begin{cases} 1, \text{if } y_j^* > 0 \\ 0, \text{otherwise} \end{cases} \qquad (3)$$

where

$$y_j^* = f(Preferences, Beliefs, Knowledge, X) + \varepsilon_j,\ j = prior, post$$

and

$$\begin{bmatrix} \varepsilon_{post} \\ \varepsilon_{prior} \end{bmatrix} | X \sim N\left(\begin{bmatrix} 0 \\ 0 \end{bmatrix}, \begin{bmatrix} 1 & \rho \\ \rho & 1 \end{bmatrix} \right)$$

We use both the pooled data and data stratified by group to study choice dynamics; we also study heterogeneity in choice dynamics.

Results

The online survey and the remuneration of participants

The survey was programmed using *LimeSurvey* and administered online to adult residents of Quebec recruited by a marketing agency. A total of 2,255 respondents completed the survey

(90% response rate) during two weeks of April 2017. On average, it took participants 20 minutes to respond to the entire questionnaire. Participants were paid a fixed fee for completing the survey and a bonus for their responses, which consisted of their choice in the randomly-selected scenario in the dictator game and the number of correct responses to scored questions. On average, subjects received $3.80 converted into points of their chosen loyalty program.[11]

The demographic characteristics of the participants are reported in Table 2 and Table 3. Compared to the general population in Quebec, women were slightly overrepresented in our survey (54% in our survey vs. 51% in the general population) as well as individuals over 35 years of age (77% in our survey vs. 73% in the general population).

About 90% of respondents were Canadian-born compared to the provincial average of 87%; 84% filled out the survey in French. Respondents whose highest level of education was a postsecondary certificate or diploma (including CEGEP) or a bachelor's degree were the two predominant groups accounting for 28% each. Out of 1,939 of respondents who reported their income (86%), about 34% had revenue in the 60,000-90,000 range, over-representing this income group relative to the 25% of the general population (in 2011). The proportion of respondents with income below 60,000 was representative of the general population (38% vs. 39%, respectively), which was also the case for respondents with income in the range of 90,000-150,000 (24% both in the survey and in the general population). The high-income group (over 150,000) was under-represented (9% in the survey vs. 12% in the general population).

Respondents were predominantly employed: full-time (49%), part-time (6%) or self-employed (7%), a total of 62% (similar to 61% employed of all working age individuals); another 27% were retirees. The unemployed were under-represented in the survey (less than 2% vs. less than 5% out of total population aged 18 and over). One out of six respondents reported owning or co-owning their business. Three percent of all respondents declared being paid the minimum wage, that is 5.5% of all respondents who were employees (this statistic for the general population is 6% of all employees). Overall, 12% of respondents reported having at least one minimum wage earner in the household.

Most respondents reported television, newspapers (online and printed), and radio as their primary sources of news (82%, 72%, and 53%, respectively).[12] Social circles including friends and family were the main sources of news for the respondents (35%). Online social networks (e.g., Facebook) were the main sources of news for 41% of respondents. Blogs and forums were named by another 13% of those surveyed, while less than five percent mentioned leaders of political parties. The median number of sources of information was three. Regarding membership in organizations, 17% of respondents were members of trade unions, 17% were members of professional organizations, and 10% were members of charities or volunteering

[11] Normally, participants earn a fixed fee of $1 converted into points for a survey of this duration.
[12] Respondents could report more than one source of news; therefore, the percentages add up to more than 100%.

organizations. More than a half of respondents (56%) reported not belonging to any organization or group.

Beliefs, knowledge, and reasoning

This section presents respondents' beliefs about the current state of the Quebec economy. We conclude this section by reporting beliefs about consequences of raising the minimum wage. We then report responses to the CRT and the numeracy test.

Beliefs about the Quebec economy

Figures 4-8 report responses for questions about the Quebec economy. For this group of questions, participants received a point for each correct answer for a total of up to 5 points. About 14.5% of participants answered no questions correctly, 33% answered one question, another 33% answered two questions, 15% answered three question, 4% answered four questions, and less than 0.5% of participants answered all five questions correctly.

Figure 4 shows that half of the respondents knew the correct amount of the minimum wage (50.51%). Another 41% indicated that the minimum wage was in the range $11.00-$12.99. A possible reason for this is that the minimum hourly wage was expected to increase to $11.25 on May 1, 2017, about a month after the survey. Therefore, most respondents had correct beliefs about the current size of the minimum hourly wage.[13]

[13] In comparison, in Engle-Warnick et al. (2010), 84% of respondents correctly identified the amount of the minimum wage rate, 10% underestimated, and 6% overestimated it.

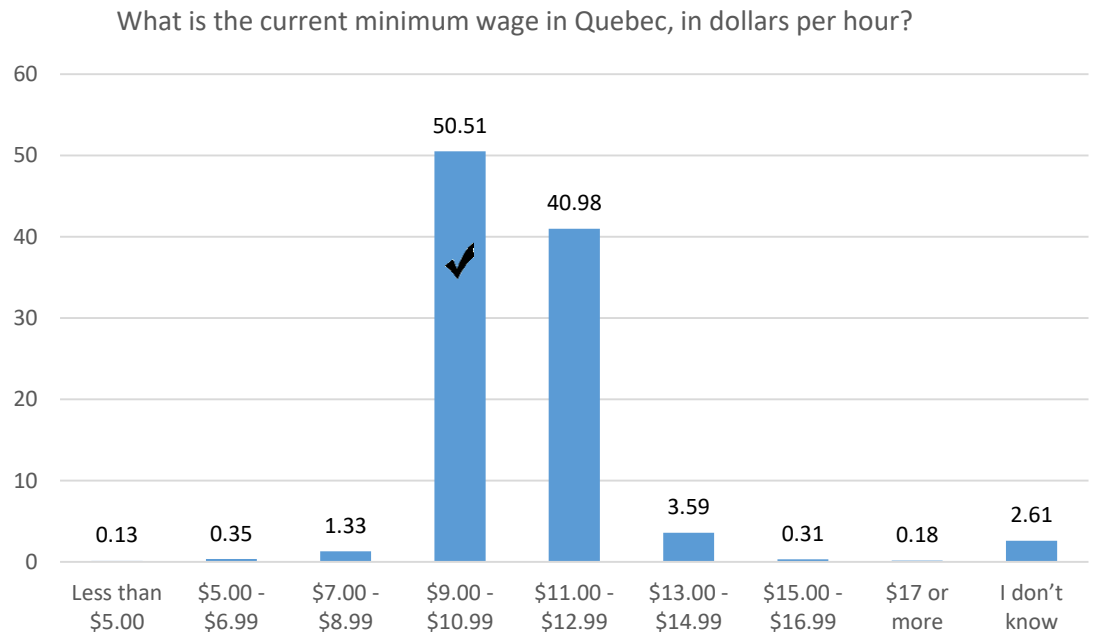


Figure 4: Beliefs about the current minimum wage rate

Figure 5 reports respondents' beliefs about the amount of the minimum wage relative to the average hourly wage in Quebec. About 40% of respondents correctly responded that the minimum hourly wage is about a half of the average hourly wage. About 23% responded that the minimum wage rate is a quarter of the average hourly wage, and 21% reported not knowing the answer.

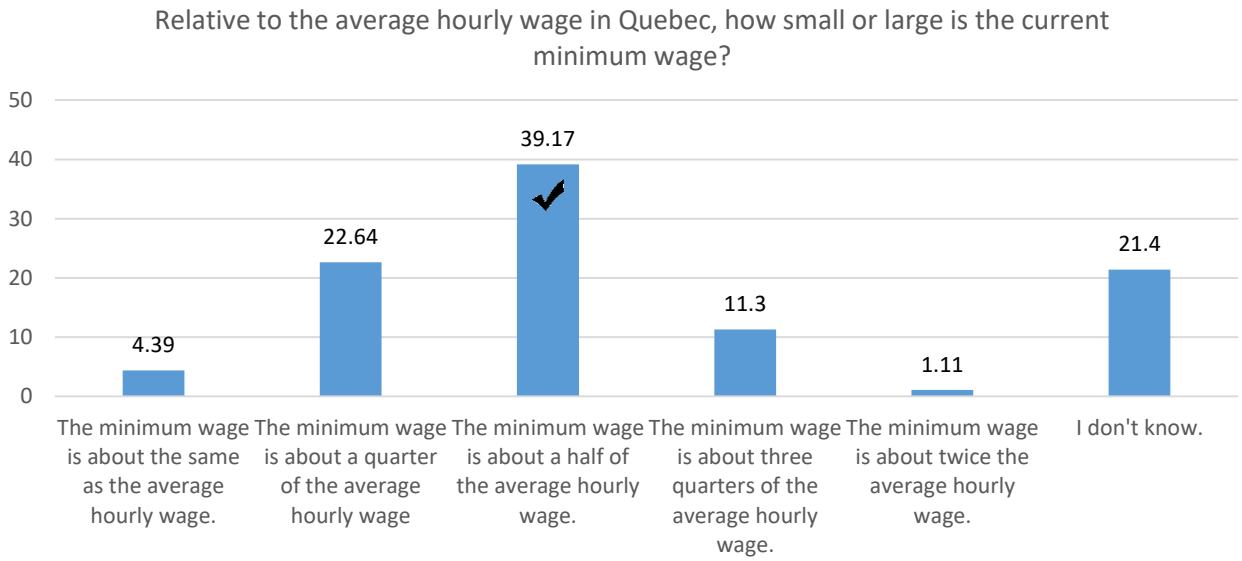


Figure 5: Beliefs about the minimum wage relative to the average wage

Figure 6 presents responses about the proportion of workers in Quebec paid at the minimum wage. Only 4.5% selected the correct answer that the proportion is in the range of 5%-9.99%

(the correct answer is 6% as of 2014). About 21% of respondents did not know the answer, and another 18% thought that the proportion is in the 15%-19.99% range. About 15% believed the proportion is 30% or more. Thus, the vast majority of respondents overestimated how many workers are affected by the minimum wage, and a significant proportion of individuals did not know how to answer this question.[14]

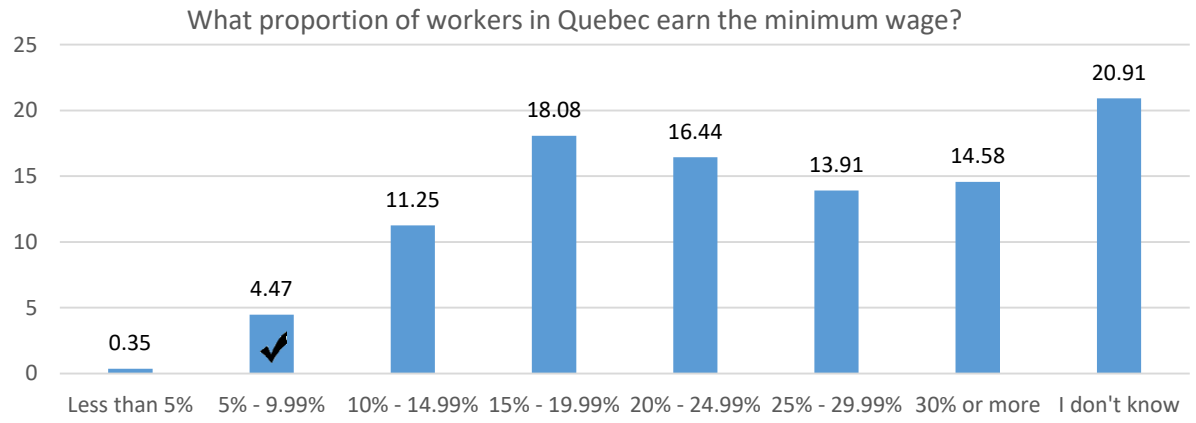


Figure 6: Beliefs about the proportion of workers who earn the minimum wage

Figure 9 reports answers about the current unemployment rate. The correct range of 5%-7.99% was the choice of 47.5% of respondents (the correct answer is 7.2% as of April 2017). Another 24% chose the 8%-10.99% range, and another 9% selected "I don't know." Overall, respondents who did not answer correctly tended to overestimate the current rate of unemployment.[15]

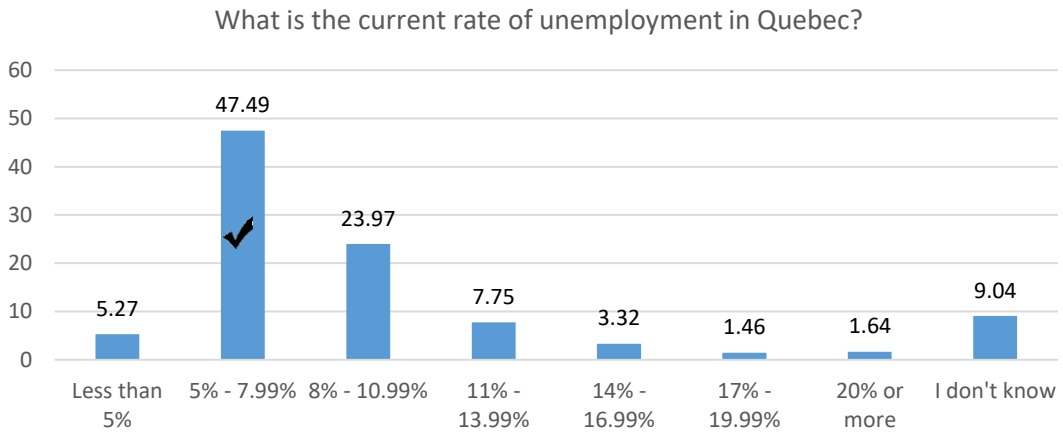


Figure 7: Beliefs about the current rate of unemployment

Figure 8 summarizes responses about the perceived amount of after-tax income that is a poverty threshold for a family of 4. The correct range ($30,000-$35,000) was selected by 21% of

[14] In Engle-Warnick et al. (2010), individuals predominantly overestimated the percentage of workers who earn the minimum wage, and only 0.3% gave a correct answer.

[15] In Engle-Warnick et al. (2010), only 28.5% correctly identified the unemployment rate, and the rest predominantly underestimated it.

respondents. Over 55% of respondents believed the poverty threshold to be less than $30,000. Another 5% did not know the correct answer.

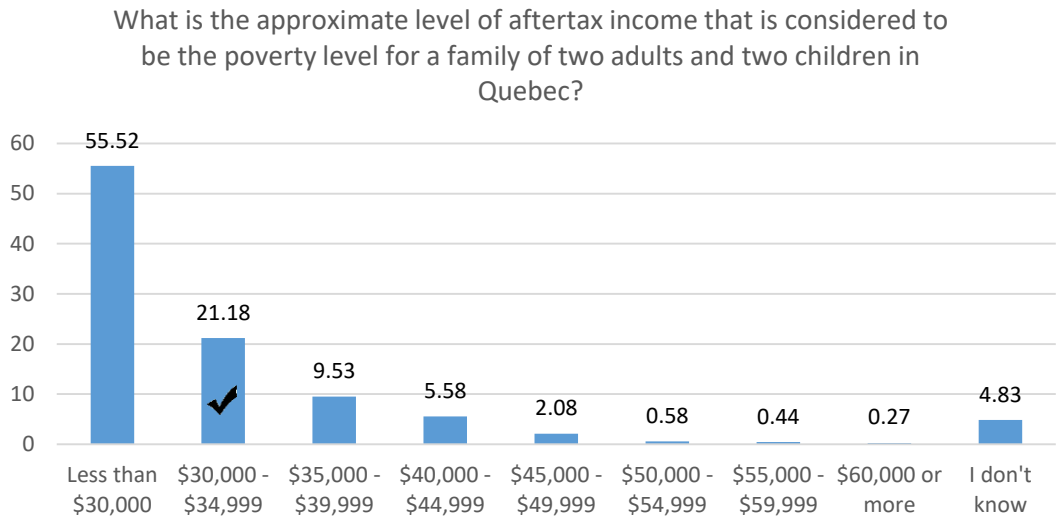


Figure 8: Beliefs about the after-tax-income poverty threshold

Beliefs about economic mechanisms

Figures 9-12 report responses about economic mechanisms. For this group of questions, participants also received a point for each correct answer up to 4 points. Only 2.5% answered all 4 questions correctly, and almost 16% answered no questions correctly. About a third of participants gave one correct answer, and another third gave two correct answers.

Figure 9 reports the distribution of responses about the consequences of setting price floors. Almost 52% of respondents identified the correct response (“a surplus of the product”). Another 31% responded that price floors result in a decrease in the supply of the product, and almost 11.5% did not know how to answer this question.

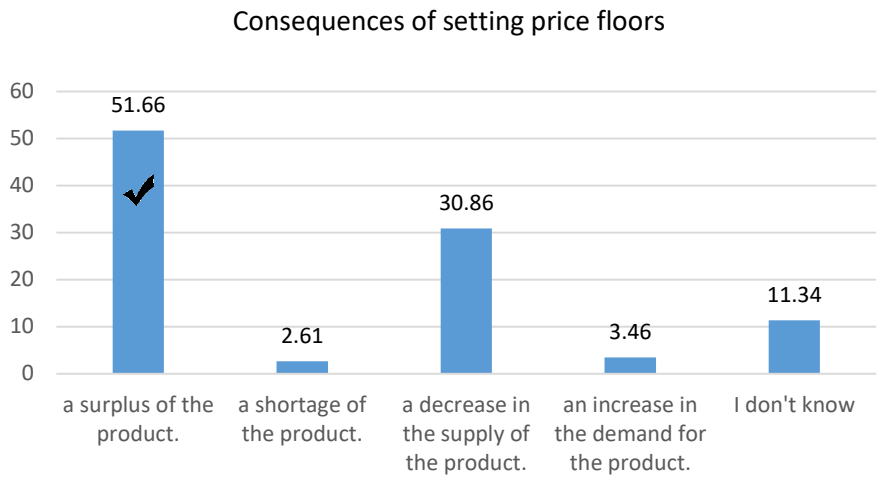


Figure 9: Beliefs about consequences of setting price floors

Figure 10 shows answers to a question about the determinants of high wages. Almost 40% of respondents believed that in a market economy, high wages depend mostly on responsible business leaders. The correct answer ("high output per worker") was selected by 34.5% of respondents. Another 10% of respondents selected "government actions," and "minimum wage laws" have been chosen by 7% of respondents. Finally, 9% did not know how to answer the question.

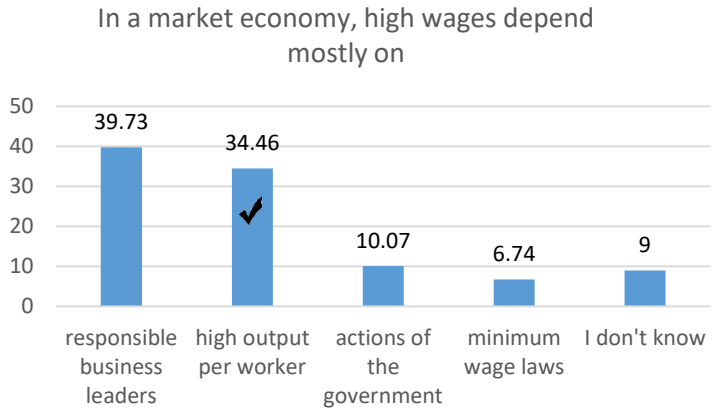


Figure 10: Beliefs about the determinants of high wages

Figure 11 presents responses to a question about the consequences of simultaneous similar percentage increases in nominal income and prices. Over a half of respondents (56%) correctly identified that the real income would not be affected. Another 30% believed that the real income would fall as a result. Finally, 8% expected the real income to increase, and 4% did not know the answer.

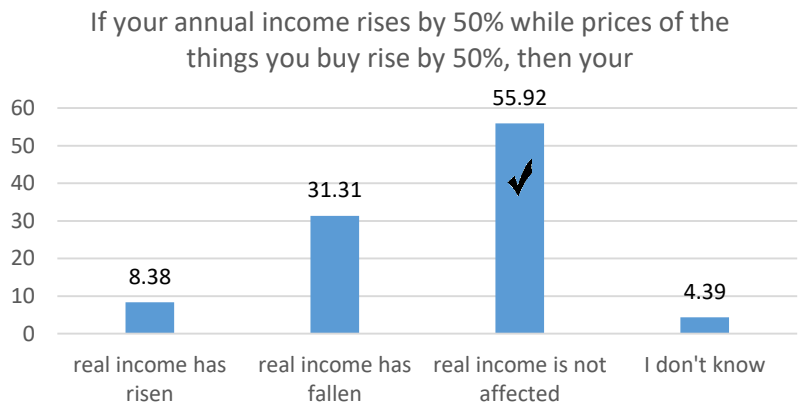


Figure 11: Beliefs about simultaneous and similar price and income percentages changes

Figure 12 reports responses about the relationship between the minimum wage and the market wage after respondents had been provided with a definition of the market wage. Only 12.5% gave the correct answer. The vast majority (almost 64%) believed that the minimum wage is lower than the market wage, and another 13% did not know the answer.

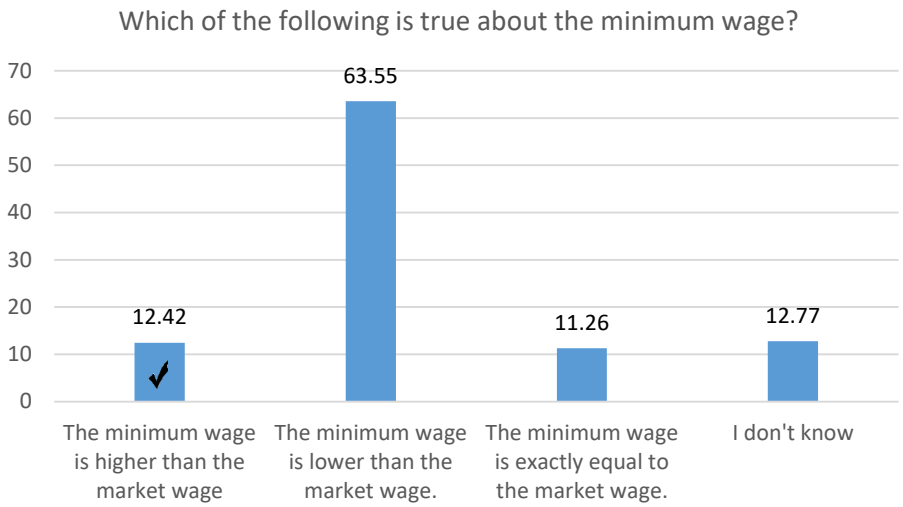


Figure 12: Beliefs about the minimum wage versus the market wage

Cognitive reflection and numeracy tests

The cognitive numeracy test (CRT) consisted of three questions. The first question asked about the price of the ball if it costs $1 less than the bat and together cost $1.10 in total. The correct answer to this question (5 cents) was given by 15% of respondents, 80% of respondents gave the fast incorrect answer (10 cents). The rest gave various incorrect answers. The second question asked about the time for 100 machines to make 100 widgets if it takes five machines five minutes to make five widgets. The correct answer (5 minutes) was given by 27% of respondents, and the fast incorrect answer (100 minutes) was given by 51% of respondents. The third question asked about the time it takes a patch of lily pads to cover half of the pond if

it doubles in size every day and it takes 48 days for it to cover the entire lake. The correct answer (47 days) was given by 28% and the fast incorrect answer (24 days) was given by 58% of respondents.

