

Does Color Matter?
**Estimating Differences in Promotions and Returns to Promotions between White and Visible
Minority Canadian-Borns**

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Abstract

There is extensive evidence that suggests visible minority immigrants in Canada experience significant disadvantages in their labour market outcomes compared to white Canadian-borns and white immigrants. In this study we examine whether the poor performance of visible minority immigrants is also shared by their next generations, namely visible minority Canadian-borns. Specifically, we use Canadian linked employer-employee data to examine differences in promotion outcomes and wage returns to promotions between visible minority and white Canadian-borns. We also examine the extent to which any differences in promotions opportunities operate within firms versus between firms (driven by disproportionate sorting of visible minority Canadian-borns into firms offering fewer promotion opportunities), and whether differences in intra-firm mobility can be explained by differences in inter-firm mobility. Our results suggest that both male and female visible minority Canadian-borns experience substantial differences in the probability of promotion, the number of times promoted, and wage returns to promotions, compared to their white peers. We also find that these differences are larger for men and for more educated visible minorities. We don't find any evidence that these differences can be justified by differences in inter-firm mobility since our results suggest that visible minority workers are not more likely to seek career progress through changing employer. In fact, female visible minorities are less likely to change employer which is consistent with our finding that part of the differences they experience is driven by their sorting into firms with lower promotion opportunities. We suggest that our findings are consistent with the Invisibility Hypothesis developed by Milgrom and Oster (1987). For female visible minorities, different family responsibilities driven potentially by different cultural or family dynamics seem to also contribute to these differences.

JEL codes: M51, J71.

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1. Introduction

The composition of the Canadian population has changed drastically in the last few decades. The majority of recent immigrants to Canada come from countries that identify them as visible minorities.¹ According to estimates by Statistics Canada, by 2031 visible minorities will approximately comprise one-third of Canada's population.² Therefore, visible minorities will play an increasingly important role in the Canadian labour force. At the same time, integration of immigrants and their next generations into the labour market has always been one of the main policies and also one of the key challenges in Canada. This highlights the importance of studying the labour market performance of visible minorities in Canada. In addition, since the US, Australia, and many European countries are also experiencing similar compositional changes in their population and similar challenges in assimilation of immigrants, this is a topic that is also of international interest, and relevant to both academics and policy makers.

There is an extensive literature in economics that examines the labour market performance of visible minority immigrants (e.g. Akbari 1992, Howland and Sakellariou, 1993, Christofides and Swidinsky 1994, Stelcner and Kyriazis 1995, Baker and Benjamin 1997, Lian and Matthews 1998, Pendakur and Pendakur 1998, Hum and Simpson 1999; Swidinsky and Swidinsky 2002, Pendakur and Woodcock 2010). The evidence from these studies suggests that visible minority immigrants experience a significant disadvantage in their labour market outcomes compared to white Canadian-borns, an experience that is not shared by white immigrants. One of the important questions raised by these findings is whether the poor performance of visible minority immigrants is also shared by their next generations, namely visible minority Canadian-borns. There are a few studies that investigate this question by estimating wage gaps between

¹ "Visible minority refers to whether a person belongs to a visible minority group as defined by the Employment Equity Act and, if so, the visible minority group to which the person belongs to. The Employment Equity Act defines visible minorities as "persons, other than Aboriginal people, who are non-Caucasian in race or non-white in colour". The visible minority population consists mainly of the following groups: Chinese, South Asian, Black, Arab, West Asian, Filipino, Southeast Asian, Latin American, Japanese and Korean." (Statistics Canada, 2015). We define our indicator of visible minority status likewise. A worker is identified as a Canadian-born visible minority if he/she was born in Canada, and her parents or grandparents were reported to belong to a visible minority group as defined above.

² Statistics Canada. The Daily, March 9, 2010.

white and visible minority Canadian-borns (e.g. De Silva 1996, Pendakur and Pendakur 2002, Hum and Simpson 2007, Hou and Coulombe 2010, Pendakur and Woodcock 2010, Skuterud 2010). These studies find significant wage disparities between visible minority and white Canadian-borns.