Overall, 57% of respondents gave no correct answers to the CRT, 23% gave one correct answer, 13% gave two correct answers, and only 7% gave three correct answers to the CRT. In what follows, we group respondents in "slow thinkers" (2-3 correct, or slow, responses), "fast thinkers" (2-3 incorrect and fast responses), and "other types" (2-3 incorrect but not fast responses). The proportions of respondents in each group were 20%, 67%, and 13%, respectively. Our rationale for separating "fast thinkers" and "other thinkers" is that incorrect responses were not always the "fast" ones. However, it is impossible to tell whether these responses were random, or whether subjects gave the questions some thought but did not calculate the responses correctly.

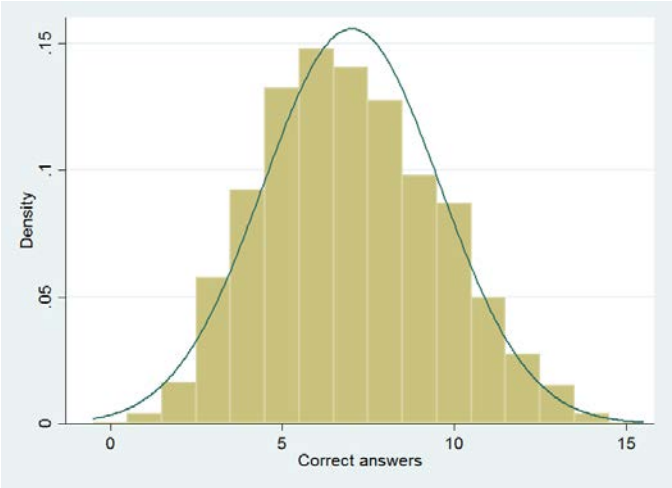
The numeracy test consisted of four questions. The first question asked about the number of people out of 1,000 that are expected to contract a disease if the probability is 10%; 94% of respondents answered it correctly. The second question asked about the price of a $300 sofa on sale at half-price; 98% answered this question correctly. The third question about the price of a new car, which costs $6,000 (or two-thirds) if sold used; 73% answered this question correctly. The fourth question asked about the amount of money in the savings account after two years if it starts at $2,000 and earns 10% annually; 49% answered this question correctly. Overall, 3% of respondents gave one or no correct answers, 19% gave two correct answers, 36% gave three correct answers, and 42% provided four correct answers.

Total score

Using responses to 16 questions (i.e., 5 questions about the Quebec economy, 4 questions on economic literacy, 3 questions on the CRT, and 4 questions on the numeracy test), we construct a total score by adding together the number of correct answers.

Figure 13 shows that the distribution of the total score is slightly more positively skewed than the normal distribution, with the mean score of 7.013, and the median score of 7 points. Nobody received the highest score of 16 and only 1 person received a score of 1 point.

Figure 13: Distribution of the total score



Beliefs about the consequences of raising the minimum wage

We now describe respondents' beliefs about the consequences of raising the minimum wage for their families and to the Quebec economy. The consequences for the Quebec economy included possible losses of employment among the minimum wage earners, employment opportunities for the currently-unemployed, prices of goods and services, and wages of workers paid regular wages. Questions about beliefs were not scored for correctness, and the respondents' time for these questions was not limited.

Figure 14 presents beliefs about perceived consequences of raising the minimum wage for the employment of minimum wage workers. Almost 41% of respondents believed that hardly any minimum wage workers would lose their jobs if the minimum wage goes up. On another extreme, 11% thought that a lot of minimum wage workers would lose their jobs. The remaining 48% felt that only some minimum wage workers would lose their jobs.[16]

[16] In comparison, Engle-Warnick et al. (2010) asked about consequences for employment as a result of an increase in the minimum wage by *50* cents. Only 4.8% believed that employment losses would be large, 28.3% expected some loss of employment, and 67% expected little to no loss of employment. Their results are similar to those in Blinder and Krueger (2004) who did not specify the amount of the increase in the minimum wage. In their study the proportions of respondents reporting these beliefs were 6%, 36%, and 57%, respectively.

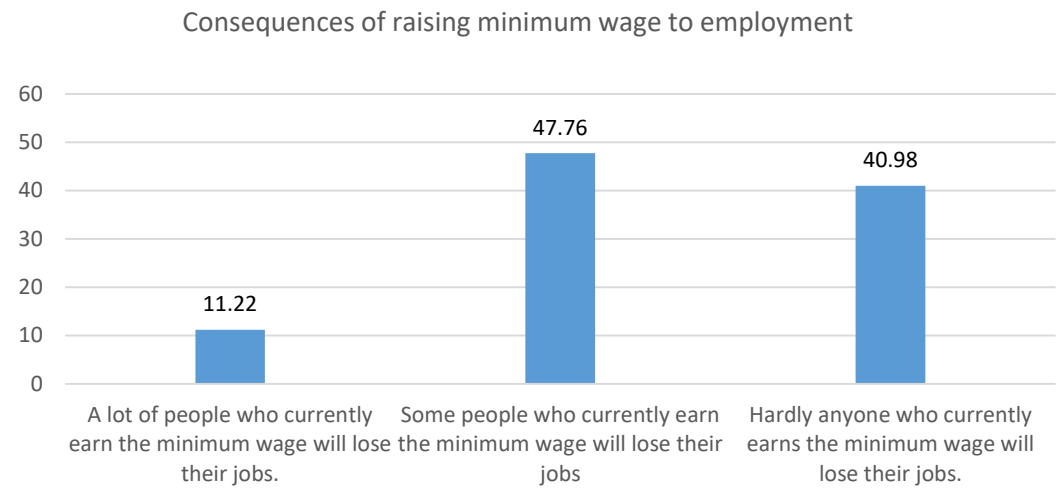


Figure 14: Beliefs about consequences of raising the minimum wage for loss of employment

Figure 15 reports beliefs about consequences for wages of people who earn more than the minimum wage. Nearly 71% believed that there would be no raise in wages of non-minimum wage workers. Another 27% thought that non-minimum wage workers would get a raise. The remaining 3% expected that wages to non-minimum wage workers would drop.

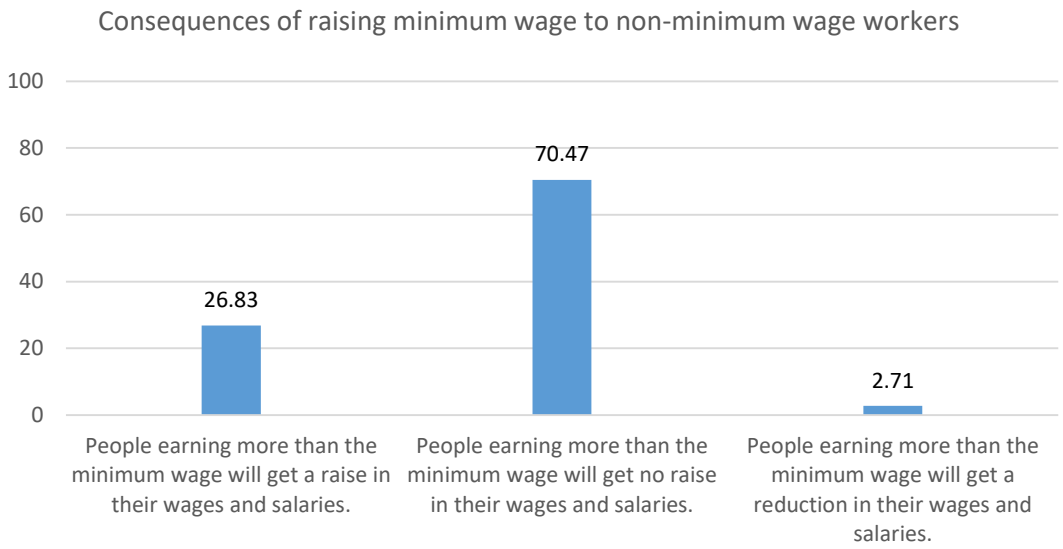


Figure 15: Beliefs about consequences of raising the minimum wage for non-minimum wage workers

Figure 16 presents beliefs about consequences of raising the minimum wage for prices. Respondents predominantly expected prices for goods and services to go up (72%). Slightly less than 27% anticipated that prices would remain the same. Only 1% of respondents expected prices to drop.

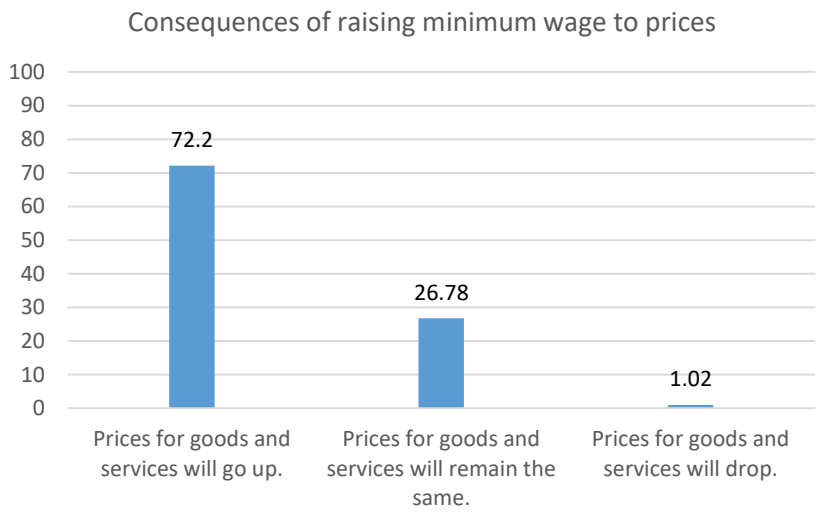


Figure 16: Beliefs about consequences on prices of raising the minimum wage

Figure 17 reports beliefs about consequences for the chances of the unemployed to find jobs. Almost 43% of respondents expected that the currently unemployed would not be affected by the increase in the minimum wage. The remaining 57% were equally split between believing that the currently unemployed will be more likely and less likely to find new jobs.

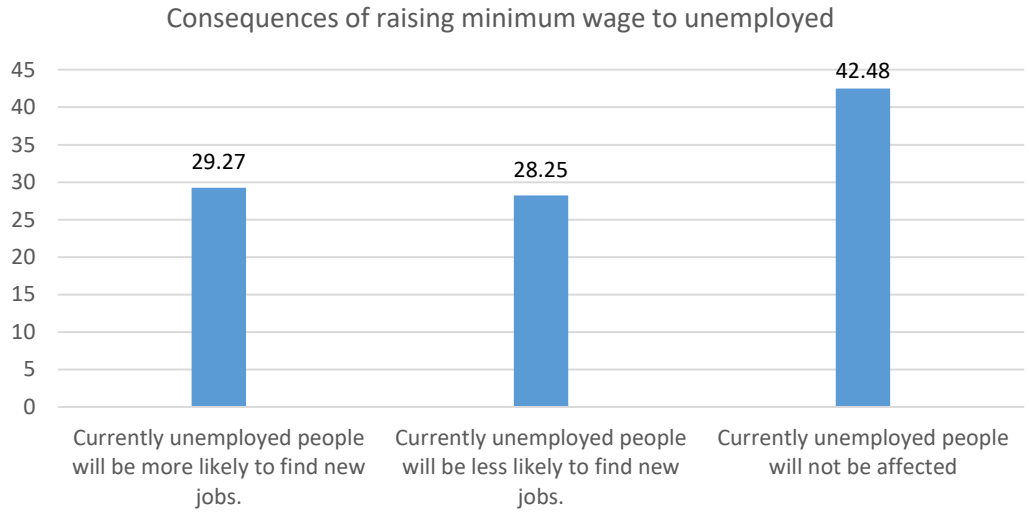


Figure 17: Beliefs about consequences of raising the minimum wage for the unemployed

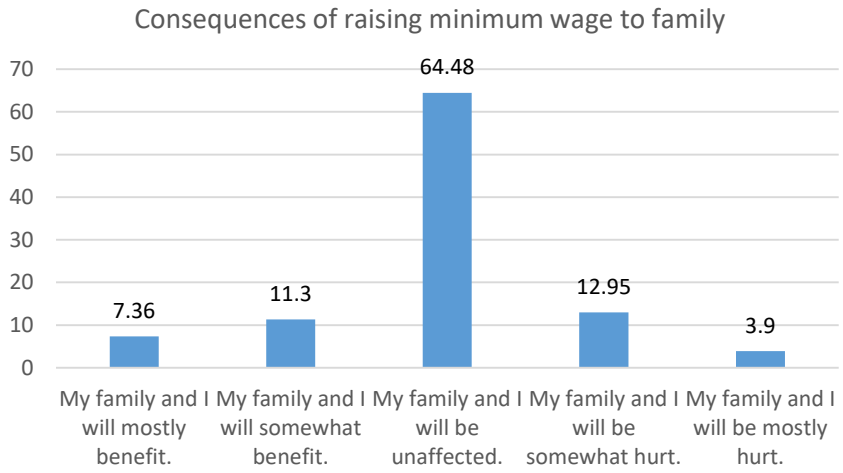


Figure 18 presents beliefs about the consequences of raising the minimum wage to respondents themselves and their families. The majority of respondents did not expect to be affected by higher minimum wages (64%). Almost 19% expected to benefit to some degree from the raise, and another 17% expected to be harmed by the rise. Interestingly, among those who indicated that they or their family would benefit to some extent, only 32% reported earning the minimum wage or having a minimum wage earner in the family. It is possible that respondents who were expecting to benefit earned just above the minimum wage and rationally anticipated a raise due to an adjustment of earnings within their employer's wage ladder (i.e., the spillover effect).

Those who expected their family to benefit to some extent had significantly different responses regarding their beliefs about the consequences of the increase in the minimum wage. For example, 42% of them believed that there would be more jobs for the unemployed as a result of the increase. In comparison, 26% of those expecting no benefit to the family believed in more jobs.

Those who expected to benefit were also more likely to believe in hardly any losses of jobs compared to those who did not expect to benefit (54% vs. 38%, respectively). Almost 42% of them believed that prices would not go up, compared to 25% of those who did not expect to benefit. Finally, 40% of them believed that other wages would go up, compared to 24% of those who did not expect to benefit from the increase. All of the reported differences are significant at less than 1%.

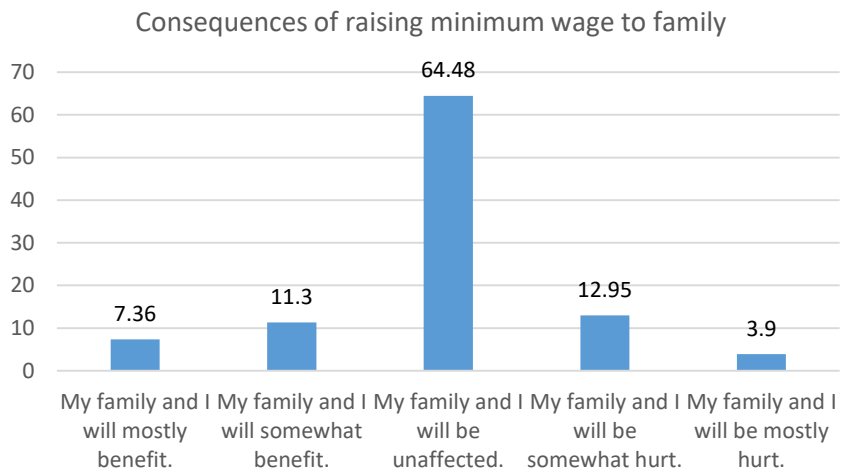


Figure 18: Beliefs about consequences of raising the minimum wage for the family

Beliefs and ideology

Based on our findings, survey respondents were divided in their beliefs regarding the consequences of raising the minimum wage. Although nobody can perfectly predict what exactly will happen once the minimum wage goes up, some outcomes are less likely than others. The first outcome to consider is employment losses due to an increase in the minimum wage. Economists debate about the magnitude of possible job losses but accept that *some* jobs will be lost as a result. More than 40% of our respondents reported that hardly anyone would lose his or her job.

The second outcome considered is the consequences for the unemployed. In the literature on consequences to employment that we reviewed earlier, there were studies reporting positive outcomes to employment, but these studies were contested for their methodology and findings. So, in general, economists do not expect job creation as a result of an increase in the minimum wage. Therefore, the most likely outcome is that currently, unemployed people will not be more likely to find new jobs if the minimum wage goes up. However, 30% of our respondents reported that the most likely outcome of a higher minimum wage is more opportunities to find jobs for the unemployed.

Are these responses related to low economic literacy or problems with reasoning? Kahan (2015) showed that while people with higher science test scores are more likely to give correct responses to neutral questions (e.g., the probability of a disease), this is not always the case for topics like evolution or climate change, which may be related to one's identity as measured with reported religious or political views. For example, in his paper, religious respondents with higher science test scores were *less* likely to give correct responses to the question about evolution. Would this be the case for beliefs about the minimum wage policy?

We analyzed responses to the questions about consequences separately for individuals who scored above and below the median total score grouped by a political party for which a respondent would vote if an election were held in Quebec.[17]

Erreur ! Source du renvoi introuvable. reports the proportion of respondents who reported b elieving that more jobs would be available for the unemployed as a result of a higher minimum wage (with 95% confidence intervals). The figure suggests that this belief is more prevalent among respondents with lower scores for two parties out of four. For people who would vote for Parties C and D, there were no statistically significant differences in their belief by score.

Figure 19: Beliefs in more jobs for the unemployed, by total score and political party

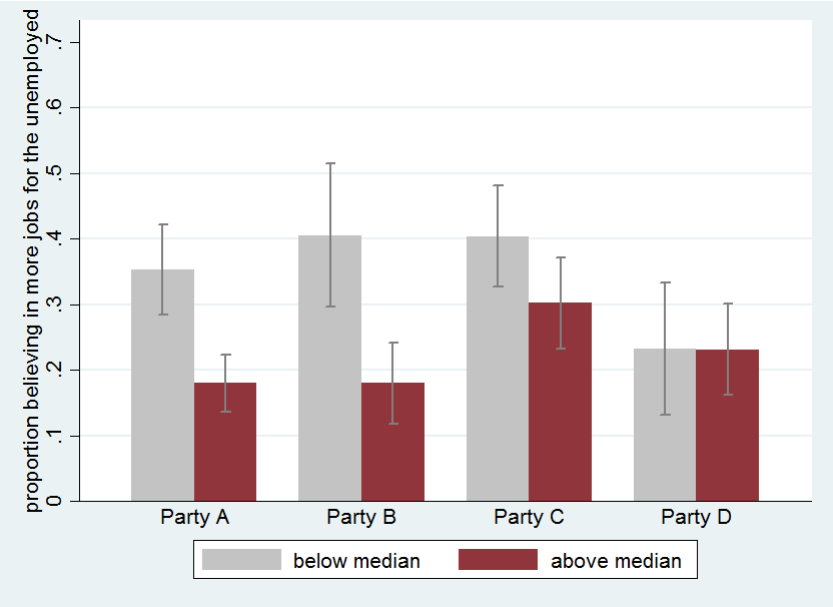
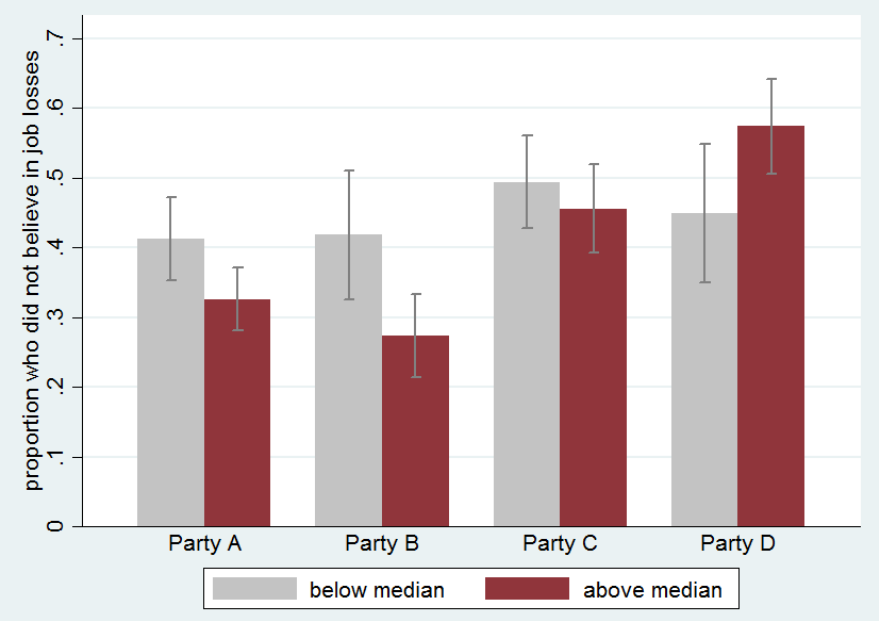


Figure 20 reports beliefs in hardly any job losses for minimum wage earners by the political party and total score (with 95% confidence intervals). Again, believing in hardly any job losses was more prevalent among respondents with lower scores, but only for 3 parties out of 4. For two out of these three parties (A and B), the probability of holding this belief was higher for lower-scoring individuals with p-values of a one-tailed t-test of 0.027 and 0.013, respectively. For party C, the differences were not significant (p-value = 0.247). For the fourth party, respondents who scored above the median were significantly more likely to believe in no job losses (p-value = 0.045).

Figure 20: Beliefs in hardly any loss of jobs for minimum wage earners, by total score and political party

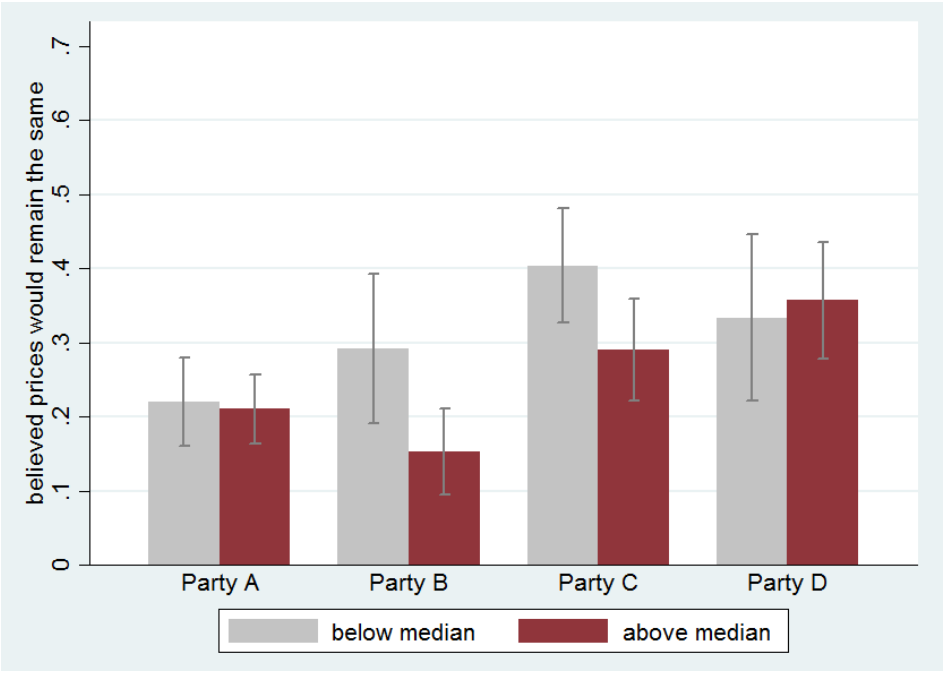
[17] For this analysis we focused on the four parties that were selected by respondents most frequently. The parties are labeled randomly, i.e., labels do not indicate whether the party was the most frequently selected party or the least frequently selected one.



We also asked respondents about the most likely consequences of higher minimum wage on prices. This question has only one wrong answer ("Prices would go down"), which was chosen by a tiny proportion of respondents (1%), whereas the other two answers ("Prices would go up" and "Prices would remain the same") were reported equally frequently and both are likely depending on the interpretation of the question because of its framing. That is, we were not specific whether we asked about prices in general or prices for fast food or other products and services that would be more apt to be affected by the increase in the minimum wage. For this reason, expecting no changes in prices, in general, was reasonable. It is also possible that respondents thought about prices for fast food and other goods and services produced by the minimum wage earners. The literature we reviewed earlier suggested that prices of fast food increase when the minimum wage goes up (Lemos, 2008; Sherk, 2017; Aaronson et al., 2008). Therefore, it would be reasonable for our respondents to expect fast-food prices to go up.

Erreur ! Source du renvoi introuvable. reports the proportion of respondents with beliefs that p rices will remain the same (with 95% confidence intervals). We can see that beliefs about prices differ depending on the party affiliation and the total score. Respondents with lower scores were more likely to report that prices would remain the same but only for two parties out of four (B and C, with p-values 0.007 and 0.015, respectively). For parties A and D, the proportions reporting that price will continue to be the same were nearly identical between respondents who scored below and above the median score.

Figure 21: Beliefs that price will be the same, by total score and political party



We performed similar analyses for responses related to other beliefs (e.g., about factual information or economic literacy) but found that responses about these beliefs varied only with the total score and not by political party.[18] We interpret these findings as an indication that beliefs about consequences are related to political views.

Preferences

There were several measures of social preferences in our study. For the first measure, we followed the experimental literature on social preferences and used a dictator game to measure these preferences (e.g., Andreoni and Miller, 2002). Other measures consisted of values expressed about income redistribution, attitudes to the unemployed, and opinions about drivers of success.

Social preferences

On average, respondents chose to keep $6.38 or 53% of the total income in all three scenarios. The median allocation to dictator was $10.50 or 87% of the total income, which is comparable to other studies of dictator games. In the first scenario, where own allocation was relatively cheaper, 51% of respondents kept everything ($10.50, $0), 35% chose the equal split ($0.50, $0.50), and 14% gave away everything ($0, $0.53). In the second scenario, where both allocations had the same price, the proportion of respondents who kept everything fell to 37% ($1, $0). Similarly to scenario 1, 36% chose the equal split ($0.50, $0.50), and the remaining 27% gave away everything ($0, $1). In the third scenario, where allocation to oneself was relatively more expensive, the proportion of people who kept everything fell to 29.5% ($0.53,

[18] These analyses are not presented here but available from the authors upon request.

$0). Another 33% chose the equal split ($0.50, $0.50), and 37% gave away everything ($0, $10.50). Therefore, as the price of selfish allocation increased, fewer people chose selfish allocations.

On the individual basis, 26% kept everything in all three scenarios ("selfish"), another 12% gave away everything in all three scenarios ("an altruist"), 21% always chose equal splits ("an egalitarian"), and 32% kept less as the price of own allocation went up ("a utilitarian"). Finally, choices of 9% of participants could not be described by a utility function because they contained violations of revealed preference axioms ("cannot be determined").[19]

Values expressed in answers to selected survey questions

Figure 22 presents respondents' self-reported values about income redistribution. Almost 69% agreed to some extent that higher income households should pay a larger share of their income in taxes than lower-income households. Less than 18% disagreed with this statement to some degree, and another 14% neither agreed nor disagreed.

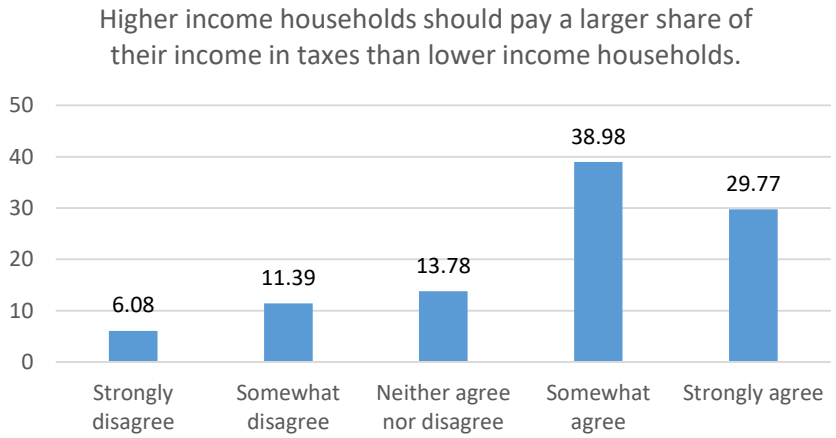


Figure 22: Preferences over income redistribution

Figure 23 displays attitudes to the unemployed (i.e., the "empathy" question). Only 18% of respondents agreed to some extent that the unemployed do not want to work. Almost 57% disagreed with this statement, and 25% neither agreed nor disagreed.

[19] On average, respondents gave $2.90 to Centraide, resulting in $6,550 transferred to Centraide.

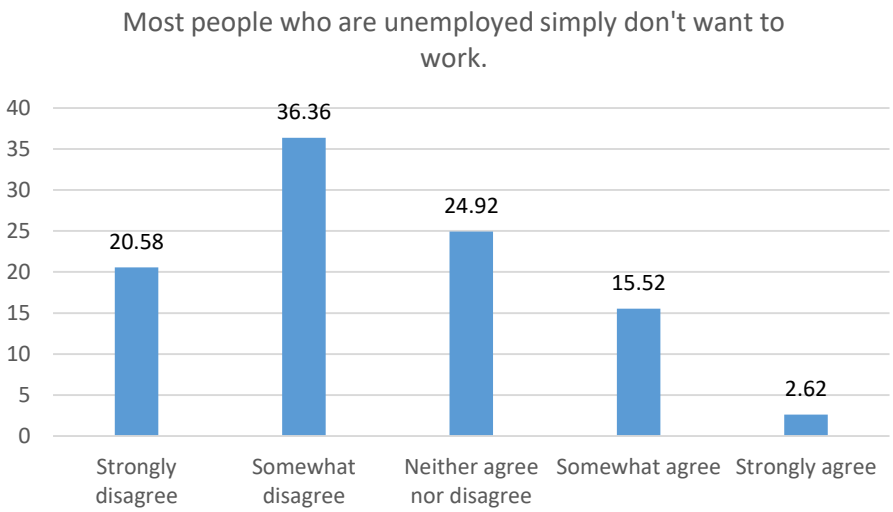


Figure 23: Attitudes toward the unemployed

Figure 24 presents responses about the influence of luck and effort to one's success in life. Over 78% of respondents agreed to some extent that it was effort (i.e., "honest and hard work") that was required to get ahead in life in Quebec. Less than 12% did not agree with this statement, and 10% neither agreed nor disagreed.

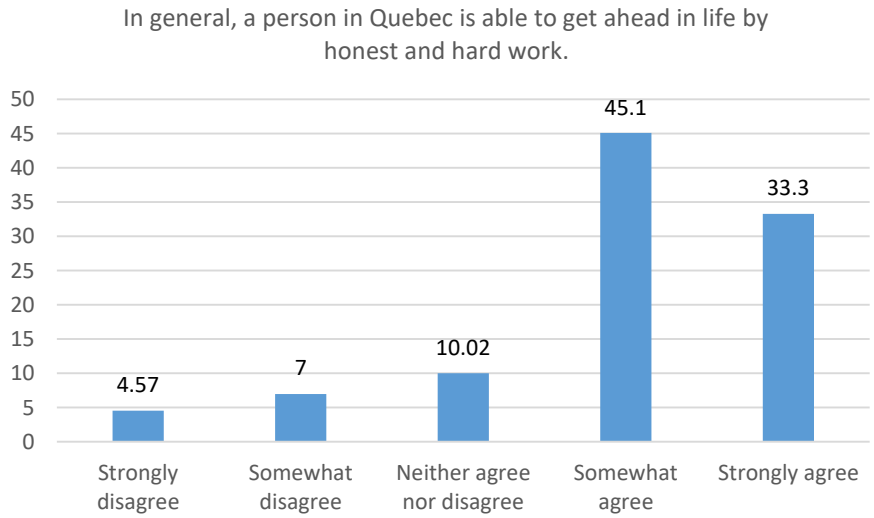


Figure 24: Beliefs about the determinants of success

Choices

Overall, 67.5% of respondents were in favour of raising the minimum wage to $15 an hour before the information treatment. This proportion did not significantly vary across seven groups. In comparison, in Engle-Warnick et al. (2010), 70.6% of respondents were in favour of increasing the minimum wage, although the question in their study did not specify how much the wage should go up. In the next subsection, we analyze determinants of support for a higher minimum wage regarding respondents' demographics and beliefs.

The determinants of voting to raise the minimum wage

In this section, we report our results regarding factors associated with the demand for a higher minimum wage. Table 4 shows estimation results for several models. All models were estimated on decisions before the information treatment using the pooled sample (2,255 observations).

Preferences

Estimated coefficients for Model 1 show a significant positive correlation between being a minimum wage earner (or having one in the family) and demand for an increase in the minimum wage. However, business owners, unemployed individuals, and union members were not significantly different in their demand for the increase.

Models 2 and 3 include controls for social preferences. The first result is that altruists are significantly more likely to answer "Yes" to higher minimum wages than respondents with selfish preferences, but respondents with other types of preferences are not significantly different in their choices. The second result is that once other measures of social preferences are added the effect of being an altruist becomes only marginally significant indicating a correlation between being an altruist and views on income redistribution, attitudes to the unemployed, and believing in the effort as a driver of success. Respondents who support income redistribution and have empathy for the unemployed were more likely to favour the increase in the minimum wage. To the contrary, individuals who believed that effort drives success (as opposed to luck) were less likely to favour the increase.

Beliefs

Model 4 includes controls for beliefs about the minimum wage. The first result is that respondents who overestimated the minimum wage were more likely to choose "Yes" to increase the minimum wage. A possible explanation for this result is that respondents who overestimated the minimum wage (and they predominantly believed it to be less than $15) expected the increase to $15 an hour to be relatively small, and hence acceptable. Those who underestimated the minimum wage or did not know its amount were not significantly different in their support of the policy relative to participants who correctly identified the amount of the minimum wage.

The second result is that substantially overestimating the proportion of workers who earn the minimum wage (>25%) or not knowing this proportion results in being more likely to support the increase in the minimum wage. However, these results are not robust to other covariates being added in the model. The third result is that beliefs about the size of the minimum wage relative to the average wage have no significant correlation with the decision to answer "Yes" to raise the minimum wage.

The specification of Model 5 adds variables that control for respondents' beliefs about consequences to job losses, prices, wages, and job opportunities for the unemployed. The first result is that compared with respondents who believed in *big job losses*, those who believed in

some job losses were more likely, and respondents who believed in *hardly any job losses* were even more likely, to answer "Yes" to increase the minimum wage. That is, support for the increase in the minimum wage increased with respondents' beliefs in less severe job losses. This result is consistent with that reported in Blinder and Krueger (2004).

The second result is that relative to those who believed in *no* effect for the unemployed, those who believed in *more* jobs for the unemployed were more likely to support a higher minimum wage, and those who believed in *fewer* jobs for the unemployed were even less likely to support them. That is, support for the increase in the minimum wage also grows with respondents' beliefs in a positive effect on the unemployed.

The third result is that compared with respondents who believed that prices would *increase*, respondents believing in *no* effect on prices or in prices going *down* were more likely to support the raise (although for the latter these differences were only marginally significant and disappeared when other covariates were added). Finally, participants who believed that wages for non-minimum wage workers would *drop* as a result of higher minimum wages were less likely to support the increase compared to those who expected wages to go up. Believing in no effect on other wages was only marginally significant and disappeared once we added other covariates.

Model 6 adds controls for expectations of own benefits from the increase in the minimum wage. We find that expecting own benefits is significantly positively correlated with demanding the increase in the minimum wage. Moreover, this variable is strongly correlated with being a minimum wage earner or having one in the family, so the effect of being a beneficiary from the policy found in Model 1 loses its significance in Model 6.

Knowledge

Model 7 controls for economic literacy, numeracy, and reasoning abilities. First, we find that scoring above the median on economic literacy has a significant negative association with the demand for the increase in the minimum wage. The significance reduces when the level of education is added in the model, but it remains marginally significant and negative. Second, we find that the effect of numeracy was only marginally significant but was robust to the inclusion of other variables. Third, the effect of "thinking fast" was negative and significant but lost some of its significance once we added demographic characteristics in the model (most likely this result is due to controlling for education). An interesting result is that choices of respondents who "think slow" were not significantly different from choices of those who give "other" answers to the CRT test, given that we control for their numeracy.

Models 8-10 verify the robustness of the previous results by adding political views, news sources, and demographics. The majority of our results are robust when we control for these other covariates, except several that we have already mentioned earlier (e.g., earning the minimum wage). Among the variables we added in Models 8-10, two variables had significant positive coefficients: being an older individual (over 35) and using the Internet as a source of news (although the effect of the latter disappeared once we controlled for education).

Variables controlling for political views also significantly improve the fit of the model (LR $\chi^2(4) = 28.4$, p-value<0.0001) without substantially affecting the effects of other variables.

Responses to the information treatment

Next, we investigate choices before and after the information treatment. As we reported earlier, over two-thirds of participants supported an increase in the minimum wage before the information is provided in the 7 groups. However, after the information treatment, less than a half of participants supported the increase. This decrease was statistically significant (p-value<0.00001). That is if there were a referendum on the topic, the increase in the minimum wage would have passed without the information treatment but not after the information treatment. This result suggests that overall the information about facts and consequences had some effects.

In this section, we detailed the respondents' reaction to different types of information. In what follows, we grouped groups 2-4 together and referred to them as groups about *facts and job losses*. We grouped groups 5-7 and referred to them as groups about *facts and prices*. Group 1, the *facts only* group, is considered separately.

Figure 25 shows proportions of respondents who answered "Yes" to raising the minimum wage before and after the information treatment by group with confidence intervals calculated without adjusting for repeated observations per person. While there were no significant differences in the proportion in favour of a higher minimum wage among groups *before* the information treatment, the proportion in favour reduced in all groups *after* the information treatment.

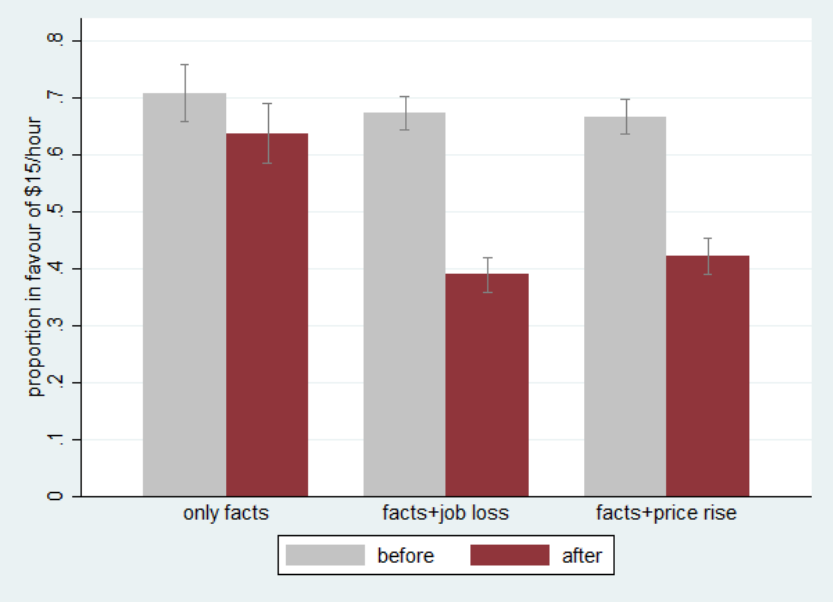
In the "facts only" group, the proportion in favour of a higher minimum wage decreased from 71% to slightly fewer than 64% (p-value<0.00001).[20] That is, providing only facts about the current minimum wage decreased the support for a higher minimum wage by 7 percentage points. In comparison, the proportion of supporters of the higher minimum wage in the "facts and job loss" groups decreased by 28 percentage points from 67% to 39% (p-value<0.00001). That is when compared to the "facts only" group, information about potential job losses resulted in an additional 21 percentage point decrease in the proportion of supporters of higher minimum wage.

Finally, in the "facts and prices" groups, the share of supporters of higher minimum wage fell by 25 percentage points from 67% to 42% (p-value<0.00001), similarly to the "facts and job loss" groups. That is, the additional information about potential price increases resulted in additional 18 percentage points decrease compared to the "facts only" group. We can conclude that providing information about possible consequences of raising the minimum wage is more efficient than providing the factual information alone. However, we did not observe significant differences between the types of consequences: private consequences to respondents through

[20] We adjusted for repeated observations per person using a random effects regression. In what follows, we use "adjusted" or "unadjusted" where applicable.

higher prices or public consequences for minimum wage workers in employment losses resulted in a similar decrease in support.

Figure 25: Choices to raise the minimum wage before and after the information treatment



2.a Group 1: information about facts

The goal of the information provided to the first group was to challenge beliefs about the current minimum wage and measure if this would affect the support for its increase. As we reported earlier, there are fewer choices in favour of raising the minimum wage after the information treatment in this group. It is important to investigate whether the observed change in support is solely due to the information treatment rather than other reasons (e.g., due to some other information that respondents were exposed to in the survey).

In this group, we provided information about three facts regarding the minimum wage: its absolute size, its size relative to the average wage, and the proportion of workers paid at this wage. Ideally, to establish if changes in decisions were solely due to the information treatment, we need to compare changes in decisions of individuals treated with information to those of individuals who were not treated with information (i.e., a control group). Since our design did not include a control group, we could identify treatment effects by comparing responses of individuals who have correct beliefs about the three facts to those of individuals with incorrect beliefs. The main idea behind this approach is that participants with correct beliefs do not learn anything new when we provide them with information (i.e., they are not treated). Hence, any changes to their decisions (if any) would be due to factors other than the provided information. This way, individuals with correct beliefs would be our control group, and individuals with incorrect beliefs would serve as a treatment group.

Because only 2 participants out of 314 provided correct information about all three facts, we could not use them as a control group. Therefore, we had to investigate a treatment effect for each fact separately. We constructed three subsamples using only observations in group 1. The subsamples were designed to include only individuals who vary in their responses only for one of the three facts. For example, to investigate the effect of information about the proportion of workers paid the minimum wage, we constructed a subsample that included only individuals who correctly responded to the question about the relative minimum wage and the question about the amount of the minimum wage. That is, individuals in the subsample differed only in their responses to the question about the proportion of workers who earn the minimum wage. The main idea behind this approach is that since the individuals in the subsample vary only in their beliefs about the proportion of workers, any differences in their responses after the information treatment should be attributed solely to the new information about the proportion of workers. The remaining two subsamples were constructed similarly by grouping individuals with similar responses to two out of three questions.

To estimate the effect of information about each fact, we estimated the model in equation (2) on each subsample. [21] To account for possible heterogeneity in treatment effects depending on the type of incorrect beliefs (e.g., under vs. overestimating) and not knowing, we modified equation (2) by adding indicators for each type of beliefs (i.e., variables labelled *over*, *under*, and *did not know*, respectively) and kept the correct beliefs as a base. We also added interaction terms for decisions made after the information treatment and each type of beliefs. That is, individuals with correct beliefs about each fact serve as a control group, and treatment effects vary among people with incorrect beliefs depending on their answer to the question (i.e., whether they underestimated, overestimated, or did not know the answer):

$$\begin{aligned} y_{it} = {} & \beta_0 + \beta_1 post_{it} \\ & + \beta_2 over_i + \beta_3 over_i \times post_{it} \\ & + \beta_4 under_i + \beta_5 under_i \times post_{it} \\ & + \beta_6 did\ not\ know_i + \beta_7 did\ not\ know_i \times post_{\mathrm{it}} + \varepsilon_{it}, \end{aligned} \tag{4}$$

where, as before, $y_{it} = \{0,1\}$ is the response to the question about raising the minimum wage before or after the information treatment ($t = \{1,2\}$). The model in equation (4) was estimated using the linear probability regression on three subsamples constructed as described above.[22] The results are presented in panels a)-c) of Table 5.