For example, Pendakur and Pendakur (2002) use data from five census periods in Canada (1971, 1981, 1986, 1991 and 1996) and find that the gap in earnings between white and visible minority Canadian-borns narrows through the seventies, stabilizes through the eighties, and widens between 1991 and 1996. Their results suggest that these patterns are similar for both genders, for most birth cohorts, and for most of the ethnic groups that comprise white and visible minority categories. Using the 2006 Canadian census data, Hou and Coulombe (2010) find that while there is no earnings gap between white and visible minority Canadian-borns in the public sector, there is a significant gap in the private sector. Skuterud (2010) uses 2001 and 2006 Canadian census data to compare the weekly earnings of visible minority immigrants who came to Canada as a child with next generations of visible-minority immigrants who were born in Canada (second- and third-and-higher generation Canadians). Although his results suggest that conditional earnings increase across subsequent generations of visible minorities, they also suggest that even third-and-higher generations of visible minorities still experience an earnings gap with white Canadian-borns.

In this study we also focus on comparative labour market performance of visible minority and white Canadian-borns. However, to the best of our knowledge, this is the first study that goes beyond examining wage differentials and investigates differences in promotion opportunities and wage returns to promotions between white and visible minority Canadian-borns. There are several studies that examine racial differences in promotions in other countries using non-representative samples from a single firm or a specific group of workers (e.g. Landau 1995 (Managerial and professional employees at a Fortune 500 company), Baldwin 1996 (US army officers), Paulin and Mellor 1996 (a medium-sized financial firm), Pergamit and Veum 1999 (young fulltime workers in the private sector), Pudney and Shields 2000a and

2000b (Nurses in the UK's National Health Service), Bellemore 2001 (Professional baseball)).³ These studies find mixed results regarding racial differences in promotions which is potentially attributed to the non-representative samples they exploit and often not well-defined measures of promotion. However, to the best of our knowledge, we are also the first study to use a nationally-representative sample to examine differences in promotion opportunities based on ethnic background.

It is well-understood that promotion outcomes are one of the primary drivers of improvement in wages among workers. Promotions could directly affect wages and wage growth, or could have an indirect impact through training receipt, job satisfaction, or overall labour market segregation. There is strong evidence that suggests promotions are associated with large wage increases (e.g. Olsen and Becker 1983, Gerhart and Milkovich 1989, Lazear 1992, McCue 1996, Cobb-Clark 2001, Pergamit and Veum 1999, Francesconi 2001, Blau and DeVaro 2007). For example, results from Blau and DeVaro (2007), Cobb-Clark (2001), Francesconi (2001), Kosteas (2009), and Pergamit and Veum (1999) suggest that promotions are on average associated with 5 to 12 percent increase in wage growth. Therefore, one of the potential key explanations for the documented differences in earnings between white and visible minority Canadian-borns discussed above is slower growth in earnings experienced by visible minority Canadian-borns by virtue of failing to keep pace with their white counterparts in “climbing the corporate ladder.” Therefore, examining differences in promotion opportunities and wage returns to promotions between visible minority and white Canadian-borns would help us gain a better understanding of the wage disparities found by previous studies and how they have evolved over time.

We believe examining promotion outcomes is important not only because of their impact on wages, but also because promotions are potentially a major component of nonpecuniary aspects of a job and could have significant impacts on workers' motivation, job satisfaction, social status, and training opportunities

³ There also exists a large literature in economics that examines gender differences in promotion outcomes (e.g. Addison et al. 2014, Blau and DeVaro 2007, Booth et al. 2003, Cobb-Clark 2001, Johnston and Lee 2012, van der Klaauw and de Silva 2011, and others). While this literature has yielded mixed results, the evidence that suggests females are in a disadvantaged position in terms of promotions and returns to promotions seems to be more common.

which could in turn have important effects on productivity, organizational commitment, turnover, creativity and innovation, and firm's profitability (see Mangoine and Quinn 1975, Freeman 1978, McEvoy and Cascio 1985, Akerlof et al. 1988, Koys 2000, Judge et al. 2001; Patterson et al. 2004, and Yee et al. 2008). For example, Pergamit and Veum (1999) find that promotions are associated with training receipt, supervisory responsibilities, and increased job satisfaction. Other studies also find that promotions have a significant impact on job satisfaction (Francesconi 2001, De Souza 2002, Kosteas 2011). Kosteas (2011) finds that "a promotion has the same impact on job satisfaction as a 69 percent increase in the (hourly) wage." This suggests that going beyond one-dimensional earnings analysis by careful examination of promotion opportunities as an important labour market outcome and a main contributor to employment conditions will help us gain a more comprehensive understanding of employment conditions and labour market outcomes of disadvantaged groups such as visible minority Canadian-borns.