Panel *a* provides the regression coefficients of the model testing the effect of information about *the amount of the minimum wage* estimated on the subsample of respondents who correctly identified the relative minimum wage and overestimated the proportion of workers. Due to the low number individuals who underestimated or responded "I don't know" regarding

[21] When constructing subsamples to estimate the effect of information about either the relative minimum wage or its amount, we used the subsample of individuals who overestimated the proportion of workers due to the small number of respondents who correctly identified the proportion of workers.

[22] Using the probit model to estimate a difference-in-differences model on a discrete dependent variable has several issues (Blundell and Costa Dias, 2008). Instead, and given the low number of observations, we use the linear probability model. We have a negligible number of predictions outside the (0,1) range.

the amount of the minimum wage (4 individuals in each group), these observations were dropped. Therefore, only 4 coefficients are reported in the table: β_0, β_1, β_2, and β_3.

The results suggest that individuals who correctly responded with the amount of the minimum wage did not significantly change their support for the minimum wage in response to information about facts (coefficient at variable "*After information treatment*"). At the same time, individuals who overestimated the minimum wage reduced their support for higher minimum wage by 15.4 percentage points (p-value 0.016). This result is not counterintuitive. All respondents who overestimated the minimum wage believed that it was between $11 and $15 an hour (i.e., no one believed that it was over $15).

In relative terms, an increase in a minimum wage from, say, $13 to $15 an hour is much smaller than an increase from $10.75 to $15 an hour. It is reasonable that respondents who overestimated the minimum wage reduced their support for its increase because the increase turns out more drastic than they initially expected. Recall that earlier we reported that overestimating the amount of the minimum wage was positively associated with the demand to increase the minimum wage.

Panel *b* presents the regression coefficients for the model testing the effect of information about *relative minimum wage* estimated on the subsample of respondents who correctly identified the amount of the minimum wage and overestimated the proportion of workers (we use them in the subsample because they are the largest group and because almost no one had respondent to this question correctly). We observed no significant change in support for a higher minimum wage among individuals who correctly identified the relative size of the minimum wage (the coefficient at "*After information treatment"*). All three interaction coefficients have significant coefficients suggesting that individuals with incorrect beliefs about the relative minimum wage reacted to the information treatment compared to individuals with correct beliefs. The incremental decrease in support among individuals who under- or overestimated the relative wage was similar at 16.2 and 17.7 percentage points, respectively (p-values 0.023 and 0.024, respectively). The incremental decrease in support was the largest for individuals who did not know the relative wage. Their decrease in support is estimated to be 30 percentage points (p-value $= 0.010$). The interesting finding here is that we have heterogeneity in the magnitude of the treatment effect but not its direction as all respondents reduced their support for the policy after the information treatment.

Finally, panel *c* shows the regression coefficients for the model testing the effect of information about *the proportion of workers earning the minimum wage* estimated on the subsample of respondents who correctly identified both the amount of the minimum wage and its size relative to the average wage. Since respondents predominantly overestimated the proportion of workers who earn the minimum wage, we grouped observations depending on the reported percentage of workers: less than 15% (base category), 15-25%, over 25%, and did not know. Equation 4a below presents the model from equation 4 with the new labels of the variables:

$$y_{it} = \beta_0 + \beta_1 post_{it} + \beta_2 15\_25_i + \beta_3 15\_25_i \times post_{it}$$

$$+\beta_4 25\text{plus}_i + \beta_5 25\text{plus}_i \text{ x } post_{it}$$
$$+\beta_6 did\ not\ know_i + \beta_7 did\ not\ know_i \text{ x } post_{\text{it}} + \varepsilon_{it}, \quad (4a)$$

The results suggest that there was no change in support for a higher minimum wage for individuals who were correct about the minimum wage and responded that the proportion of workers is less than 15%.[23] No interaction coefficients are significant. That is, compared to the control group, there were no significant differences in changes in responses before and after the information treatment for those who either overestimated the proportion of workers (i.e., 15-25% or >25%) or did not know the answer. We conclude that the information about the proportion of workers earning the minimum wage did not affect decisions.

2.b. Groups 2-4: information about losses of employment

Next, we estimated the treatment effect of information about losses of employment by pooling together observations in groups 2, 3, and 4. Earlier, we showed that the proportion of supporters of the higher minimum wage in these three groups fell by 28 percentage points after the information treatment, which is 21 percentage points more than the change in support in the "facts only" group. That is, we can attribute the difference of 21 percentage points solely to the information about hypothetical employment losses.

Average treatment effects may mask heterogeneity in responses to the hypothetical employment loss scenarios depending on respondents' prior beliefs. To attribute the observed differences in choices solely to the information about the hypothetical loss of employment, we compare changes in decisions in groups 2-4 with those in group 1 by belief about employment losses. To investigate heterogeneous treatment effects, we once again build on the model in equation (2). We added to this model indicators for different beliefs about employment losses (i.e., $some_i$ for believing in some loss and $none_i$ for believing in hardly any loss), their interactions with indicators for groups 2-4 which are the treatment group as opposed to group 1 being the control group (variable T_i), indicators for decisions made after the information treatment ($post_{i2} = 1$), and triple interactions with indicators for beliefs, groups 2-4, and decisions made after the information treatment (i.e., $some_i \text{ x } post_{it} \text{ x } T_i$ and $none_i \text{ x } T_i \text{ x } post_{\text{it}}$). Coefficients at these triple-interaction terms pick up heterogeneity in treatment effects of information about employment losses by prior beliefs. We estimated this model using a linear probability model on responses pooled over groups 1-4:

$$y_{it} = \beta_0 + \beta_1 T_i + \beta_2 post_{it} + \beta_3 T_i \text{ x } post_{it}$$
$$+\beta_4 some_i + \beta_5 some_i \text{ x } T_i + \beta_6 some_i \text{ x } post_{it} + \beta_7 some_i \text{ x } post_{it} \text{ x } T_i$$
$$+\beta_8 none_i + \beta_9 none_i \text{ x } T_i + \beta_{10} none_i \text{ x } post_{it} + \beta_{11} none_i \text{ x } T_i \text{ x } post_{\text{it}} + \varepsilon_{it}, \quad (5)$$

[23] Due to the small number of observations, we group responses "5%-9.99%" with responses "below 5%" and "10%-14.99%".

Table 6 reports the estimation results of the model in equation (5). To better explain our results, we also present predicted probabilities of answering “Yes” before and after the information treatment, separately by group and type of beliefs (

Figure 26). The results once again confirm that before the information treatment, in group 1 respondents were more likely to answer "Yes" if they believed in some or hardly any employment losses compared to large losses (estimated differences in probabilities for each belief compared to the base, $\beta_4$and β_8, are significant). Also, the results confirm that before the information treatment there were no significant differences between group 1 and groups 2-4 (estimates of differences in support, β_1, β_5 and β_9, are not significant).

Second, the results suggest that individuals reacted very differently to the information treatment depending on the group and beliefs. Those who believed in *large losses* statistically increased their support for higher minimum wages in group 1 by 13.5 percentage points (as captured by β_2). In groups 2-4 individuals who believed in *large losses* also increased their support, and this increase was similar to the increase in group 1 (the difference of 0.019 captured by β_3 and not statistically significant). That is, they reacted to the factual information, but not to consequences about job losses (i.e., their treatment effect is equal to 0).

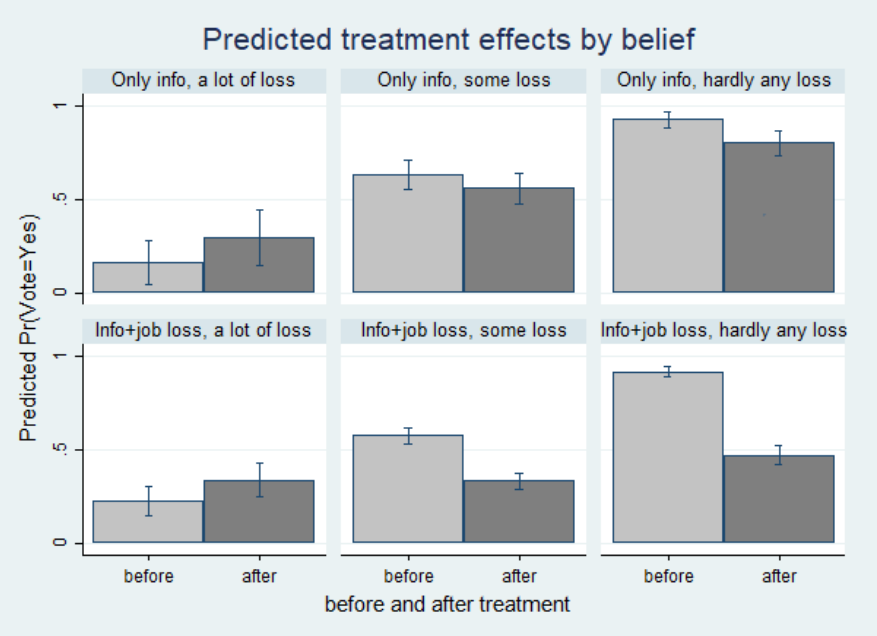
Third, the results suggest that those who believed in *some* loss or *hardly any* loss behaved very differently. Those who believed in some loss *decreased* their support in group 1 by 7.2 percentage points ($\beta_2 + \beta_6$). This change in support was 20.7 percentage points lower than that for individuals who believed in a lot of loss (picked up by β_6). In groups 2-4, individuals who believed in some loss also decreased their support, and the magnitude of this decrease was even larger. Before the information treatment, the probability to support the policy for individuals with this belief in groups 2-4 was 57.6% ($\beta_0 + \beta_1 + \beta_4 + \beta_5$). After the information treatment, it decreased to slightly under 33.2% (a sum of coefficient estimates from β_0 to β_7), or by 24.4 percentage points. Therefore, the treatment effect of information about employment losses alone for these individuals is 24-7=17.2 percentage points (p-value < 0.0001). This treatment effect differs by 17.2-1.9=15.3 percentage points from that for individuals who believed in a large losses, and this difference is marginally significant (β_7).

Fourth, the results show that those who believed in *hardly any loss* significantly decreased their support for the policy in both groups 1 and 2-4. In group 1 their support decreased by slightly over 12.3 percentage points, from 92.7% ($\beta_0 + \beta_8$) to 80.4% ($\beta_0 + \beta_2 + \beta_8 + \beta_{10}$). In groups 2-4 this decrease was 44.4 percentage points, from almost 91.6% ($\beta_0 + \beta_1 + \beta_8 + \beta_9$) to 47.2% ($\beta_0 + \beta_1 + \beta_2 + \beta_3 + \beta_8 + \beta_9 + \beta_{10} + \beta_{11}$). The difference between these two changes in support is 32.1 percentage points; it constitutes the treatment effect of information about employment losses to this group of respondents. This treatment effect significantly differs by 30.2 percentage points from the treatment effect for respondents who believed in large job losses (β_{11}).

Therefore, we conclude that the information about job losses was effective in reducing support for the increase in the minimum wage and that its effect differed depending on respondents' prior beliefs. The effect for those who already expected a lot of loss of employment was not statistically significant. The effect for those who believed in some losses was marginally significant. The effect for those who believed in hardly any losses was both significant and large

in its magnitude. That is, respondents were more sensitive to the provided information if their prior beliefs were challenged by the information.

Figure 26: Predicted probabilities to support a higher minimum wage and information about job losses, by belief and group



2.c. Groups 5-7: information about prices

Next, we evaluated the effects of information about prices. Recall that in groups 5-7, in addition to factual information, we also provided hypothetical scenarios about consequences for prices as a result of an increase in the minimum wage. Earlier, we reported that in groups 5-7 the support for higher minimum wages decreased by 25 percentage points, which is 18 percentage points more than in group 1. That is, overall, we can attribute this decrease of 18 percentage points to information about prices.

As we did in section 2.b, we investigated heterogeneity in treatment effects depending on beliefs about consequences for prices by comparing changes in decisions in groups 5-7 with changes in decisions in group 1 after the information treatment. We follow the same approach as in section 2.b and modify the model in equation (5) to include beliefs about prices:[24]

$$y_{it} = \beta_0 + \beta_1 T_i + \beta_2 post_{it} + \beta_3 T_i \times post_{it} + \beta_4 same_i + \beta_5 same_i \times post_{it} + \beta_6 same_i \times T_i + \beta_7 same_i \times post_{it} \times T_i + \varepsilon_{it} \quad (6)$$

Table 7 presents the estimation results of the model in equation (6) on the subsample of individuals in groups 1 and 5-7 who reported believing in either no change in prices or an increase in prices. As in section 2.b, we present our results using predicted probabilities by group and type of beliefs (see

[24] Due to the small number of individuals who believed in a decrease in prices, their responses were dropped.

Figure 27).

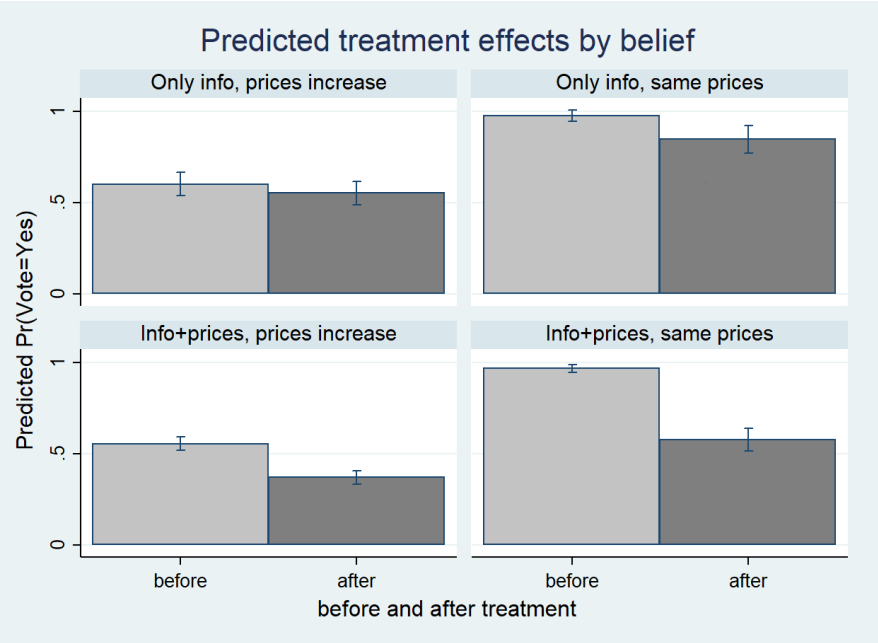
Our results again confirm that before the information treatment respondents who believed that prices would remain the same were more likely to answer "Yes" to increase the minimum wage than those who believed that prices would increase in group 1 and 5-7 (by 37.5% and 41%, respectively, as captured by β_4 and a sum of β_4 and β_6).

In group 1, respondents who believed that prices would go up reduced their support for the increase in the minimum wage from 60% to 55% (or by almost 5 percentage points as captured by β_2). In groups 5-7, they decreased support by much more – from 56% to 37% (or by almost 19 percentage points). The difference in these changes (equal to 13.6 percentage points as captured by β_3) is the treatment effect of information about prices for those who already believed prices to increase.

Those who believed prices to remain the same also decreased their support for a higher minimum wage. In group 1, this decrease occurred from 98% to 85% resulting in a decrease of 13 percentage points, which is 8 percentage points larger compared with those who expected prices to increase and marginally significant (captured by β_5). In groups 5-7, a decrease in support occurred from 97% to 58%, or by 39 percentage points. The difference in decreases in support between groups 5-7 and 1 is the treatment effect equal to 26 percentage points significantly different from 0 (p-value$<$0.0001). This treatment effect is 12.4 percentage points larger than that for respondents who believed in price increases (captured by β_7).

To summarize, we find a treatment effect of information about prices for both respondents who believed in price increases and respondents who expected prices to remain the same with however, heterogeneity in the treatment effects: those who believed that prices would remain the same have a significantly larger treatment effect than those who believed them to increase. That is, those whose beliefs differed from the information we provided were more sensitive to the information.

Figure 27: Predicted probabilities before and after the information treatment about prices and beliefs about prices (groups 1 vs. 5-7)



Dynamics of choices and information treatment

Earlier, we reported an overall reduction in the proportion of individuals supporting the increase in the minimum wage in all groups. To a large extent, this reduction must have occurred due to respondents switching opinion from "Yes" to "No," which suggests that the information treatment had been effective. However, we may have some respondents switching opinion from "No" to "Yes," which reduces the overall effectiveness of the information treatment. In this section, we investigate dynamics of decisions at the individual level before and after the information treatment.

In what follows, we estimate probabilities of choosing "No" after the information treatment conditional on having chosen "Yes" before the information treatment (referred to as "switching from Yes to No"). Similarly, we investigate probabilities of choosing "Yes" after the information treatment conditional on having chosen "No" before the information treatment (referred to as "switching from No to Yes").

The following sections refer to the bivariate probit model regression, the equation (3) presented earlier:

$$y_j = \begin{cases} 1, \text{if } y_j^* > 0 \\ 0, \text{otherwise} \end{cases} \qquad (3)$$

where

$$y_j^* = f(Preferences, Beliefs, Knowledge, X) + \varepsilon_j,\ j = prior, post$$

and

$$\begin{bmatrix}\varepsilon_{post}\\ \varepsilon_{prior}\end{bmatrix}|X \sim N\left(\begin{bmatrix}0\\0\end{bmatrix},\begin{bmatrix}1 & \rho\\ \rho & 1\end{bmatrix}\right)$$

We use both the pooled data and data by group to study choice dynamics; we also study heterogeneity in choice dynamics. We investigate choice dynamics using average marginal effects computed with the estimates of the bivariate model at actual values of the other variables.[25]

Changing choices from "Yes" to "No"

Erreur ! Source du renvoi introuvable. shows that conditional on having responded "Yes" before the information treatment, the proportion of respondents who switched from "Yes" to "No" was significantly bigger than zero in all 7 groups. The proportion of such respondents is the lowest in group 1.

As consequences of a higher minimum wage for job losses increased from group 2 to group 4, the proportion of respondents who switched their opinion from "Yes" to "No" significantly increased. However, this is not the case for groups 5, 6, and 7. In these groups, as consequences for prices increased, the proportion of respondents who switched first increased significantly from group 5 to group 6, but then flattened out from group 6 to group 7.

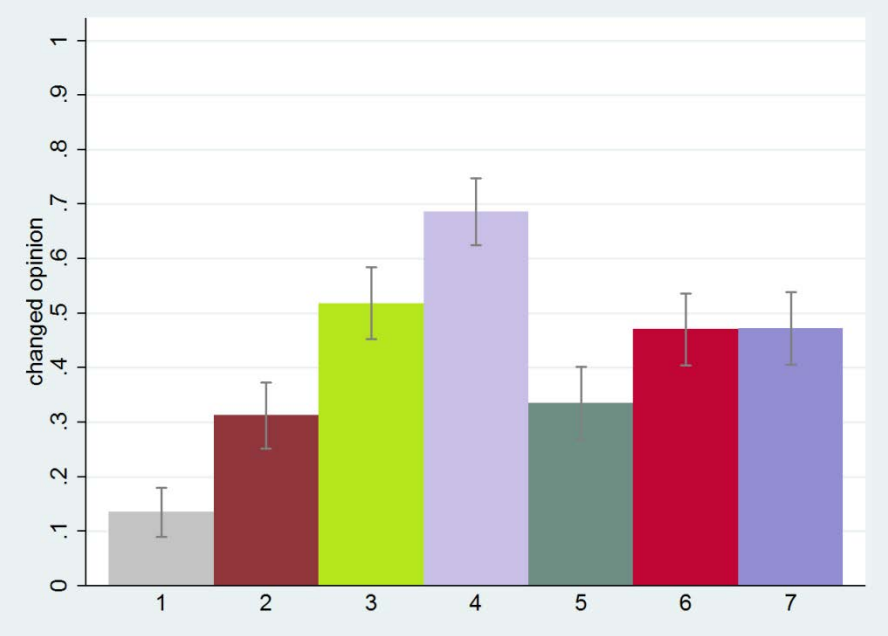
Next,

[25] To study the probability to respond "No" after the information treatment conditional on having responded "Yes" before the information treatment, we predict the conditional probability: $\Pr(y_{post}=0|y_{prior}=1;X)=\frac{\Pr(y_{prior}=1,y_{post}=0)}{\Pr(y_{prior}=1)}=\Phi_2(-\mathrm{x_{post}b_{post}},\mathrm{x_{prior}b}_{prior},-\rho)/\Phi(\mathrm{x_{prior}b_{prior}})$. Here $\mathrm{x_{prior}b_{prior}}$ and $\mathrm{x_{post}b_{post}}$ are the explanatory variables and coefficients of the equations on decisions before and after information treatment, and Φ is the standard normal distribution function, and Φ_2 is the bivariate standard normal distribution function. Similar approach was used to predict the probability of responding "Yes" after the information treatment, conditional on responding "No" before the information treatment. Standard errors were calculated using the delta method.

Table 8 reports estimates of the bivariate model described by a set of equations (3). The results suggest several things. First, some variables that were significant determinants of the demand for the minimum wage before the information treatment remain significant after the information treatment. For example, having empathy for the unemployed, beliefs about consequences of raising the minimum wage to employment and prices, and expectation of own benefits are all significant predictors, even though their coefficients are different in the two equations.

Second, new variables became significant predictors after the information treatment, such as scoring above the median on the numeracy test and reporting not searching for news from the list of sources we provided. Third, some variables lost their significance, for example, supporting income redistribution, believing that effort drives success, overestimating the minimum wage, and scoring above the median on economic literacy. Fourth, the results suggest a significant positive correlation of 0.66 between the error terms in the two equations. Finally, conditional on observable characteristics, there were no differences in decisions among groups before the information treatment, as indicated by all 6 dummies controlling for group intercepts being not statistically significant.