While relatively poor labour market performance of visible minority immigrants could be (partly) attributed to non-discriminatory factors such as language and accent penalties, limited access to work-related networks, or lower returns received for foreign education and labour market experience, these are not issues faced by visible minority Canadian-borns for the most part. Therefore, findings that indicate disadvantaged labour market outcomes for visible minority Canadian-borns could be interpreted as potentially a stronger sign of discrimination against this group in the labour market. A recent study by Oreopoulos (2011) that uses thousands of randomly manipulated resumes sent to online job postings in Toronto finds that resumes with Indian, Pakistani, or Chinese names but Canadian undergraduate education and Canadian experience were 39 percent less likely to receive callbacks compared to English-sounding names.⁴ Even those with English first name and Chinese last name (often a signal of being a second generation Chinese) received significantly lower callback rates. Although this is consistent with discriminatory behaviour against visible minorities in hiring decisions, it won't be a long stretch to imagine similar practices in promotion decisions.

⁴ Bertrand and Mullainathan (2004) find similar results for African-Americans in Boston and Chicago.

According to 2009 General Social Survey by Statistics Canada, “One-quarter of both visible minority sexes in Canada reported discrimination or unfair treatment during the five years preceding the survey in 2009. In comparison, 13% of non-visible minority people reported discrimination or unfair treatment during the same period.” The most common situation of discrimination were “At work or when applying for a job or promotion”. In addition, a recent national survey of 17,000 managers, professionals and executives employed in 43 large publicly traded and privately held companies and professional service firms across Canada finds that “Visible minority respondents were more likely to perceive workplace barriers than their white/Caucasian colleagues. These barriers included perceived lack of fairness in career advancement processes, absence of role models, inequality in performance standards, and fewer high-visibility assignments.” (Giscombe 2008).

Invisibility Hypothesis developed by Milgrom and Oster (1987) provides a potential theoretical explanation for lower promotion opportunities experienced by disadvantaged groups (such as visible minorities) that is driven by employer discrimination. A central idea in this model is that promotions serve as a signal of worker ability. This is an idea that was initially developed by Waldman (1984) and has had a large impact on the subsequent literature (e.g. MacLeod and Malcolmson 1988, Bernhardt 1995, Gibbs 1995, Zbojnik and Bernhardt 2001, Owan 2004, Golan 2005 & 2009, Ghosh and Waldman 2010, Cassidy et al. 2012, DeVaro and Waldman 2012, DeVaro et al. 2012, and Zbojnik 2012). Building on this idea, Milgrom and Oster (1987) show that if potential employers have less information about the ability of a disadvantaged group of workers, which is what they refer to as “invisibility”, then current employers with private information about their talented but invisible workers will be motivated to discriminate against these workers by limiting their promotion opportunities. Cassidy, DeVaro and Kauhanen (2012) and DeVaro, Ghosh, and Zoghi (2012) find empirical results that are consistent with the theoretical predictions of the Milgrom-Oster framework. This suggests that Promotions are particularly pertinent outcomes when examining whether the labor market experience of white and visible-minority Canadian-borns differs, and allow us to investigate one of the main channels through which they might experience discrimination.

Another novel feature of our empirical investigation lies in distinguishing between two different

mechanisms that could give rise to economy-wide differences in promotion opportunities between white and visible minority Canadian-borns: a within-firm mechanism and a between-firm mechanism. For example, any economy-wide gaps in probability of promotion between whites and visible minorities could operate through promotion gaps within firms between the two groups. Alternatively, economy-wide gaps in probability of promotion could exist even in the absence of any disparities in probability of promotion within firms. These economy-wide gaps could be driven by disproportionate sorting of visible minority Canadian-borns into firms offering fewer promotion opportunities—firms hiring workers into “dead-end” jobs.⁶ We are the first study to make such distinction when examining promotion opportunities of visible minorities. It is important to distinguish between these two mechanisms because they are clearly driven by different factors and therefore have different policy implications.