Figure 28: Proportion of individuals who chose "No" after the information treatment, conditional on having chosen "Yes" before the information treatment, by group



We then investigate marginal effects for the variables of interest, summarized in Table 9: Marginal effects for the bivariate probit model estimated on the pooled data. We find that expecting the family to benefit from the increase in the minimum wage was associated with a 2.5 percentage-point lower probability to switch opinions from "Yes" to "No" that was not statistically significant (p-value = 0.428). Respondents who reported believing in redistribution

were also less likely to switch opinions, by 1.6 percentage points, but this difference was also not statistically significant (p-value = 0.510). Believing in the effort as a driver of success was also associated with a smaller probability of switching opinions, by 3.2 percentage points, and also not statistically significant (p-value = 0.221). We conclude that expecting to benefit from the policy and selected variables indicating social preferences did not influence one's decisions to change from "Yes" to "No."

Compared with individuals who believed in large employment losses, believing in some loss or hardly any loss was associated with a higher probability of switching opinions from "Yes" to "No" (by 12.6 and 13.2 percentage points, respectively), with both marginal effects being significant at less than 1%.

Compared with individuals who believed that prices would go up, believing in prices to remain the same was associated with a lower probability to switch opinion by 4 percentage points (p-value = 0.113), and believing in prices to go down was associated with a higher probability by 18 percentage points but also non-significant (p-value $=$ 0.147).

Having a score above the median on either the Quebec economy knowledge test or the economic literacy test was not significantly associated with a higher probability to switch opinions from "Yes" to "No" (both by under 0.5 percentage points). Scoring higher on the numeracy test, however, did result in a statistically significantly higher probability to switch opinion by 6 percentage points (p-value $=$ 0.034). Finally, giving 2 or 3 "slow" answers to the CRT was not associated with a statistically higher probability to change opinions: they were 1 percentage point less likely to switch opinion, but this difference was highly non-significant (p-value $=$ 0.784).

Changing choices from "No" to "Yes"

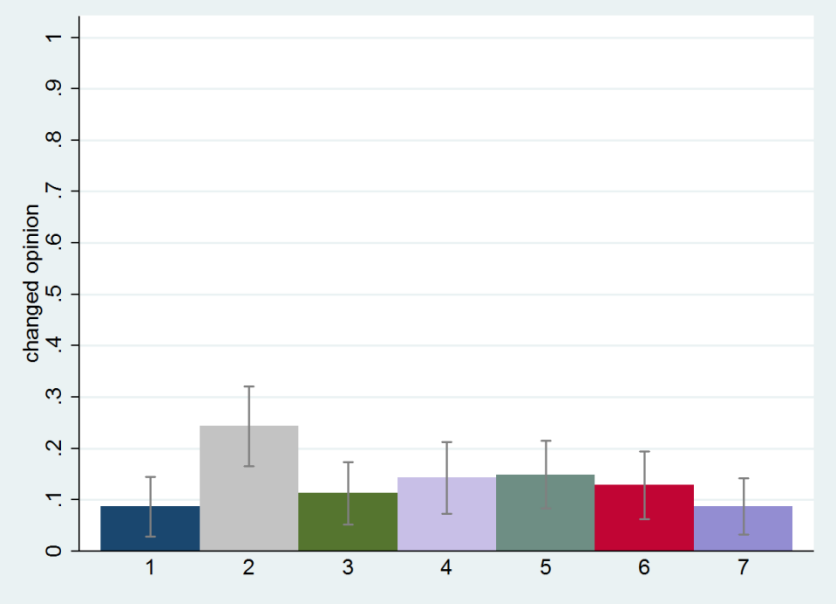
Figure 29 shows that in all 7 groups the proportion of respondents who changed opinions from "No" to "Yes" was between 10% and 25%, all significantly larger than zero. That is the information here has increased the support for the policy of raising the minimum wage. Another interesting observation is that the proportion of respondents who switched opinion from "No" to "Yes" was fairly stable in all groups. One exception was group 2, in which we asked whether respondents would support the increase if it would result in a 10% loss of employment among the minimum wage workers. That is, the 25% of respondents who changed their opinion from "No" to "Yes," found a 10% loss of employment acceptable. We investigate this finding in more detail later in the report.

As we did in the previous subsection, we next investigate marginal effects of variables controlling for preferences, beliefs, and knowledge on predicted probability of responding "Yes" after the information treatment, conditional on responding "No" before the information treatment (see Table 9). We find that such factors as expecting personal benefit from the higher minimum wage, believing in redistribution, or having empathy for the unemployed are all not statistically significant predictors of changing decisions from "No" to "Yes." So are

indicators of scoring above the median on Quebec economy, economic literacy, numeracy and CRT tests. However, believing in the effort as a driver of success resulted in a 2.7 percentage point higher probability of changing opinion from "No" to "Yes" (p-value $= 0.042$). In the next section, we further investigate possible reasons for this result.

Believing in some or hardly any employment losses is associated with significantly lower probabilities of changing opinion from "No" to "Yes" compared with believing in large employment losses (by 9.2 and 12.6 percentage points, respectively; p-values < 0.01 for both). Believing in prices staying the same or going down is associated with lower probabilities to change opinions from "No" to "Yes" compared with believing in prices going up (by 3.6 and 8.2 percentage points, respectively; p-values 0.02 and 0.07, respectively). This suggests that individuals who expected severe consequences of the minimum wage policy (i.e., higher prices and a large loss of employment) and hence voted against the policy before the information treatment, found our hypothetical scenarios as acceptable costs of the policy and changed their opinion.

Figure 29: Proportion of individuals who chose "Yes" after the information treatment, conditional on having chosen "No" before the information treatment, by group



Willingness to pay for a higher minimum wage

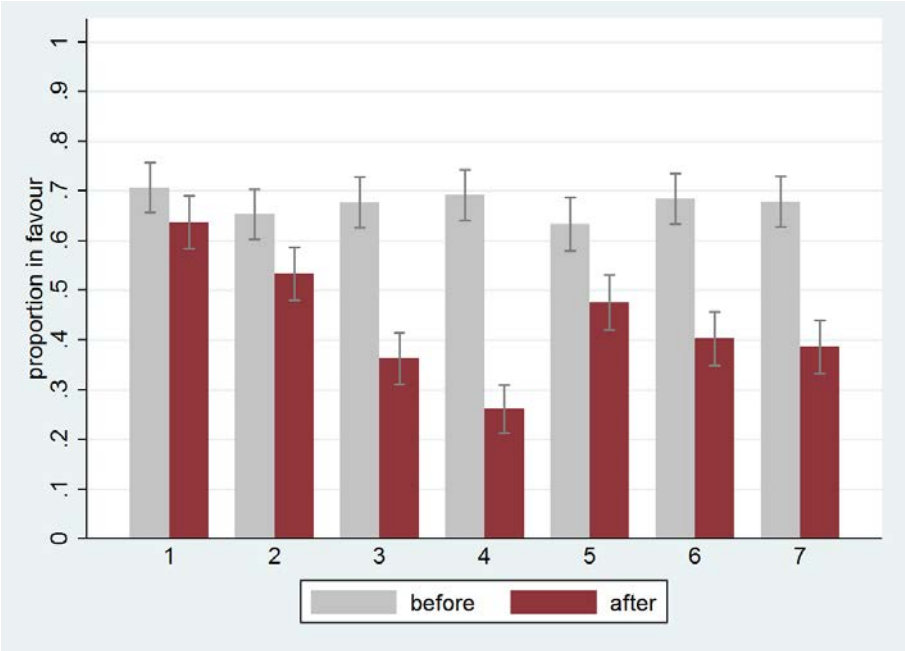
In this section, we investigate dynamics in decisions by group. In particular, we focus on the question whether the demand for the higher minimum wage decreases as consequences to increase in employment and prices. We interpret these choice dynamics as expressions of respondents' willingness to pay for the increase in the minimum wage.

Figure 28: Proportion of respondents in favour of increasing the minimum wage, before and after the information treatment, by group presents proportions of respondents in favour of increasing the

minimum wage by group with corresponding 95% confidence intervals. It is clearly demonstrated that the proportion in support of the policy drops from group 2 to group 4, and from group 5 to group 7, although not all differences are statistically significant. The test of equality of proportion rejects the null that proportions in favour are the same in groups 2-4 at less than 1%. The proportion of respondents in favour of the policy in group 5 is larger than that in group 6, and this difference is significant (p-value = 0.033). However, the proportions in favour of the policy in groups 6 and 7 are practically identical.

These patterns replicate the patterns of decisions changing from "Yes" to "No" that we described earlier and shown in **Erreur ! Source du renvoi introuvable.**. We conclude that the demand for the increase in the minimum wage drops as the price of the policy increases both to minimum-wage workers (regarding employment) and to respondents (regarding prices).

Figure 28: Proportion of respondents in favour of increasing the minimum wage, before and after the information treatment, by group



We then re-estimate the bivariate probit model in equation (3), which was modified to include interactions of selected variables with group dummies. Table 9: Marginal effects for the bivariate probit model estimated on the pooled data

Variables	Average marginal effect (st. err.)

	probability of changing response *from Yes to No*	probability of changing response *from No to Yes*
Expects family to benefit	-0.025 (0.031)	-0.021 (0.018)
Believes in redistribution	-0.016 (0.024)	0.001 (0.013)
Believes in effort	-0.032 (0.026)	0.023** (0.013)
Beliefs about job losses:		
- some loss vs. a lot	0.126*** (0.039)	-0.092*** (0.029)
- hardly any loss vs. a lot	0.132*** (0.044)	-0.126*** (0.031)
Beliefs about prices:		
- same vs. going up	-0.041 (0.026)	-0.036** (0.015)
- down vs. going up	0.188 (0.129)	-0.082* (0.045)
Above median score on QC economy	0.005 (0.028)	-0.001 (0.015)
At least median score on econ. literacy	0.004 (0.022)	0.002 (0.012)
At least median score on numeracy	0.059** (0.028)	-0.028 (0.017)
CRT test:		
- slow vs. other	-0.011 (0.038)	0.008 (0.019)
- fast vs. other	-0.017 (0.032)	0.015 (0.017)

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 10 and 11 report estimated coefficients for the bivariate probit model estimated on observations from groups 1-4 and groups 1 and 5-7, respectively. We then investigate the marginal effects of variables of interest reported in Table 12 and compare them among groups.

We found that conditional on having initially supported the policy, having preferences for redistribution resulted in a lower probability to switch decisions to "No" in group 5, a higher probability in group 6, and no difference in group 7. That is, those who preferred redistribution were initially 20 percentage points more willing to pay for the policy (if prices would go up by 5-10%). However, they were 22 percentage points more likely to reject the policy at a price increase by 15-20%. Finally, they were not different from those who did not prefer redistribution at a price increase of 25-30%.

Also, conditional on not having supported the policy before the information treatment, Table 12 also shows that those who preferred redistribution are more likely change their mind in favour of the policy at a 5-10% price increase. However, at a 15-20% increase in prices, they are 9 percentage points less likely to change their mind. Moreover, as above, at a 25-30% increase in prices, they are similar to those who did not express preferences for redistribution. Finally, no differences in probabilities to change one's mind were found in groups 2-4.

Next, we found that regarding information about job losses, only in group 4 there was a significant effect of empathy for the unemployed on the probabilities to switch opinions. Conditional on having initially supported the policy, empathy is associated with an 11 percentage-point increase in the probability to choosing "No" after the information treatment if the policy would result in a 50% loss of employment (p-value $= 0.057$). Conditional on having initially rejected the policy, empathy is associated with a 3 percentage-point decrease in the probability of choosing "Yes" after the information treatment in the same group (significant at less than 5%).

We also found that regarding information about prices, only in group 5 there is a significant effect of empathy. Conditional on having initially supported the policy, respondents who expressed having empathy for the unemployed have a 12 percentage-point lower probability to switch opinion in group 5. That is, respondents with empathy was (marginally) more likely to keep supporting the policy if it would result in a 5-10% increase in prices.

Our results alsoshow that in groups 5-7, only in group 7 believing in effort has a significant positive effect on switching decisions from "Yes" to "No." That is, believing in effort is associated with a 16 percentage-point higher probability to respond "No" to the policy if it resulted in a 25-30% price increase (p-value $= 0.016$). Believing in the effort is also found to be significantly associated with changing decisions in group 4. That is respondents who believed in the effort and initially supported the policy are 14 percentage points less likely to reduce their support if the policy resulted in a 50% reduction in employment (p-value = 0.005). In the same group, out of respondents who did not initially support the policy, those who believed in effort are 3.4 percentage points more likely to support the policy after the information treatment (p-value $= 0.017$).

To illustrate our next set of results for groups 2-4, we graphically present the predicted probabilities (the left sides of panels *a* and *b*) and the average marginal effects (the right sides of panels *a* and *b*) in Figure 31. We find that there were non-zero probabilities to switch opinions, both from "Yes" to "No" and "No" to "Yes," in all four groups regardless of the prior belief about employment losses. We also find that beliefs in some or hardly any job losses had a positive effect on the probability to switch from "Yes" to "No", and a negative effect on the probability to switch from "No" to "Yes". The magnitude of the marginal effects increased in absolute terms from group 2 to group 4, although sometimes it was not statistically significant.

Compared to those who believed in large employment losses, believing in some losses are associated with a 39 percentage-point increase in switching decisions from "Yes" to "No" in group 4 (p-value < 0.0001). Moreover, among respondents who did not initially support the policy those who believed in some employment loss are also significantly less likely to change their mind in favour of the policy (by almost 20 percentage points). That is, a 50% loss in employment appears to be too large of a price to be worth the policy for those who expected only some loss of employment. Those who expected hardly any loss of employment react similarly both regarding the higher probability to switch from "Yes" to "No" and regarding the lower probability to switch from "No" to "Yes," and also only in group 4. We conclude that there is a decreasing willingness to pay for the higher minimum wage regarding losses of jobs, but beliefs mattered only in group 4 where we assumed a 50% loss in employment.

We also find that compared with those who expected large losses, those who believed in some or hardly any job losses are substantially more likely to reduce support for the minimum wage policy if prices went up in groups 5-7 (not shown graphically, see Table 12). They are also less likely to change their opinion from "No" to "Yes," although the effect becomes smaller from group 5 to groups 6 and 7. That is, they are less likely to be willing to pay for the policy regarding higher prices, even though they expected small or no negative consequences of the policy to employment.

As above, we illustrate our next set of results graphically in Figure 30. The figure demonstrates that there is a significant switch from "Yes" to "No" in all groups, which increases with beliefs about prices and as hypothetical prices increases. Moreover, the figure shows that there are smaller probabilities of switching from "No" to "Yes" in all groups. These probabilities decrease as prices increase, and also vary with the beliefs.

We find that those who believed in prices to remain the same were not significantly different in their probability to switch from "Yes" to "No" compared to those who believed that prices would go up. However, conditional on not having supported the policy initially, those who believed in prices to stay the same are less likely to change their mind after the information treatment in groups 6 and 7, although the magnitude of the effect was small (by 5.6 and 4.8 percentage points, respectively) and do not significantly vary between the two groups (see Table 12).

We also find that conditional on having initially chosen “Yes” to the increase in the minimum wage, those who believe in prices to go down are significantly more likely to change their choice to “No” after the information treatment about prices in all three groups. That is, they react to the hypothetical scenarios, even though they do not initially believe in price increases. The magnitudes of the effect were large (66, 60, and 59 percentage points, respectively), but did not significantly vary among the three groups.

Our results for probabilities to switch from “No” to “Yes” have an interesting interpretation regarding those who expected prices to go up. A significant proportion of them was likely to change their mind in favour of the policy after the information treatment (by 9, 7.7, and 5.7 percentage points, respectively; all three p-values are less than 0.0001). We interpret this result as evidence that our hypothetical price increases were not as high as these respondents had expected before the information treatment. That is, by providing information about price increases we increase the support for the minimum wage policy among them. The same can be said about those who expected prices to remain the same and whose change in decisions was similar to those who expected prices to remain the same in group 5. This suggests that an increase in prices of 5-10% (group 5) was not a substantial increase for these respondents, and hence they decided to support the policy.

Regarding the results for groups 2-4, we also find that those who expected prices to stay the same were also significantly less responsive to information about job losses in groups 2-4, relative to those who expected prices to go up. That is, they demonstrate a high willingness to pay for the increase in the minimum wage regarding costs to others (job losses).

Scoring above the median for the economic literacy test has no significant effect on the probability of switching decisions. This can be possibly explained with controlling for beliefs about the consequences of the increase in the minimum wage, which are correlated with the knowledge of economics.

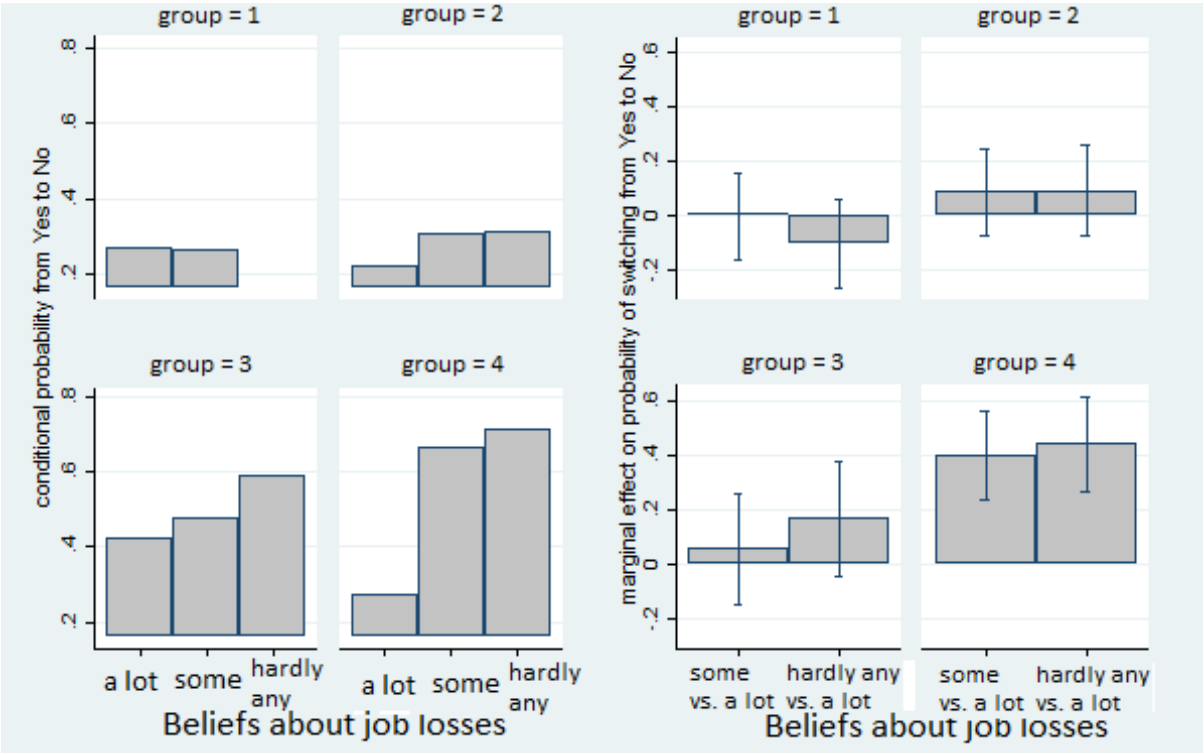
Scoring above the median on the test about the Quebec economy has a significant positive effect of 15.7 percentage points on the probability of switching from “Yes” to “No” in group 4. It is possible that the 50% loss of employment in group 4 was new and unexpected information and caused a change in opinions among those who demonstrated better knowledge of the economy. They were also 3.7 percentage points less likely to switch from “No” to “Yes” in this group.

Scoring above the median on the numeracy test also has significant effects on the dynamics of decisions. For example, in groups 2-4, having scored above the median resulted in a 20, 21, and 13 percentage point higher probabilities of switching from “Yes” to “No,” respectively. In groups 2 and 3, having scored above the median also result in a significantly lower probability to switch from “No” to “Yes.” In groups 5-7, having scored above the median matter only in group 6, where they are 14 percentage points less likely to switch from “Yes” to “No,” and 4 percentage points more likely to switch from “No” to “Yes.”

Finally, having scored as a “slow” or a “fast thinker” does not affect, except three cases where the effect was only marginally significant.