Antidiscrimination policies focus on the hiring decision and on pay equity at given levels within firms. If visible minorities experience economy-wide differences in promotion opportunities that are driven by their crowding into firms offering fewer promotion opportunities, then employment equity policies promoting equal employment opportunities at different firms for all workers could be effective in reducing these disparities. However, employment equity policies do not address a mechanism through which visible minorities may fall behind in terms of wages: the failure to keep pace with their white peers in climbing the corporate ladder *within firms* once they have their “foot in the door.” Similarly, pay equity policies do little to benefit visible minorities if visible minorities—even while earning equal pay for equal work—are less able to move up the ladder to more demanding—and higher paying—jobs.

Another contribution of our study is examining whether differences in inter-firm mobility and wage returns to inter-firm mobility can explain differences in promotion outcomes between whites and visible minorities. To the best of our knowledge, none of the previous studies in this area have examined this issue

⁶ As suggested by Abowd, Kramarz and Margolis (1999), Bronars and Famulari (1997), Dickens and Katz (1987), Groshen (1990, 1991), Salvanes et al. (1998), and others, sorting of workers across firms can explain a significant portion of variation in individual wages. These sorting mechanisms could also be responsible for variation in other labour market outcomes such as promotions, training opportunities, etc.

in conjunction with their analysis of intra-firm mobility. Inter-firm mobility is another channel through which workers can progress in their career and earn higher wages (e.g. Topel and Ward 1992, Farber 1994, Booth et al. 1999, Munasinghe and Sigman 2004, and Parrado et al. 2007). Therefore one potential explanation for differences in intra-firm upward mobility is differences in inter-firm mobility between the two groups. Visible minorities might use inter-firm mobility (at a disproportionately higher rate compared to whites) to advance in their careers and therefore might not invest much time and effort to achieve intra-firm upward mobility. Therefore, we believe it is important to examine differences in intra-firm upward mobility in conjunction with inter-firm mobility patterns to gain a better understanding of the whole picture.

We find that both male and female visible minority Canadian-borns experience substantial economy-wide gaps in probability of promotion, number of times promoted, and returns to promotion compared to their white counterparts. We also find that these differences are consistently larger for male visible minorities compared to female visible minorities, especially for returns to promotion, and are also larger for more educated visible minorities. For men, we find no evidence that whites and visible minorities are differently sorted across firms with different promotions opportunities, which suggests the gaps they experience mainly operates within firms. However, for females, around half of the economy-wide gap is driven by disproportionate sorting of visible minority females into firms that on average offer fewer promotion opportunities to their workers.

We find no evidence that visible minorities' disadvantaged promotion outcomes are driven by their higher probability of changing employer. More specifically, we find that male visible minorities are as likely as their white counterparts to change employer. Female visible minorities however experience a lower probability of changing employer compared to white females. This is consistent with our finding that they are on average sorted into firms with lower promotion opportunities and are less likely or less able to use inter-firm mobility to improve their promotion opportunities.

We also find some suggestive evidence consistent with the existence of discrimination in promotion decisions. Our results suggest that for male visible minorities the gap in promotion opportunities is mainly experienced by those employed at firms without a pay equity policy. For women, however, the gap persists

in both firms with and without pay equity policy suggesting that for female visible minorities there could be other important factors contributing to these differences in promotions. We find some evidence that suggests some of the gaps experienced by female visible minorities could be partly driven by differences in family responsibilities driven potentially by different cultural norms or family dynamics. More specifically, we find that single visible minority females fare better in terms of promotion outcomes compared to married visible minority females, while the opposite holds for male visible minorities.

We suggest that our results are consistent with the Invisibility Hypothesis developed by Milgrom and Oster (1987). They develop a model where workers are different in terms of the extent to which their ability is publicly observable by employers. At the same time, Milgrom and Oster assume that promotions affect employers' beliefs about a worker's ability. They show that invisibility of some workers (such as women or visible minorities) could lead to discrimination in promotion opportunities against these workers. More specifically, current employers who have gained private information about the ability of their talented less visible workers have the incentive to limit the promotion opportunities of these workers to suppress the signals of ability these promotions send to competing firms to avoid these workers from being bid away by another employer and to limit their bargaining power to negotiate for pay increases. This will result in a lower proportion of less visible workers, such as visible minorities in our study, as well as lower returns to promotions for these workers since only those with high but not very high ability are promoted. At the same time, it is implied by the model that limited promotion opportunities experienced by less visible workers within firms, which stops them from signaling their ability to other employers, will not allow them to disproportionately use inter-firm mobility to improve their promotion opportunities. In other words, in this model and given the mechanisms in play lower opportunity of intra-firm mobility faced by less visible workers is not going to generate opportunity for more inter-firm mobility for these workers. This theory of employer discrimination that limits the promotion opportunities of visible minority workers is consistent with our findings discussed above.⁷