Figure 29: Effect of beliefs about job losses on probabilities to switch opinions in groups 1-4

a) Effects on probability to switch from Yes to No



b) Effects on probability to switch from No to Yes

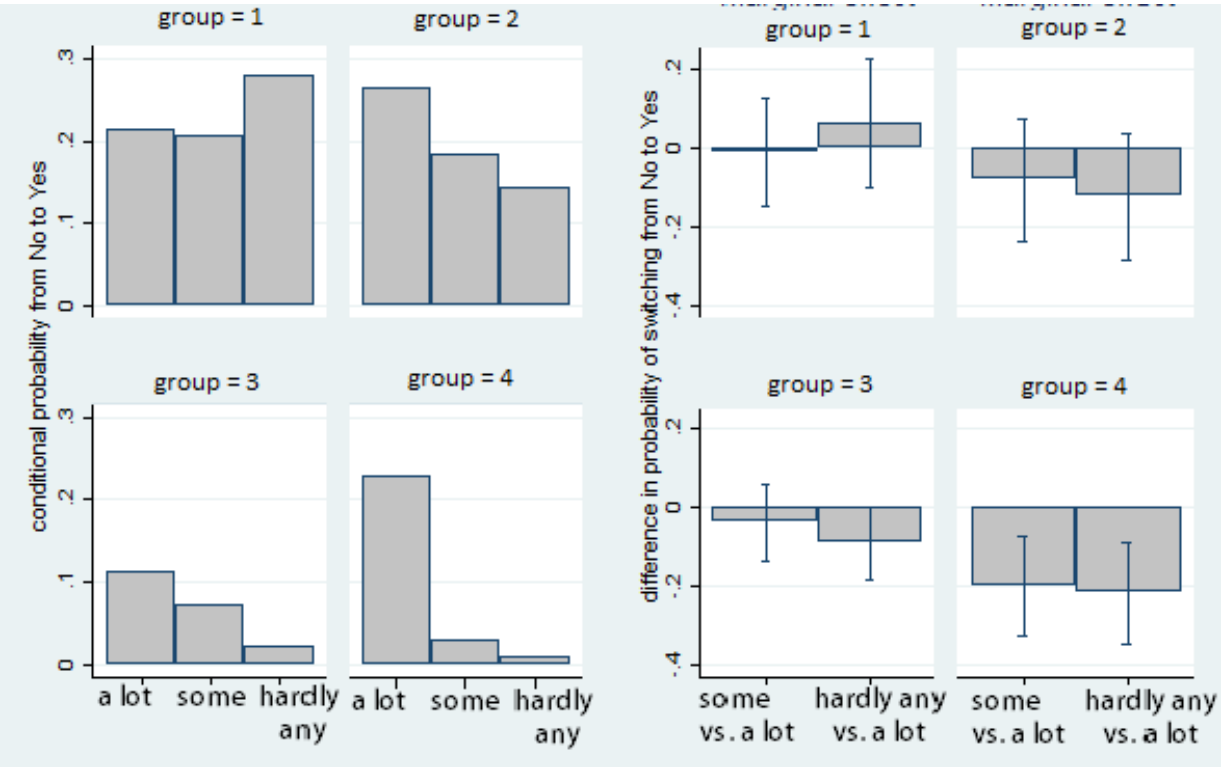
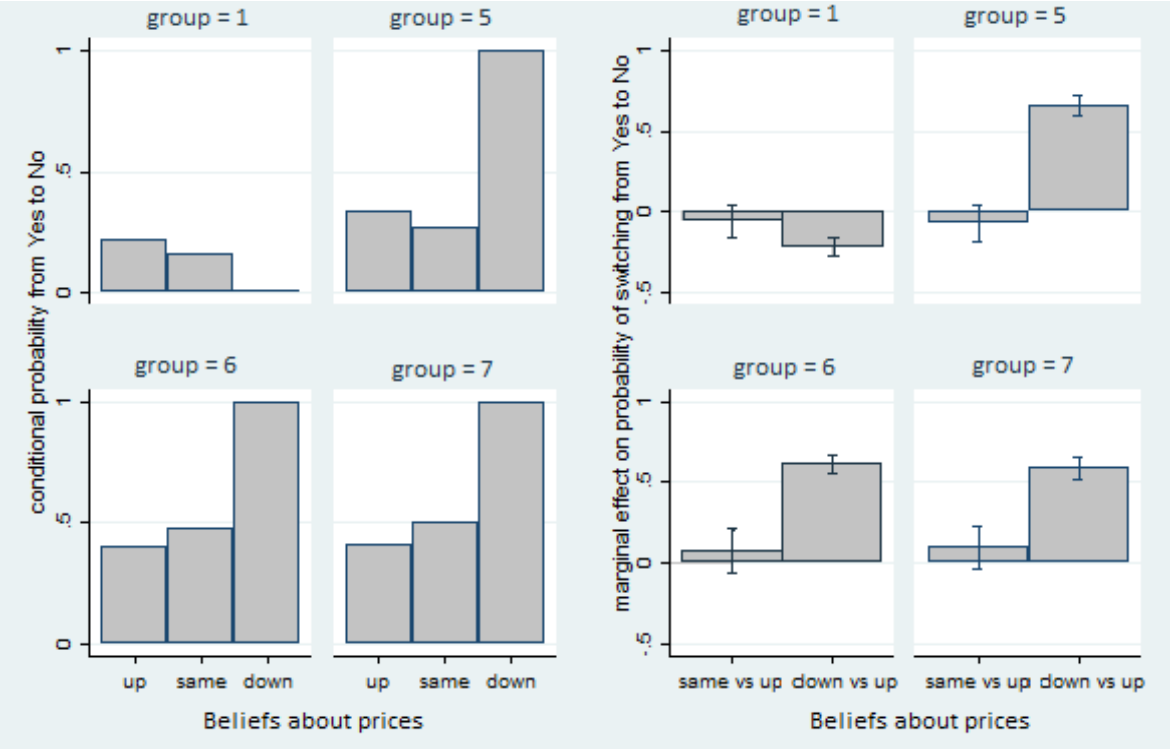
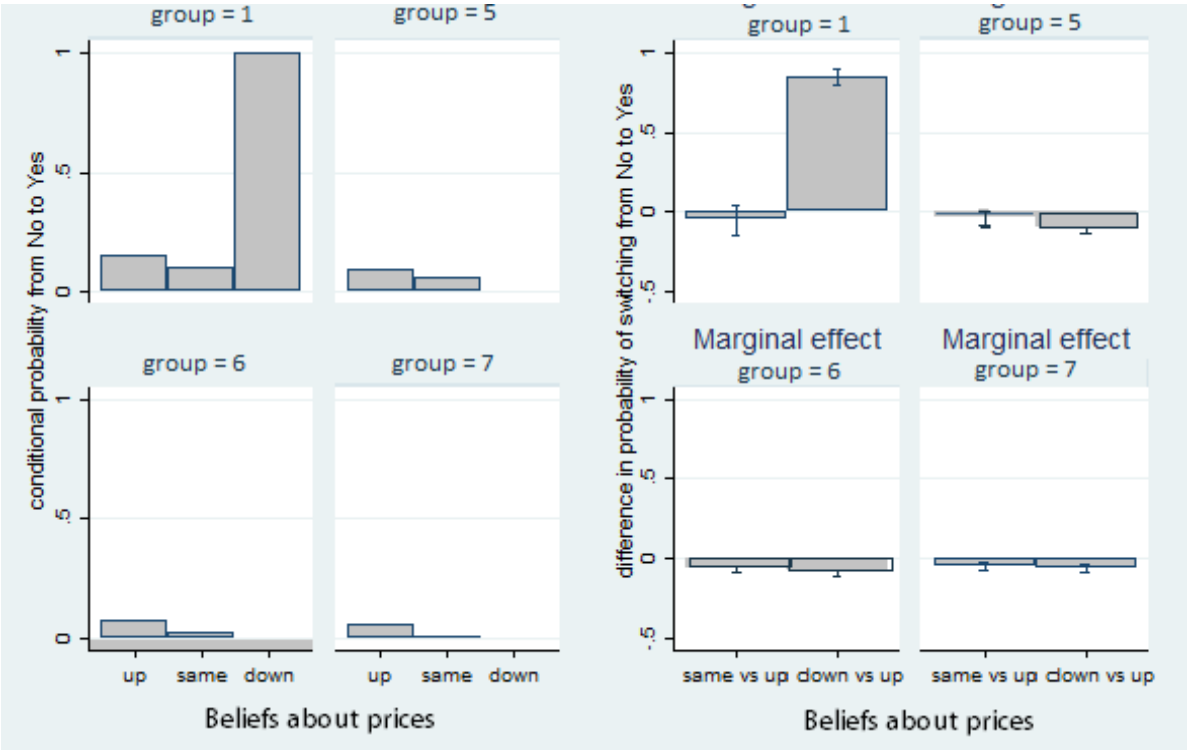


Figure 30: Effect of beliefs about prices on probabilities to switch opinions in groups 1 and 5-7.

a) Effects on probability to switch from Yes to No



b) Effects on probability to switch from No to Yes



Conclusion

With the events of the internet and social media, all democratic governments are confronted with a major challenge to inform their constituents of the relevance of their policies. How to communicate is already a difficult task, and in the context of manipulated and fakes news, the problem has developed into a tremendous challenge for governments.

What to communicate and how to do so to elicit voter preferences in democracy also represent a challenge for economists. Caplan (2007) discussed empirical evidence that voters' beliefs about *economics* are often mistaken. If these mistakes are not systematic, then thanks to the Miracle of Aggregation democracy is still able to produce desirable policies. However, when mistakes are systematic or biased, bad policies can result. Caplan introduced the concepts of rational ignorance (people have no reason to search for the truth as one vote is unlikely to change the results) and rational irrationality (people actively avoiding the truth). According to Caplan, understanding economic biases and false beliefs is therefore important not just for economists, but for everyone who studies politics.

Our study is concerned with the determinants of the demand for economic policies and how the public react to information. Referring to the case of the minimum wage policy in Quebec, we questioned 2,255 participants about their socio-demographics and their policy opinions along with validated incentivized instruments used in experimental economics for eliciting their preferences and beliefs about raising the minimum wage to $15. Opinions about the minimum wage policy were collected twice, before and after an information treatment. The information treatment contained factual information about the current minimum wage and hypothetical scenarios about possible consequences to employment and prices if the minimum wage increases.

To the difference of most political studies, the framing of our messages to elicit respondents' willingness to pay the various costs about the consequences of raising the minimum wage were hypothetical and not necessarily reflecting realistically possible outcomes. This approach avoided challenging respondents' beliefs which following Kaplan (2015) appeared to create a strong rejection by those whose identity is negatively affected by the message, destroying (if not reversing) the effectiveness of the message.

Controlling for multiple factors, we find that the support for increasing the minimum wage in Québec is related to direct benefit on the participants or their family. However, the more robust results concern their initial beliefs about the facts and the consequences of raising the minimum wage.

After the information treatment, opinions in favour of raising the minimum wage decreased from 67% to 44%. The smallest decrease in support occurred after the provision of the factual information alone.

The support for raising the minimum wage decreased as the hypothetical consequences of raising the minimum wage became more costly regarding price and employment. This drop is most prominent among those whose beliefs differed from the hypothetical scenarios that we provided. Respondents appear to be more sensitive to the costs of the policy regarding job losses than regarding prices.

Conditional on the participant's initial choice to support the increase in minimum wage to $15, we observe a good deal of heterogeneity among the participants in the dynamics of their decision before and after information: while many switched from "Yes" to "No," some went from "No" to "Yes." Compared with individuals who believed in large employment losses, believing in some loss or hardly any loss was associated with a higher probability of switching opinions from "Yes" to "No" (by 12.6 and 13.2 percentage points, respectively.

The respondents who turned favourable to raising the minimum wage after the information treatment tended to over-estimate the consequences relative to hypothetical scenarios they were presented.

In investigating the dynamics in decisions by group considered in the information treatment, we focus on the question whether the demand for the higher minimum wage decreases as consequences to increase in employment and prices. We interpret these choice dynamics as expressions of respondents' willingness to pay for the increase in the minimum wage.

We find that scoring above the median on the numeracy test also has significant effects on the dynamics of decisions. For example, in groups 2-4 confronted with hypothetical job losses respectively of 10%, 30%, and 50%, having scored above the median resulted in a 20, 21, and 13 percentage point higher probabilities of switching from "Yes" to "No," respectively. However, in groups 2 and 3, having scored above the median also result in a significantly lower probability to switch from "No" to "Yes." In groups 5-7, confronted with hypothetical price increases of respectively of 5-10%, 15-20%, and 25-30%, having scored above the median matter only in group 6, where they are 14 percentage points less likely to switch from "Yes" to "No," and 4 percentage points more likely to switch from "No" to "Yes."

Empirical studies in economics, including economic experiments, often examine the effects of socio-demographic characteristics on economic decisions. However, though interesting and informative, these effects are of little value to policy-makers, because most of them are policy-invariant. We suggest that socio-demographics strongly correlate with beliefs, and hence pick up their effect when information on beliefs is omitted from analyses by the study design.

In our study, while information about facts is important, information about the consequences of increasing the minimum wage is fundamental. However, the task of going from hypothetical scenarios to credible consequences is not to be minimized. Who should inform people? How should we do it? In this specific case, there is some consensus on the consequences of raising the minimum wage, but this might not be the case in general.

What are the determinants of what is perceived as credible information are yet to be analyzed? It is a difficult task in a world of fake news and fake data or even alternative data. We must

develop a culture of evidence-based supported by science. Here like the solution for many problems, general education, and in this particular case of public policies, economic literacy is a key factor.

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Table 1: Three allocation scenarios

Scenario 1:	Allocation 1: You: 100 tokens = $10.50 Centraide: 0 tokens = $0	Allocation 2: You: 50 tokens = $0.50 Centraide: 50 tokens = $0.50	Allocation 3: You: 0 tokens = $0 Centraide: 100 tokens = $0.53
Scenario 2:	Allocation 1: You: 100 tokens = $1.00 Centraide: 0 tokens = $0	Allocation 2: You: 50 tokens = $0.50 Centraide: 50 tokens = $0.50	Allocation 3: You: 0 tokens = $0 Centraide: 100 tokens = $1.00
Scenario 3:	Allocation 1: You: 100 tokens = $0.53 Centraide: 0 tokens = $0	Allocation 2: You: 50 tokens = $0.50 Centraide: 50 tokens = $0.50	Allocation 3: You: 0 tokens = $0 Centraide: 100 tokens = $10.50

Table 2: Demographic characteristics of survey respondents

Characteristic	Frequency (%)
Age	
18-34	508 (22.53)
35-54	789 (35.00)
55 and older	958 (42.48)
Gender:	
Men	1,023 (45.37)
Women	1,224 (54.28)
Marital status	
Married / Having a common-law spouse	1,303 (57.78)
Single / Never married	634 (28.12)
Divorced / Separated	253 (11.22)
Widowed	65 (2.88)
Born in Canada	2,023 (89.71)
Filled out survey in French	1,903 (84.39)
Education	
0-8 years of education	12 (0.53)
Some high school	64 (2.84)
High school graduate	308 (13.66)
Some postsecondary education (including CEGEP)	192 (8.51)
Postsecondary certificate or diploma (including CEGEP)	630 (27.94)
University degree - Bachelor's degree	634 (28.12)
University degree - Above bachelor's degree	415 (18.40)
Total pre-tax household income	
under 30,000	225 (11.60)
30,000-60,000	541 (26.65)
60,000-90,000	500 (33.58)
90,000-120,000	331 (15.76)
120,000-150,000	166 (8.67)
150,000-200,000	126 (6.57)
over 200,000	50 (2.73)
Employment status	
Employed full-time, over 30 hours a week	1,111 (49.27)
Employed part-time, less than 30 hours a week	146 (6.47)
Self-employed	169 (7.49)
Unemployed, seeking work	40 (1.77)
Homemaker	38 (1.69)
Full-time student	57 (2.53)
Retired	624 (27.67)
Welfare or disability benefit recipient	43 (1.91)
Business owner (sole or partnership)	355 (15.74)
Earns minimum wage	69 (3.06)
Has minimum wage earners in the family	273 (12.11)
Donated to charity in 2016	1,624 (72.02)

Table 3: Sources of information and membership in organizations

Characteristic	Frequency (%)
Obtains news from:	
Television	1,855 (82.26)
Newspapers and magazines (whether printed or online)	1,629 (72.24)
Online blogs and forums	293 (12.99)
Radio (including podcasts)	1,192 (52.86)
Friends and family	787 (34.90)
Online social networks (e.g., Facebook)	916 (40.62)
Books (including textbooks)	456 (20.22)
Political parties	108 (4.79)
Religious leaders	18 (0.80)
Other	22 (0.98)
Membership in organizations	
Political party or organization	123 (5.45)
Labour or trade union	381 (16.90)
Professional, industry, or academic association	382 (16.94)
Religious organization (i.e., church, mosque)	95 (4.21)
Charity, volunteer, or fraternal organization	217 (9.62)
Interest- or cause-based group (e.g., an environmental campaigning organization)	97 (4.30)
Other	62 (2.75)
None	1,270 (56.32)

Table 4: Estimated probit model for decision to raise the minimum wage

Dependent variable: Yes to raise the min. wage	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Minimum wage home (self or family member)	0.192**	0.191**	0.198**	0.200**	0.243**	-0.024	-0.009	0.025	0.051	0.050
	(0.087)	(0.087)	(0.088)	(0.090)	(0.108)	(0.116)	(0.116)	(0.118)	(0.119)	(0.121)
Unemployed	0.006	-0.005	-0.075	-0.080	-0.149	-0.250	-0.219	-0.171	-0.150	-0.110
	(0.208)	(0.208)	(0.212)	(0.212)	(0.251)	(0.258)	(0.258)	(0.256)	(0.258)	(0.266)
Business owner	-0.103	-0.098	-0.067	-0.057	-0.056	-0.046	-0.068	-0.037	-0.028	-0.047
	(0.075)	(0.075)	(0.076)	(0.077)	(0.095)	(0.097)	(0.097)	(0.098)	(0.098)	(0.100)
Union member	0.092	0.105	0.092	0.111	0.122	0.128	0.133	0.104	0.112	0.136
	(0.074)	(0.074)	(0.075)	(0.076)	(0.093)	(0.094)	(0.094)	(0.096)	(0.096)	(0.100)
Social preferences (base: selfish)										
- altruistic		0.261***	0.188*	0.163	0.035	0.070	0.068	0.044	0.041	0.006
		(0.098)	(0.099)	(0.100)	(0.124)	(0.125)	(0.126)	(0.127)	(0.128)	(0.130)
- egalitarian		0.132	0.092	0.071	0.003	-0.007	-0.018	-0.038	-0.049	-0.100
		(0.081)	(0.082)	(0.083)	(0.102)	(0.103)	(0.104)	(0.105)	(0.105)	(0.107)
- utilitarian		-0.025	-0.059	-0.073	-0.058	-0.039	-0.017	-0.034	0.049	0.038
		(0.072)	(0.073)	(0.074)	(0.090)	(0.092)	(0.095)	(0.096)	(0.139)	(0.140)
- cannot be determined		0.147	0.134	0.128	0.145	0.123	0.086	0.054	-0.047	-0.044
		(0.108)	(0.109)	(0.110)	(0.133)	(0.136)	(0.138)	(0.139)	(0.096)	(0.097)
Supports income redistribution			0.311***	0.301***	0.246***	0.251***	0.252***	0.233***	0.227***	0.194**
			(0.060)	(0.061)	(0.075)	(0.076)	(0.076)	(0.077)	(0.078)	(0.079)
Has empathy for the unemployed			0.325***	0.331***	0.413***	0.423***	0.437***	0.409***	0.407***	0.374***
			(0.057)	(0.057)	(0.070)	(0.071)	(0.071)	(0.072)	(0.073)	(0.075)
Believes that effort drives success			-0.229***	-0.222***	-0.330***	-0.290***	-0.287***	-0.276***	-0.277***	-0.290***
			(0.070)	(0.071)	(0.087)	(0.089)	(0.089)	(0.090)	(0.091)	(0.093)

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(Table 4 continued)

Dependent variable: Yes to raise the min. wage	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Beliefs about amount of min. wage (base: correct)										
- underestimated				0.156	0.410	0.397	0.356	0.343	0.308	0.260
				(0.215)	(0.251)	(0.258)	(0.266)	(0.267)	(0.270)	(0.274)
- overestimated				0.267***	0.194***	0.202***	0.191**	0.201**	0.194**	0.173**
				(0.058)	(0.071)	(0.072)	(0.084)	(0.085)	(0.085)	(0.087)
- did not know				0.293	0.113	0.085	0.034	-0.007	-0.023	-0.103
				(0.193)	(0.240)	(0.247)	(0.253)	(0.255)	(0.255)	(0.258)
Beliefs about min. wage workers (base: <15%)										
- 15-25%				0.046	-0.004	-0.012	-0.020	-0.023	-0.024	-0.040
				(0.084)	(0.102)	(0.104)	(0.105)	(0.107)	(0.107)	(0.108)
- >25%				0.221**	0.193*	0.137	0.092	0.089	0.093	0.066
				(0.088)	(0.109)	(0.111)	(0.113)	(0.115)	(0.115)	(0.117)
- did not know				0.186*	0.058	0.038	0.017	0.022	0.032	-0.007
				(0.099)	(0.120)	(0.122)	(0.123)	(0.125)	(0.125)	(0.128)
Beliefs about min. wage vs. average wage (base: correct)										
- underestimated				-0.036	-0.034	-0.055	-0.107	-0.101	-0.099	-0.117
				(0.074)	(0.089)	(0.090)	(0.100)	(0.101)	(0.101)	(0.102)
- overestimated				-0.050	0.016	-0.012	-0.021	-0.038	-0.048	-0.051
				(0.082)	(0.101)	(0.103)	(0.111)	(0.112)	(0.112)	(0.113)
- did not know				0.084	0.055	0.013	-0.028	-0.031	-0.031	-0.062
				(0.083)	(0.102)	(0.103)	(0.113)	(0.114)	(0.115)	(0.116)

(continued on next page)

(Table 4 continued)

Dependent variable: Yes to raise the min. wage	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Beliefs about job losses (base: big losses)										
- some losses					1.003***	1.069***	1.111***	1.108***	1.110***	1.082***
					(0.116)	(0.121)	(0.123)	(0.124)	(0.125)	(0.127)
- hardly any					1.750***	1.792***	1.839***	1.820***	1.835***	1.808***
					(0.131)	(0.135)	(0.138)	(0.139)	(0.140)	(0.142)
Beliefs about jobs for the unemployed (base: more jobs)										
- less jobs					-1.080***	-1.055***	-1.040***	-1.037***	-1.040***	-1.062***
					(0.096)	(0.098)	(0.099)	(0.100)	(0.100)	(0.102)
- no effect					-0.448***	-0.408***	-0.389***	-0.382***	-0.386***	-0.406***
					(0.090)	(0.092)	(0.093)	(0.093)	(0.094)	(0.095)
Beliefs about prices (base: increase)										
- same					1.260***	1.210***	1.201***	1.205***	1.212***	1.223***
					(0.118)	(0.119)	(0.119)	(0.120)	(0.121)	(0.122)
- down					0.783*	0.505	0.476	0.494	0.509	0.444
					(0.440)	(0.431)	(0.445)	(0.445)	(0.448)	(0.455)
Beliefs about other wages (base: will increase)										
- no change					-0.149*	-0.067	-0.079	-0.079	-0.071	-0.082
					(0.080)	(0.082)	(0.082)	(0.083)	(0.083)	(0.084)
- drop					-0.775***	-0.750***	-0.769***	-0.729***	-0.738***	-0.767***
					(0.214)	(0.222)	(0.224)	(0.226)	(0.227)	(0.231)

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(Table 4 continued)

Dependent variable: Yes to raise the min. wage	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Expects family to benefit						0.852***	0.799***	0.777***	0.779***	0.810***
						(0.117)	(0.119)	(0.119)	(0.119)	(0.122)
Score on Quebec economy (base: < median)										
- above median							-0.012	-0.019	-0.026	-0.067
							(0.094)	(0.095)	(0.096)	(0.098)
Score on economic literacy (base: < median)										
- above median							-0.166**	-0.145**	-0.139*	-0.128*
							(0.073)	(0.074)	(0.074)	(0.076)
Score on numeracy (base: < median)										
- above median							-0.178*	-0.161*	-0.157*	-0.168*
							(0.094)	(0.094)	(0.095)	(0.097)
CRT type (base: 2 or 3 other responses)										
- slow (2 or 3 slow answers)							-0.140	-0.136	-0.136	-0.127
							(0.127)	(0.128)	(0.129)	(0.132)
- fast (2 or 3 fast answers)							-0.224**	-0.222**	-0.216**	-0.203*
							(0.106)	(0.107)	(0.108)	(0.110)
Controlling for political views	No	No	No	No	No	No	No	Yes	Yes	Yes
Sources of news: (base: TV)										
- radio									-0.110	-0.117
									(0.073)	(0.074)
- Internet									0.161	0.153
									(0.109)	(0.111)

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(Table 4 continued)

Dependent variable: Yes to raise the min. wage	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
- social circles									0.049	0.052
									(0.075)	(0.078)
- books									0.102	0.041
									(0.093)	(0.096)
- none									0.391	0.448
									(0.389)	(0.397)
Gender (base: men)										
- women										0.115
										(0.076)
Status in Canada (base: born in Canada)										
- immigrant										0.141
										(0.125)
Age group (base: under 35)										
- age 35-54										0.219**
										(0.096)
- age 55+										0.275***
										(0.102)
Education (base: less than high school)										
- finished high school										-0.182
										(0.231)
- finished CEGEP										-0.028
										(0.219)
- finished university										0.123
										(0.222)

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(Table 4 continued)

Dependent variable: Yes to raise the min. wage	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Income group (base: < 30K)										
- 30K-60K										-0.089
										(0.108)
- 60K-90K										0.019
										(0.109)
- 90K-120K										-0.105
										(0.125)
- 120K-150K										-0.031
										(0.152)
- 150K-200K										-0.238
										(0.172)
- over 200K										-0.376
										(0.238)
Constant	0.432***	0.367***	0.189**	-0.050	-0.531***	-0.757***	-0.346	-0.415	-0.512*	-0.581*
	(0.034)	(0.057)	(0.088)	(0.116)	(0.188)	(0.196)	(0.247)	(0.256)	(0.264)	(0.343)
Number of observations	2,255	2,255	2,255	2,255	2,255	2,255	2,255	2,255	2,255	2,255
Log likelihood	-1,418	-1,411	-1,373	-1,353	-889.1	-859.8	-852.6	-838.4	-834.5	-823.8
χ^2	8.206	21.13	97.47	137.8	1,066	1,125	1,139	1,167	1,175	1,197
p-value	0.0843	0.0068	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001

Note: Standard errors in parentheses; stars indicate statistical significance: *** ≤1%, **≤5%, *≤10%.