⁷ We discuss this in more detail in section 4.3.

2. Data and Sample Characteristics

Our study uses the Workplace and Employee Survey (WES), a longitudinal annual survey of employers and their employees administered by Statistics Canada between 1999 and 2006.⁸ The target population of employers consisted of all business locations in Canada with paid employees in March of the survey year.⁹ In the 1999, 2001, 2003, and 2005 surveys, the sample of employers was refreshed with new employers from the Statistics Canada Business Register to maintain a representative cross-section of Canadian firms. A maximum of twenty-four employees were interviewed from each sampled firm in each odd year and re-interviewed the following year.^{10,11}

The randomly selected workers in each odd year make one of five transitions between the two interviews: enter unemployment or self-employment, move to a new employer, stay with the same employer and are promoted, stay with the same employer and not promoted, or attrit (i.e. cannot be contacted for the second interview).¹² Given the structure of our data, we use two samples for different parts of our analysis. For our analysis of the probability of promotion and the number of times promoted, we use pooled 1999, 2001, 2003 and 2005 cross-sections of employees. Data from interviews in the even-numbered years are not used to avoid potential sample selection problems associated with employee attrition between the two interviews. We restrict the sample to white and visible minority Canadian-borns between the ages of 18 and

⁸ In 2006 only the employer part of the survey was administered.

⁹ Employers in Yukon, Nunavut and Northwest Territories and employers operating in crop production, animal production, fishing, hunting, trapping, private households, religious organizations and public administration were excluded from the sample. Public administration, which includes establishments primarily engaged in the enactment and judicial interpretation of laws and their pursuant regulations and the administration of programs based on them, accounts for around 6.5 percent of employment in Canada (Statistics Canada, Table 281-0024).

¹⁰ The number of workers interviewed from each firm was proportional to firm's size except for workplaces with fewer than four employees in which all employees were surveyed. When properly weighted, the employee sample is representative of the Canadian workforce in the target population of employers; all of our analysis incorporates sample weights from Statistics Canada.

¹¹ Only employees whose first year employer is not in business during the second interview year are excluded to be re-interviewed. Workers who moved to a new employer after the first interview, regardless of whether the new employer is part of the workplace target population or not, are still included to be followed and re-interviewed.

¹² Workers might attrit due to several reasons that we cannot identify in our data such as refusal, unable to contact or locate, absent for duration of survey, own illness, deceased, or unusual or special circumstances. The average attrition rate in our data is not very high compared to other similar data and is around 16 percent.

65 from firms that have at least two male or female workers sampled over the entire period they appear in the data. The restricted sample includes 28,940 women and 37,970 men.

For our analysis of wage returns to promotions we need to use employee information from both interview years to calculate workers' wage growth and examine differences in wage growth between the two groups when promoted. Therefore for this part of our analysis we use pooled 1999, 2001, 2003 cross-sections of employees who are also interviewed the year after (i.e. non-attriters) and have not changed employer in the interim.^{13,14} Our sample is again restricted to white and visible minority Canadian-borns between the ages of 18 and 65 from firms that have at least two male or female workers sampled over the entire period they appear in the data. The restricted sample includes 14,925 women and 19,825 men.

One point worth discussing here. Contrary to the former sample (i.e. pooled cross-sections), the latter one (i.e. longitudinally-linked sample of employees) used to analyze differences in wage returns to promotion is not random since two groups of workers are excluded from this sample, those who change employer between the two interviews and attriters. Attriters are excluded obviously because we cannot calculate their wage growth between the two interview years. Movers are also excluded since this sample is used to analyze differences in wage growth associated with promotion while working for the same employer.

Excluding these two groups from the second sample might raise some concerns regarding sample selection which might affect our estimates of differences in wage returns to promotion. To mitigate these concerns we perform several tests and investigations. As the first test for sample selection associated with attrition, we examine whether there are any differences in the probability of attrition between whites and visible minorities. These results are reported in table 8 and suggest that among men there are no differences in the probability of attrition between whites and visible minorities in both conditional and unconditional

¹³ We cannot use the 2005 cross-section of employees because there was no employee survey in 2006 to link them to.

¹⁴ To address the concern that the promotion gap estimates we get using the pooled cross-sections might not be the same in the longitudinally-linked sample of workers we use for our analysis of returns to promotions, we also use the longitudinally-linked sample to reproduce the results reported in table 2 that are based on pooled cross-sections. These results are reported in table A6 in the online appendix and suggest that both samples produce similar results.

specifications. However, among female workers and in specifications that control for observed characteristics we find that visible minorities are 4-5 percentage points less likely to attrit, although the estimates are not statistically significant.

As the second test we use data from odd years to examine whether the relationship between employees observed characteristics and promotion is different between white and visible minority attriters. This allows us to test whether any non-randomness in attrition is systematically different between the two groups.¹⁵ We run a regression of our promotion indicator on our set of observed characteristics (explained below in more detail), as well as interactions between observed characteristics and an indicator for attriters, and interactions between observed characteristics and an indicator for visible minority attriters.¹⁶ We then test whether the estimated coefficients of the interaction terms between observed characteristics and the indicator for visible minority attriters are equal to zero. We run these regressions separately for men and women and reject the null hypothesis that these estimated coefficients are statistically different from zero at the conventional significance levels for both genders. Together, results of these two tests suggest that whites and visible minorities have the same probability of attrition, and the relationship between employee characteristics and promotion does not seem to be different between the two attriter groups.¹⁷

As it was explained before, inter-firm mobility might be another channel through which workers seek to advance in their career. Therefore, excluding workers who change their employer between

¹⁵ Even if attrition is non-random, it won't be a problem for our analysis as long as this non-randomness is the same between white and visible minority attriters. The implicit assumption behind the test we are performing is that if non-random attrition is systematically different between the two groups, then we would observe a difference in the relationship between employees observed characteristics and promotion between white and visible minority attriters.

¹⁶ The regression is $promot = X\beta_1 + I(attriter) * X\beta_2 + I(attriter \& \text{visible minority}) * X\beta_3 + \epsilon$ where X is a vector of observed characteristics, $I(attriter)$ is an indicator that is equal to 1 if a worker is an attriter and 0 otherwise, and $I(attriter \& \text{visible minority})$ is an indicator that is equal to 1 if a worker is a visible minority attriter and 0 otherwise. We then test whether $\beta_3 = 0$.

¹⁷ To the extent that unobserved characteristics affect the relationship between observed characteristics and promotion, this result also suggests that there does not exist any non-random unobserved differences in attrition between whites and visible minorities. For example, if visible minority attriters were of higher ability compared to white attriters, then the effect of their education on promotion would be potentially stronger than whites because education also partly captures ability. Therefore, the fact that we find the relationship between observed characteristics and promotion is not different between whites and visible minority attriters also implies that these two groups of attriters are also unlikely to differ in terms of unobserved characteristics, again as long as these unobserved characteristics influence the relationship between observed characteristics and promotion.

interviews from our analysis of wage returns to promotion might also raise some concerns regarding sample selection. For example, if there are systematic differences in characteristics of white and visible minority workers who change employer, then this will create systematic differences between the two groups in the pool of stayers which could in turn potentially affect our estimated differences in wage returns to within-firm promotion. In our data and across all years, the average proportion of workers who change employer is 5.8 percent, and 75 percent of these changes are voluntary (i.e. worker quitting as opposed to job coming to an end). We examine whether there are differences in the probability of changing employer and the wage growth associated with these changes between white and visible minority Canadian-borns. For this part of the analysis, described in section 4.2, we use our longitudinally-linked sample but without imposing any restriction on whether the worker is with the same or a different employer (i.e. we keep both groups in the data). As it is discussed in more detail in section 4.2, our estimated differences in inter-firm mobility between the two groups cannot account for lower wage returns to promotion experienced by visible minorities. In other words, taking into account differences in inter-firm mobility between the two groups and including workers who change employer into our analysis is unable to explain the disadvantaged position of visible minorities in internal labour markets.