Table 5: Estimated treatment effects of group 1 (facts) to support a raise in the minimum wage (using a linear probability regression)

a) Testing the effect of information about the amount of minimum wage

After the information treatment, β_1 (base: before)	0.066 (0.046)
Beliefs about amount of minimum wage (base: correct beliefs)[1]	
- overestimated min wage, β_2	0.127 (0.092)
After the information treatment x Beliefs about amount of minimum wage	
- overestimated amount minimum wage, β_3	-0.154** (0.063)
Constant, β_0	0.607*** (0.063)
Number of observations	212

Note: 1. Due to the small number of observations with responses "underestimated" and "I don't know", these observations were dropped.
Robust standard errors in parentheses; stars indicate statistical significance: *** ≤1%, **≤5%, *≤10%.

b) Testing the effect of information about relative minimum wage

After the information treatment, β_1 (base: before)	0.066 (0.046)
Beliefs about minimum wage vs. average wage (base: correct beliefs)	
- overestimated relative min wage, β_2	0.171 (0.103)
- underestimated relative min wage, β_4	0.103 (0.104)
- did not know, β_6	0.335*** (0.086)
After the information treatment x Beliefs about minimum wage vs. average wage	
- underestimated relative min wage, β_3	-0.162** (0.071)
- overestimated relative min wage, β_5	-0.177** (0.077)
- did not know, β_7	-0.301** (0.114)
Constant, β_0	0.607*** (0.064)
Number of observations	264

Robust standard errors in parentheses; stars indicate statistical significance: *** ≤1%, **≤5%, *≤10%.

c) Testing the effect of information about the proportion of workers

After the information treatment, β_1 (base: before)	0.125 (0.121)
Beliefs about the proportion of workers (base: <15%)	
- 15%-25%, β_2	-0.032 (0.202)
- >25%, β_4	0.018 (0.200)
- did not know, β_6	0.375** (0.177)
After the information treatment x Beliefs about the proportion of workers (base: <15%)	
- 15%-25%, β_3	-0.088 (0.138)
- >25%, β_5	-0.054 (0.141)
- did not know, β_7	-0.125 (0.121)
Constant, β_0	0.625*** (0.177)
Number of observations	144

Robust standard errors in parentheses; stars indicate statistical significance: *** ≤1%, **≤5%, *≤10%.

Table 6: Estimated effects of information about employment losses by belief using linear probability regression

Believing in large losses:	
- in groups 2-4, before information treatment (β_1)	0.061 (0.072)
- in group 1, after information treatment (β_2)	0.135** (0.056)
- in groups 2-4, after information treatment (β_3)	-0.019 (0.074)
Believing in some loss	
- in group 1, before information treatment (β_4)	0.471*** (0.073)
- x groups 2-4, before information treatment (β_5)	-0.118 (0.086)
- x group 1, after information treatment (β_6)	-0.207*** (0.062)
- x groups 2-4, after information treatment (β_7)	-0.153* (0.083)
Believing in hardly any loss	
- in group 1, before information treatment (β_8)	0.765*** (0.065)
- x groups 2-4, before information treatment (β_9)	-0.072 (0.077)
- x group 1, after information treatment (β_{10})	-0.258*** (0.064)
- x groups 2-4, after information treatment (β_{11})	-0.302*** (0.085)
Constant (β_0)	0.162*** (0.061)
Number of observations	2,606

Note: Standard errors in parentheses. Stars indicate statistical significance: *** ≤1%, **≤5%, *≤10%.

Table 7: Estimated effects of information about prices by belief using linear probability regression

Believing in price increase:	
- in groups 5-7, before information treatment (β_1)	-0.045 (0.038)
- in group 1, after information treatment (β_2)	-0.049** (0.022)
- in groups 5-7, after information treatment (β_3)	-0.136*** (0.029)
Believing in no change in prices	
- in group 1, before information treatment (β_4)	0.375*** (0.037)
- x group 1, after information treatment (β_5)	-0.081* (0.046)
- x groups 5-7, before information treatment (β_6)	0.036 (0.043)
- x groups 5-7, after information treatment (β_7)	-0.124** (0.059)
Constant (β_0)	0.602*** (0.033)
Number of observations	2,508

Note: Standard errors in parentheses. Stars indicate statistical significance: *** ≤1%, **≤5%, *≤10%.

Table 8: Estimates of the bivariate probit model

Variables	"Yes" *before* info treatment	"Yes" *after* info treatment
group = 2	-0.190 (0.126)	-0.269*** (0.102)
group = 3	-0.013 (0.135)	-0.737*** (0.106)
group = 4	-0.044 (0.129)	-1.042*** (0.110)
group = 5	-0.147 (0.134)	-0.428*** (0.104)
group = 6	-0.141 (0.131)	-0.679*** (0.108)
group = 7	-0.081 (0.130)	-0.674*** (0.106)
Has a minimum wage earner in family	0.083 (0.122)	-0.047 (0.092)
Unemployed	-0.058 (0.235)	0.024 (0.225)
Business owner	-0.038 (0.096)	-0.013 (0.077)
Union member	0.135 (0.104)	0.042 (0.080)
Social preferences (base: selfish)		
- altruistic	0.065 (0.121)	0.054 (0.099)
- egalitarian	-0.116 (0.105)	-0.049 (0.084)
- utilitarian	-0.043 (0.094)	0.038 (0.077)
- cannot be determined	0.042 (0.133)	-0.046 (0.112)
Supports income redistribution	0.205*** (0.076)	0.104 (0.064)
Has empathy for the unemployed	0.327*** (0.071)	0.206*** (0.060)
Believes that effort drives success	-0.292*** (0.093)	-0.003 (0.071)
Beliefs about amount of min. wage (base: correct)		
- underestimated	0.256 (0.252)	-0.002 (0.237)
- overestimated	0.195** (0.082)	-0.084 (0.069)
- did not know	0.005 (0.246)	-0.209 (0.187)
Beliefs about min. wage workers (base: <15%)		
- 15-25%	-0.069 (0.100)	-0.064 (0.085)
- >25%	0.019 (0.110)	0.010 (0.091)
- did not know	-0.073 (0.116)	-0.045 (0.099)
Beliefs about relative min. wage (base: correct)		
- underestimated	-0.089 (0.100)	-0.122 (0.083)
- overestimated	-0.051 (0.107)	-0.082 (0.089)
- did not know	-0.032 (0.108)	-0.148* (0.089)
Beliefs about job losses (base: big losses)		
- some losses	1.073*** (0.116)	0.121 (0.101)
- hardly any	1.729*** (0.131)	0.290*** (0.110)
Beliefs about prices (base: will increase)		
- will be the same	1.140*** (0.112)	0.403*** (0.068)
- will decrease	0.268 (0.576)	-0.388 (0.254)
Beliefs about the unemployed (base: more jobs)		
- less jobs	-1.065*** (0.100)	-0.337*** (0.084)
- no effect	-0.408*** (0.092)	-0.017 (0.069)

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(Table 8 continued)

Variables	"Yes" *before* info treatment	"Yes" *after* info treatment
Beliefs about other wages (base: will increase)		
- no change	-0.084 (0.082)	-0.023 (0.066)
- will decrease	-0.724*** (0.244)	-0.251 (0.197)
Expects family to benefit	0.757*** (0.124)	0.270*** (0.083)
Score on Quebec economy (base: < median)		
- above median	-0.045 (0.092)	-0.026 (0.078)
Score on economic literacy (base: < median)		
- above median	-0.124* (0.073)	-0.047 (0.060)
Score on numeracy (base: < median)		
- above median	-0.123 (0.095)	-0.192** (0.075)
CRT type (base: 2 or 3 other responses)		
- fast (2 or 3 fast answers)	-0.171 (0.107)	-0.007 (0.087)
- slow (2 or 3 slow answers)	-0.079 (0.125)	0.005 (0.105)
Controlling for political views	Yes	Yes
Controlling for sources of news	Yes	Yes
Controlling for demographics	Yes	Yes
Constant	-0.469 (0.357)	0.124 (0.278)
Estimate of ρ		0.664*** (0.032)
Number of observations		2,255
Log likelihood		-2,047
χ^2		1,027
p-value		<0.0001

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 9: Marginal effects for the bivariate probit model estimated on the pooled data

Variables	Average marginal effect (st. err.)	
	probability of changing response *from Yes to No*	probability of changing response *from No to Yes*
Expects family to benefit	-0.025 (0.031)	-0.021 (0.018)
Believes in redistribution	-0.016 (0.024)	0.001 (0.013)
Believes in effort	-0.032 (0.026)	0.023** (0.013)
Beliefs about job losses:		
- some loss vs. a lot	0.126*** (0.039)	-0.092*** (0.029)
- hardly any loss vs. a lot	0.132*** (0.044)	-0.126*** (0.031)
Beliefs about prices:		
- same vs. going up	-0.041 (0.026)	-0.036** (0.015)
- down vs. going up	0.188 (0.129)	-0.082* (0.045)
Above median score on QC economy	0.005 (0.028)	-0.001 (0.015)
At least median score on econ. literacy	0.004 (0.022)	0.002 (0.012)
At least median score on numeracy	0.059** (0.028)	-0.028 (0.017)
CRT test:		
- slow vs. other	-0.011 (0.038)	0.008 (0.019)
- fast vs. other	-0.017 (0.032)	0.015 (0.017)

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 10: Estimates of the bivariate model for groups 1, 2, 3, and 4

Variables	"Yes" *before* info treatment	"Yes" *after* info treatment
group = 2	-0.131 (0.127)	0.035 (0.452)
group = 3	0.062 (0.139)	0.007 (0.496)
group = 4	0.061 (0.132)	1.067** (0.476)
Minimum wage home (self or has family member)	0.248 (0.159)	0.080 (0.239)
x group = 2		0.043 (0.310)
x group = 3		0.134 (0.312)
x group = 4		-0.304 (0.343)
- some losses	1.001*** (0.150)	0.461** (0.222)
x group = 2		-0.245 (0.319)
x group = 3		-0.169 (0.321)
x group = 4		-1.069*** (0.319)
- hardly any	1.675*** (0.168)	1.048*** (0.242)
x group = 2		-0.605* (0.335)
x group = 3		-0.861** (0.336)
x group = 4		-1.633*** (0.337)
Supports income redistribution	0.249** (0.102)	0.179 (0.159)
x group = 2		0.115 (0.216)
x group = 3		-0.238 (0.219)
x group = 4		-0.204 (0.221)
Has empathy for the unemployed	0.388*** (0.094)	0.441*** (0.152)
x group = 2		-0.133 (0.203)
x group = 3		-0.259 (0.212)
x group = 4		-0.646*** (0.215)
Believes that effort drives success	-0.455*** (0.125)	-0.057 (0.168)
x group = 2		0.078 (0.233)
x group = 3		0.043 (0.250)
x group = 4		0.386 (0.255)
Score on Quebec economy (base: < median)		
- above median	-0.077 (0.124)	0.243 (0.167)
x group = 2		-0.039 (0.204)
x group = 3		-0.235 (0.212)
x group = 4		-0.727*** (0.218)
Score on economic literacy (base: < median)		
- above median	-0.158 (0.099)	-0.277* (0.151)
x group = 2		0.275 (0.204)
x group = 3		0.080 (0.207)
x group = 4		0.270 (0.219)

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(Table 10 continued)

Variables	"Yes" *before* info treatment	"Yes" *after* info treatment
Score on numeracy (base: < median)		
- above median	-0.106 (0.125)	-0.166 (0.196)
x group = 2		-0.540** (0.261)
x group = 3		-0.400 (0.264)
x group = 4		-0.221 (0.274)
CRT type (base: 2 or 3 other responses)		
- slow (2 or 3 slow answers)	-0.204 (0.167)	-0.110 (0.266)
x group = 2		0.397 (0.335)
x group = 3		0.310 (0.368)
x group = 4		-0.491 (0.390)
- fast (2 or 3 fast answers)	-0.130 (0.143)	-0.085 (0.224)
x group = 2		0.297 (0.286)
x group = 3		0.357 (0.310)
x group = 4		-0.362 (0.328)
Unemployed	-0.234 (0.308)	-0.162 (0.271)
Business owner	-0.176 (0.129)	0.019 (0.107)
Union member	0.097 (0.138)	-0.124 (0.115)
Social preferences (base: selfish)		
- altruistic	0.123 (0.161)	-0.122 (0.137)
- egalitarian	-0.004 (0.133)	-0.173 (0.113)
- utilitarian	0.064 (0.126)	-0.104 (0.106)
- cannot be determined	0.274 (0.180)	-0.203 (0.159)
Beliefs about amount of min. wage (base: correct)		
- underestimated	0.668* (0.392)	-0.007 (0.366)
- overestimated	0.194* (0.108)	-0.093 (0.096)
- did not know	0.095 (0.319)	-0.268 (0.250)
Beliefs about min. wage workers (base: <15%)		
- 15-25%	-0.175 (0.132)	-0.050 (0.117)
- >25%	-0.107 (0.148)	0.144 (0.128)
- did not know	-0.138 (0.151)	0.150 (0.138)
Beliefs about relative min. wage (base: correct)		
- underestimated	-0.191 (0.129)	-0.195* (0.117)
- overestimated	-0.032 (0.141)	-0.080 (0.123)
- did not know	-0.113 (0.140)	-0.239* (0.124)
Beliefs about the unemployed (base: more jobs)		
- less jobs	-1.221*** (0.137)	-0.284** (0.114)
- no effect	-0.533*** (0.125)	-0.015 (0.099)
Beliefs about prices (base: will increase)		
- will be the same	1.019*** (0.135)	0.517*** (0.094)
- will decrease	-0.140 (0.483)	0.441 (0.306)

(continued on next page)

(Table 10 continued)

Variables	"Yes" *before* info treatment	"Yes" *after* info treatment
Beliefs about other wages (base: will increase)		
- no change	-0.075 (0.109)	0.024 (0.095)
- will decrease	-0.391 (0.309)	-0.672** (0.310)
Expects family to benefit	0.760*** (0.159)	0.292** (0.118)
Controlling for political views	Yes	Yes
Controlling for sources of news	Yes	Yes
Controlling for demographics	Yes	Yes
Constant	-0.818* (0.446)	-0.792* (0.463)
Estimate of ρ	0.721*** (0.041)	
Number of observations		1,303
Log likelihood		-1,092
χ^2		786.0
p-value		<0.0001

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 11: Estimates of the bivariate model for groups 1, 5, 6, and 7

Variables	"Yes" *before* info treatment	"Yes" *after* info treatment
group = 5	-0.137 (0.137)	-0.788** (0.402)
group = 6	-0.160 (0.141)	-0.529 (0.393)
group = 7	-0.039 (0.137)	-0.167 (0.420)
Minimum wage home (self or has family member)	-0.135 (0.149)	-0.052 (0.206)
x group = 5		-0.119 (0.273)
x group = 6		-0.107 (0.286)
x group = 7		-0.305 (0.319)
Beliefs about prices (base: will go up)		
- will remain the same	1.350*** (0.164)	0.679*** (0.194)
x group = 5		-0.016 (0.253)
x group = 6		-0.454* (0.261)
x group = 7		-0.531** (0.254)
- will go down	1.571** (0.761)	4.805*** (0.461)
x group = 5		-11.710*** (0.610)
x group = 6		-10.451*** (0.583)
x group = 7		-10.452*** (0.561)
Supports income redistribution	0.259** (0.102)	0.180 (0.151)
x group = 5		0.441** (0.219)
x group = 6		-0.644*** (0.210)
x group = 7		-0.026 (0.206)
Has empathy for the unemployed	0.302*** (0.096)	0.427*** (0.141)
x group = 5		0.006 (0.200)
x group = 6		-0.185 (0.199)
x group = 7		-0.263 (0.194)
Believes that effort drives success	-0.219* (0.120)	0.028 (0.164)
x group = 5		0.074 (0.247)
x group = 6		0.052 (0.238)
x group = 7		-0.517** (0.236)
Score on Quebec economy (base: < median)		
- above median	0.020 (0.124)	0.267* (0.159)
x group = 5		-0.505** (0.201)
x group = 6		-0.010 (0.193)
x group = 7		-0.472** (0.198)
Score on economic literacy (base: < median)		
- above median	-0.187* (0.100)	-0.238 (0.146)
x group = 5		0.044 (0.206)
x group = 6		0.316 (0.196)
x group = 7		0.334* (0.198)

(continued on next page)

(Table 11 continued)

Variables	"Yes" *before* info treatment	"Yes" *after* info treatment
Score on numeracy (base: < median)		
- above median	-0.238* (0.127)	-0.207 (0.186)
x group = 5		0.289 (0.251)
x group = 6		0.478* (0.255)
x group = 7		0.096 (0.254)
CRT type (base: 2 or 3 other responses)		
- fast (2 or 3 fast answers)	0.099 (0.168)	-0.071 (0.249)
x group = 5		0.103 (0.359)
x group = 6		-0.055 (0.333)
x group = 7		0.470 (0.353)
- slow (2 or 3 slow answers)	-0.260* (0.143)	-0.158 (0.208)
x group = 5		0.097 (0.288)
x group = 6		0.013 (0.273)
x group = 7		0.289 (0.308)
Unemployed	0.218 (0.282)	0.184 (0.257)
Business owner	0.085 (0.128)	0.025 (0.106)
Union member	0.127 (0.138)	0.087 (0.111)
Social preferences (base: selfish)		
- altruistic	0.144 (0.166)	0.176 (0.139)
- egalitarian	-0.076 (0.147)	0.060 (0.116)
- utilitarian	-0.110 (0.129)	0.160 (0.111)
- cannot be determined	-0.023 (0.175)	0.043 (0.149)
Beliefs about amount of min. wage (base: correct)		
- underestimated	-0.033 (0.313)	-0.005 (0.294)
- overestimated	0.149 (0.112)	-0.099 (0.094)
- did not know	-0.152 (0.402)	0.119 (0.278)
Beliefs about proportion of workers (base: <15%)		
- 15-25%	0.024 (0.138)	-0.080 (0.119)
- >25%	0.152 (0.147)	-0.068 (0.126)
- did not know	-0.008 (0.159)	-0.157 (0.140)
Beliefs about min. wage vs. average wage (base: correct)		
- underestimated	-0.031 (0.139)	-0.106 (0.116)
- overestimated	0.029 (0.143)	-0.100 (0.124)
- did not know	0.007 (0.149)	-0.125 (0.122)
Beliefs about loss of jobs (base: a lot of loss)		
- some loss	1.358*** (0.172)	0.259* (0.137)
- hardly any loss	1.993*** (0.195)	0.498*** (0.152)

(continued on next page)

(Table 11 continued)

Variables	"Yes" *before* info treatment	"Yes" *after* info treatment
Beliefs about jobs for the unemployed (base: more jobs)		
- fewer jobs	-0.989*** (0.135)	-0.434*** (0.116)
- will be the same	-0.206* (0.120)	0.028 (0.095)
Beliefs about other wages (base: will increase)		
- no change	-0.016 (0.107)	-0.031 (0.091)
- will decrease	-1.095*** (0.320)	-0.085 (0.281)
Expects family to benefit	0.921*** (0.163)	0.358*** (0.115)
Controlling for political preferences	Yes	Yes
Controlling for sources of news	Yes	Yes
Controlling for demographics	Yes	Yes
Constant	-0.659 (0.476)	-0.170 (0.434)
Estimate of ρ	0.826*** (0.030)	
Number of observations		1,266
Log likelihood		-1,039
χ^2		4,489
p-value		<0.0001

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 12: Marginal effects of selected variables on probabilities to change opinion

Variables	Average marginal effect	
	probability of switching from *Yes to No*	probability of switching from *No to Yes*
Prefers redistribution (yes vs. no)		
-- group = 2	-0.072 (0.057)	0.044 (0.040)
-- group = 3	0.056 (0.064)	-0.024 (0.022)
-- group = 4	0.032 (0.057)	-0.011 (0.015)
-- group = 5	-0.203*** (0.068)	0.067*** (0.022)
-- group = 6	0.217*** (0.056)	-0.094*** (0.031)
-- group = 7	-0.023 (0.063)	0.001 (0.017)
Has empathy for the unemployed (yes vs. no)		
-- group = 2	-0.058 (0.050)	0.029 (0.039)
-- group = 3	-0.024 (0.062)	-0.002 (0.019)
-- group = 4	0.108* (0.057)	-0.030** (0.014)
-- group = 5	-0.115* (0.057)	0.042 (0.026)
-- group = 6	-0.050 (0.058)	0.011 (0.020)
-- group = 7	-0.022 (0.058)	-0.001 (0.016)
Believes in effort (yes vs. no)		
-- group = 2	-0.063 (0.062)	0.065 (0.041)
-- group = 3	-0.046 (0.075)	0.024 (0.019)
-- group = 4	-0.142** (0.060)	0.034*** (0.012)
-- group = 5	-0.071 (0.071)	0.036 (0.026)
-- group = 6	-0.063 (0.070)	0.024 (0.020)
-- group = 7	0.163** (0.067)	-0.047 (0.030)
Beliefs about losses of employment		
• some loss (vs. a lot)		
-- group = 2	0.088 (0.081)	-0.080 (0.080)
-- group = 3	0.054 (0.104)	-0.039 (0.049)
-- group = 4	0.394*** (0.083)	-0.199*** (0.065)
-- group = 5	0.181*** (0.044)	-0.128*** (0.040)
-- group = 6	0.173*** (0.049)	-0.077*** (0.029)
-- group = 7	0.183*** (0.053)	-0.079*** (0.028)
• hardly any loss (vs. a lot)		
-- group = 2	0.091 (0.085)	-0.121 (0.082)
-- group = 3	0.167 (0.107)	-0.091* (0.047)
-- group = 4	0.441*** (0.088)	-0.217*** (0.066)
-- group = 5	0.187*** (0.050)	-0.158*** (0.043)
-- group = 6	0.170*** (0.055)	-0.097*** (0.031)
-- group = 7	0.174*** (0.059)	-0.096***(0.030)

(continued on next page)

(Table 12 continued)

Variables	Average marginal effect	
	probability of switching from *Yes to No*	probability of switching from *No to Yes*
Beliefs about prices		
• will stay the same (vs. up)		
-- group = 2	-0.063** (0.032)	-0.011 (0.030)
-- group = 3	-0.098*** (0.036)	-0.005 (0.013)
-- group = 4	-0.093*** (0.032)	0.002 (0.009)
-- group = 5	-0.069 (0.059)	-0.033 (0.028)
-- group = 6	0.077 (0.071)	-0.056*** (0.016)
-- group = 7	0.099 (0.066)	-0.048*** (0.013)
• will go down (vs. up)		
-- group = 2	-0.157 (0.104)	0.173 (0.167)
-- group = 3	-0.197 (0.148)	0.095 (0.107)
-- group = 4	-0.172 (0.142)	0.060 (0.068)
-- group = 5	0.662*** (0.034)	-0.090*** (0.020)
-- group = 6	0.603*** (0.034)	-0.077*** (0.016)
-- group = 7	0.593*** (0.035)	-0.057*** (0.014)
Score on QC economy test (≥ median vs. <median)		
-- group = 2	-0.082 (0.057)	0.066 (0.044)
-- group = 3	-0.023 (0.065)	0.006 (0.020)
-- group = 4	0.157*** (0.058)	-0.037** (0.017)
-- group = 5	0.089*** (0.057)	-0.044 (0.030)
-- group = 6	-0.099*** (0.063)	0.031 (0.020)
-- group = 7	0.086*** (0.061)	-0.024 (0.019)
Score on economic literacy test (≥ median vs. <median)		
-- group = 2	-0.019 (0.051)	0.022 (0.040)
-- group = 3	0.060 (0.060)	-0.014 (0.019)
-- group = 4	-0.012 (0.057)	0.005 (0.014)
-- group = 5	0.042 (0.055)	-0.014 (0.027)
-- group = 6	-0.058 (0.056)	0.023 (0.019)
-- group = 7	-0.067 (0.059)	0.022 (0.016)
Score on numeracy test (≥ median vs. <median)		
-- group = 2	0.203*** (0.048)	-0.207*** (0.069)
-- group = 3	0.213*** (0.073)	-0.079** (0.040)
-- group = 4	0.126* (0.073)	-0.031 (0.022)
-- group = 5	-0.066 (0.066)	0.034 (0.025)
-- group = 6	-0.143* (0.074)	0.043** (0.017)

(continued on next page)

(Table 12 continued)

Variables	Average marginal effect	
	probability of switching from *Yes to No*	probability of switching from *No to Yes*
-- group = 7	0.011 (0.074)	0.003 (0.020)
CRT test (vs. other)		
• thinking fast		
-- group = 2	-0.129 (0.081)	0.099 (0.055)
-- group = 3	-0.103 (0.105)	0.029 (0.026)
-- group = 4	0.192* (0.105)	-0.048 (0.033)
-- group = 5	0.002 (0.100)	-0.004 (0.042)
-- group = 6	0.062 (0.091)	-0.022 (0.030)
-- group = 7	-0.149 (0.108)	0.320 (0.024)
• thinking slow (vs. other)		
-- group = 2	-0.095 (0.073)	0.066* (0.043)
-- group = 3	-0.123 (0.085)	0.034* (0.020)
-- group = 4	0.147 (0.092)	-0.039 (0.032)
-- group = 5	-0.017 (0.077)	0.016 (0.034)
-- group = 6	0.019 (0.074)	-0.001 (0.028)
-- group = 7	-0.092 (0.097)	0.024 (0.017)

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Appendix: The Online Survey and Experiment

Survey of public opinion and knowledge of the Quebec economy

Hello!
Thank you for your interest in our survey of public opinion and knowledge about key economic issues in Quebec. The results of this survey will be shared with provincial policy-makers. Your opinion is critical to shaping economic policies in Quebec!
Click NEXT to begin.

Part 1:

We will now ask you several questions about your opinion on economic issues, policies, and their consequences.

There are no correct or incorrect responses.
There is no time limit.
Click NEXT when you're ready to proceed.

Do you agree or disagree with the following statements:

Please choose the appropriate response for each item:

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Higher income households should pay a larger share of their income in taxes than lower income households.					
Most people who are unemployed simply don't want to work.					
In general, a person in Quebec is able to get ahead in life by honest and hard work.					

Do you agree that the minimum wage in Quebec should be $15/hour?

Please choose only one of the following:

- Yes
- No

[If responded “No”]

You indicated that you disagree that the minimum wage should be equal to $15/hour.

In the space below, please let us know the main reason(s) for your answer.

[If responded "Yes"]

You indicated that you agree that the minimum wage should be equal to $15/hour.
In the space below, please let us know the main reason(s) for your answer.

If the minimum wage is $15/hour, what will be the most likely outcome for your family and you:

Please choose only one of the following:

- My family and I will mostly benefit.
- My family and I will somewhat benefit.
- My family and I will be unaffected.
- My family and I will be somewhat hurt.
- My family and I will be mostly hurt.

[If responded "mostly hurt" or "somewhat hurt"]

You indicated that you and your family will be hurt to some extent if the minimum wage is $15/hour.

In the space below, please let us know the main reason(s) for your answer.

[If responded "mostly benefit" or "somewhat benefit"]

You indicated that you and your family will benefit to some extent if the minimum wage is equal to $15/hour.

In the space below, please let us know the main reason(s) for your answer.

According to you, which of the outcomes below is the most likely outcome if the minimum wage is $15/hour?

Please choose only one of the following:

- A lot of people who currently earn the minimum wage will lose their jobs.
- Some people who currently earn the minimum wage will lose their jobs.
- Hardly anyone who currently earns the minimum wage will lose their jobs.

According to you, which of the outcomes below is the most likely outcome if the minimum wage is $15/hour?

Please choose only one of the following:

- Currently unemployed people will be more likely to find new jobs.
- Currently unemployed people will be less likely to find new jobs.
- Currently unemployed people will not be affected.

According to you, which of the outcomes below is the most likely outcome if the minimum wage is $15/hour?

Please choose only one of the following:

- Prices for goods and services will go up.
- Prices for goods and services will remain the same.

- Prices for goods and services will drop.

According to you, which of the outcomes below is the most likely outcome if the minimum wage is $15/hour?

Please choose only one of the following:

- People earning more than the minimum wage will get a raise in their wages and salaries.
- People earning more than the minimum wage will get no raise in their wages and salaries.
- People earning more than the minimum wage will get a reduction in their wages and salaries.

Part 2:

We will now ask you 5 questions about the Quebec economy.
You will receive extra points for every correct answer.
If you do not know the answer, please respond "I don't know".
You will have limited time to answer each question, so we advise you not to search for answers on the Internet or in other sources.
Click NEXT when you're ready to proceed.

What is the current rate of unemployment in Quebec?

Please choose only one of the following:

- Less than 5%
- 5% - 7.99%
- 8% - 10.99%
- 11% - 13.99%
- 14% - 16.99%
- 17% - 19.99%
- 20% or more
- I don't know

What is the current minimum wage in Quebec, in dollars per hour?

Please choose only one of the following:

- Less than $5.00
- $5.00 - $6.99
- $7.00 - $8.99
- $9.00 - $10.99
- $11.00 - $12.99
- $13.00 - $14.99
- $15.00 - $16.99
- $17 or more
- I don’t know

What proportion of workers in Quebec earn the minimum wage?

Please choose only one of the following:

- Less than 5%
- 5% - 9.99%
- 10% - 14.99%
- 15% - 19.99%
- 20% - 24.99%
- 25% - 29.99%
- 30% or more
- I don't know

Relative to the average hourly wage in Quebec, how small or large is the current minimum wage?

Please choose only one of the following:

- The minimum wage is about the same as the average hourly wage.
- The minimum wage is about a quarter of the average hourly wage.
- The minimum wage is about a half of the average hourly wage.
- The minimum wage is about three quarters of the average hourly wage.
- The minimum wage is about twice the average hourly wage.
- I don't know.

What is the approximate level of after-tax income that is considered to be the poverty level for a family of two adults and two children in Quebec?

Please choose only one of the following:

- Less than $30,000
- $30,000 - $34,999
- $35,000 - $39,999
- $40,000 - $44,999
- $45,000 - $49,999
- $50,000 - $54,999
- $55,000 - $59,999
- $60,000 or more
- I don't know

Part 3:

We will now ask you 4 questions.
You will receive extra points for every correct answer.
If you do not know the answer, please respond "I don't know".
You will have limited time to answer each question, so we advise you not to search for answers on the Internet or in other sources.
Click NEXT when you're ready to proceed.

In a competitive market, the price of a product is $5.00. If the government passes a law that sets a minimum price of the product at $6.00, this change will most likely result in

Please choose only one of the following:

- a surplus of the product.
- a shortage of the product.
- a decrease in the supply of the product.
- an increase in the demand for the product.
- I don't know

In a market economy, high wages depend mostly on

Please choose only one of the following:

- responsible business leaders.
- high output per worker.
- actions of the government.
- minimum wage laws.
- I don't know

If your annual income rises by 50% while prices of the things you buy rise by 50%, then your

Please choose only one of the following:

- real income has risen.
- real income has fallen.
- real income is not affected.
- I don't know

A *market* wage is the highest wage that employers are willing to pay and the lowest wage that workers are willing to accept in a market without a government intervention. Which of the following is true about the *minimum* wage?

Please choose only one of the following:

- The minimum wage is higher than the market wage.
- The minimum wage is lower than the market wage.
- The minimum wage is exactly equal to the market wage.
- I don't know.

Part 4:

We will now ask you to carefully read the provided information and answer one question.

There is no time limit.
Click NEXT when you're ready to proceed.

Group 1: The current minimum wage for workers not receiving tips in Quebec is $10.75/hour, which is about 45% of the average hourly wage in Quebec. About 6% of all workers in Quebec are currently paid this minimum wage.
Do you think the minimum wage should be equal to $15/hour?

- Yes
- No

Group 2: The current minimum wage for workers not receiving tips in Quebec is $10.75/hour, which is about 45% of the average hourly wage in Quebec. About 6% of all workers in Quebec are currently paid this minimum wage.

Do you think the minimum wage should be equal to $15/hour if, as a result, 90 out of every 100 workers who earn the minimum wage will get a raise, while the remaining 10 out of every 100 workers will lose their jobs?

- Yes
- No

Group 3: The current minimum wage for workers not receiving tips in Quebec is $10.75/hour, which is about 45% of the average hourly wage in Quebec. About 6% of all workers in Quebec are currently paid this minimum wage.

Do you think the minimum wage should be equal to $15/hour if, as a result, 70 out of every 100 workers who earn the minimum wage will get a raise, while the remaining 30 out of every 100 workers will lose their jobs?

- Yes
- No

Group 4: The current minimum wage for workers not receiving tips in Quebec is $10.75/hour, which is about 45% of the average hourly wage in Quebec. About 6% of all workers in Quebec are currently paid this minimum wage.

Do you think the minimum wage should be equal to $15/hour if, as a result, 50 out of every 100 workers who earn the minimum wage will get a raise, while the remaining 50 out of every 100 workers will lose their jobs?

- Yes
- No

Group 5: The current minimum wage for workers not receiving tips in Quebec is $10.75/hour, which is about 45% of the average hourly wage in Quebec. About 6% of all workers in Quebec are currently paid this minimum wage.

Do you think the minimum wage should be equal to $15/hour if, as a result, you will pay 5%-10% more for goods and services produced by minimum-wage earners, for example, fast food?

- Yes
- No

Group 6: The current minimum wage for workers not receiving tips in Quebec is $10.75/hour, which is about 45% of the average hourly wage in Quebec. About 6% of all workers in Quebec are currently paid this minimum wage.

Do you think the minimum wage should be equal to $15/hour if, as a result, you will pay 15%-20% more for goods and services produced by minimum-wage earners, for example, fast food?

- Yes
- No

Group 7: The current minimum wage for workers not receiving tips in Quebec is $10.75/hour, which is about 45% of the average hourly wage in Quebec. About 6% of all workers in Quebec are currently paid this minimum wage.

Do you think the minimum wage should be equal to $15/hour if, as a result, you will pay 25%-30% more for goods and services produced by minimum-wage earners, for example, fast food?

- Yes
- No

Part 5:

We will now ask you 4 questions.
You will receive extra points for every correct answer.
You can use a calculator to answer the questions.
There is no time limit.
Click NEXT when you're ready to proceed.

If the chance of getting a disease is 10%, how many people out of 1,000 would be expected to get the disease?

- 10
- 900
- 100
- 90
- 999

In a sale, a shop is selling all items at half price. Before the sale, a sofa costs $300. How much will it cost in the sale?

- $600
- $300
- $150

A second-hand car dealer is selling a car for $6,000. This is two-thirds of what it costs new. How much did the car cost new?

- $9,000
- $4,000
- $8,000
- $12,000
- $18,000

Let’s say you have $2,000 in a savings account. The account earns 10% interest each year. How much would you have in the account at the end of 2 years?

- $2,420
- $2,020
- $2,040
- $2,400
- $2,100
- $2,200

Part 6:

We will now ask you 3 questions.
You will receive extra points for every correct answer.
There is no time limit.
Click NEXT when you're ready to proceed.

A bat and a ball cost $1.10 in total. The bat costs $1.00 more than the ball. How much does the ball cost? (Please enter the amount in cents.)

If it takes 5 machines 5 minutes to make 5 widgets, how long would it take 100 machines to make 100 widgets? (Please enter the number of minutes.)

In a lake, there is a patch of lily pads. Every day, the patch doubles in size. If it takes 48 days for the patch to cover the entire lake, how long would it take for the patch to cover half of the lake? (Please enter the number of days.)

Part 7:

Please carefully read the provided instructions before clicking NEXT!
For this part of the survey, we give you 100 tokens that can be converted into survey points and deposited in your account at the end of the survey.
Would you be willing to donate some or all of these tokens to Centraide instead of keeping them? Centraide is a network of non-profit organizations that raise and invest funds to improve the lives of Quebeckers.
Every token you keep will be converted into survey points and every token you donate will be converted into dollars. You will be shown 3 scenarios with different rates at which tokens are converted. For each scenario, there are 3 possible allocations of tokens. Please select one of the 3 allocations in each scenario.
Once you make your choice for all 3 scenarios, one scenario will be chosen at random. The tokens you keep in the randomly-chosen scenario will be converted into survey points and deposited in your account. The tokens you donate to Centraide in the randomly-chosen scenario will be converted into dollars and donated to Centraide.

Click NEXT to see the scenarios when you're ready to proceed.

Scenario 1. Please choose only one of the following:

- Choice 1: You keep: 100 tokens = $10.50 worth of points; Centraide receives: 0 tokens = $0
- Choice 2: You keep: 50 tokens = $0.50 worth of points; Centraide receives: 50 tokens = $0.50
- Choice 3: You keep: 0 tokens = $0 worth of points; Centraide receives: 100 tokens = $0.53

Scenario 2. Please choose only one of the following:

- Choice 1: You keep: 100 tokens = $1.00 worth of points; Centraide receives: 0 tokens = $0
- Choice 2: You keep: 50 tokens = $0.50 worth of points; Centraide receives: 50 tokens = $0.50
- Choice 3: You keep: 0 tokens = $0 worth of points; Centraide receives: 100 tokens = $1.00

Scenario 3. Please choose only one of the following:

- Choice 1: You keep: 100 tokens = $0.53 worth of points; Centraide receives: 0 tokens = $0
- Choice 2: You keep: 50 tokens = $0.50 worth of points; Centraide receives: 50 tokens = $0.50
- Choice 3: You keep: 0 tokens = $0 worth of points; Centraide receives: 100 tokens = $10.50

Part 8:

We are almost done.
In order for us to better understand responses to this survey, we would like you to answer several questions about yourself.
There is no time limit.
Click NEXT when you're ready to proceed.

What is your age? (Please enter the number of years.)

What is you gender?

- Female
- Male
- Prefer not to answer

Including yourself, how many people in total live in your household?

How many children under the age of 16 live in your household?

What is your marital status?

- Single / Never married
- Married / Having a common-law spouse
- Divorced / Separated
- Widowed

Were you born in Canada?

- Yes

- No

[If responded “No”]

You indicated that you were not born in Canada. In what year did you come to Canada?

What language(s) do you mostly speak at home? (check all that apply)

- French
- English
- Arabic
- Spanish
- Other:

What is the highest level of formal education you have personally completed?

- 0-8 years of education
- Some high school
- High school graduate
- Some postsecondary education (including CEGEP)
- Postsecondary certificate or diploma (including CEGEP)
- University degree - Bachelor's degree
- University degree - Above bachelor's degree

Please indicate into which of these income groups your total pre-tax household income would fall:

- Under $30,000
- At least $30,000, but under $60,000
- At least $60,000, but under $90,000
- At least $90,000, but under $120,000
- At least $120,000, but under $150,000
- At least $150,000, but under $200,000
- $200,000 and over
- Prefer not to answer

What is your employment situation?

- Employed full-time, over 30 hours a week
- Employed part-time, less than 30 hours a week
- Self-employed
- Unemployed, seeking work
- Not working – Homemaker
- Not working – Full-time student
- Not working – Retired
- Not working – Welfare or disability benefit recipient
- Other

[If employed or self-employed]
In terms of company ownership, are you…?

- A sole owner
- A partner / co-owner
- A shareholder (or shareholder and employee)
- Employee (not a shareholder or owner)

[If employed or self-employed]
What is the principal activity or sector of your primary employer or your business?

Please choose only one of the following:

- Agriculture
- Automotive
- Banking / Finance / Insurance
- Biotechnology / Pharmaceuticals
- Construction
- Consulting / Business Services
- Culture / Recreation
- Education
- Market Research
- Engineering
- Real Estate Management
- Federal Government
- Municipal or Regional Government
- Provincial Government
- Oil / Gas / Mining / Forestry
- Manufacturing / Production (excluding Automotive)
- Marketing / Communications
- Media / Entertainment
- Military
- Non-Profit Organization
- Consumer Products
- Advertising
- Research & Development
- Recreation / Tourism
- Public Safety (Fire, Police, Ambulance)
- Social and Community Services
- Environmental services
- Utilities
- Scientific and Technical Services
- Health Care or Social Services
- Information Technology
- Telecommunications Technology
- Food processing

- Transportation
- Retail or Wholesale
- Other

Are you currently paid a minimum wage?

- Yes
- No
- Prefer not to answer

Were you paid a minimum wage at your last place of employment?

- Yes
- No
- Prefer not to answer

Is anyone in your household currently paid a minimum wage?

- Yes
- No
- Prefer not to answer

Did you donate to any charity in 2016?

- Yes
- No
- Prefer not to answer

If the Quebec provincial general election were held in 2017 and if you were eligible to vote, what party would you vote for?

- Quebec Liberal Party
- Parti Québécois
- Coalition Avenir Québec
- Québec solidaire
- Parti vert du Québec
- Another party
- I don't know / I wouldn't vote
- Prefer not to answer

If the Canadian federal election were held in 2017 and if you were eligible to vote, what party would you vote for?

- Liberal Party of Canada

- New Democratic Party
- Conservative Party of Canada
- Bloc Québécois
- Green Party of Canada
- Another Party
- I don't know / I wouldn't vote
- Prefer not to answer

What are your main sources of news? (Check all that apply.)

- Television
- Newspapers and magazines (whether printed or online)
- Online blogs and forums
- Radio (including podcasts)
- Friends and family
- Social networks (e.g., Facebook)
- Books (including textbooks)
- Political parties
- Religious leaders
- None
- Other:

Are you a member of any of the following organizations? (Please check all that apply.)

- Political Party or Organization
- Labour or Trade Union
- Professional, Industry, or Academic Association
- Religious Organization (i.e., church, mosque)
- Charity, Volunteer, or Fraternal Organization
- Interest- or Cause-based Group (e.g., an environmental campaigning organization)
- Other
- None

You have earned a bonus of $___ worth of survey points for correctly answering ___ questions.
In the randomly-chosen scenario, you kept $___ worth of survey points.
In total, your bonus is $_____ worth of survey points.

The survey is now complete.
The points you have earned will be credited to your account soon.
Thank you for your participation!