We use several dependent variables in our study. To examine differences in probability of promotion we use an indicator for whether the employee has ever been promoted while working for her current employer. This indicator comes from the employee's response to the question, "Have you ever been promoted while working for this employer? (By promotion we mean a change in duties/responsibilities that led to both an increase in pay and the complexity or responsibility of the job.)" Changes in pay and responsibilities are two distinguishing features of promotions (Pergamit and Veum, 1999), and our data identify promotions using precisely these two features.¹⁸ The probability that an employee has *ever* been

¹⁸ Our precise promotion measures are another noble feature of our study. Many studies that identify promotions using changes in job titles or hierarchical levels (e.g., Booth et al. 2003, Cassidy et al. 2012, Kunze 2014) may inadvertently classify "lateral" moves in which job titles change as promotions or miss promotions within job titles or broadly defined hierarchical levels.

promoted with his/her current employer is of special interest given that the first promotions received by workers with their current employers in our data are associated with larger wage increases than subsequent promotions.

Estimating whether a worker has ever been promoted, however, may obscure differences in the advancement experiences of visible minorities if they are promoted more or less frequently with their current employers than their white peers. Visible minorities may succeed in obtaining early promotions—particularly pro forma promotions—while still falling behind their white peers if these peers enjoy subsequent promotions that visible minorities do not. Therefore, we also examine differences in the number of times promoted while working for the current employer. All employees who report they have been promoted with their current employer are asked to report the number of times they have been promoted while working for their current employer.

It is also important to examine any differences in wage growth associated with promotions since while visible minorities might experience the same probability or frequency of promotion, they might receive lower wage returns to these promotions compared to their white peers. To examine differences in returns to promotions we use the change in the worker's log-hourly wage between the two interviews as our dependent variable.¹⁹

The control variables in our regressions (reported in table 1) are: the highest level of schooling (8 categories), marital status (6 categories), age (9 categories), number of dependent children (5 categories), a quartic in years of (actual) full-time labour market experience, a quadratic in years of seniority with the current employer, language spoken at work (3 categories: English, French, other), an indicator for full-time employment, an indicator for membership in a union or collective bargaining agreement, an indicator for the language spoken at work being different from the language spoken at home. Some of our regressions

¹⁹ To make sure the promotion indicator we use on the right-hand-side in these regressions (to examine returns to promotions) reflects a promotion between the two interviews so we can examine its impact on wage growth and its difference between the two groups, the promotion indicator in these regressions is equal to one if the reported date of the most recent promotion is after the date of the first interview.

also include controls for occupation (6 categories), industry (14 categories), and firm fixed effects. All our regressions are run separately for men and women. They are all estimated using employee sample weights provided by Statistics Canada. All standard errors are heteroskedasticity-robust and are clustered at the firm level.

Table 1 reports weighted sample means for white and visible minority Canadian-borns, separately for men and women, for the cross-sectional and the longitudinal samples explained above. Among both genders, on average white Canadian-borns have higher hourly wages, are more likely to get promoted, and are promoted more times. White Canadian-borns have substantially higher years of labour market experience, which seems to be driven by the fact that they are on average several years older than visible minority Canadian-borns. For both genders, the average visible minority Canadian-born is more educated, less likely to be married or in a common-law relationship, and less likely to have children (again partly driven by the fact that they are on average younger). In terms of job characteristics, male (female) visible minorities have fewer years of seniority with current employer, are less likely (similarly likely) to work full-time, less likely to be a member of union or collective bargaining agreement, less likely to speak French at work, and more likely to speak English at work.

3. Empirical Strategy

We estimate models of both whether a worker has ever been promoted with his/her current employer and the number of times the worker has been promoted with the current employer. The economy-wide differences in average promotion outcomes between white and visible minority Canadian-borns conditional on observed individual and job characteristics are estimated using the linear regression model:

$$E[P_i|X_i, g_i] = X_i'\beta + g_i\delta, \quad (1)$$

where P_i is—depending on the regression—either an indicator for having ever been promoted with the current employer or the number of times promoted while working for the current employer, X_i is a vector of individual and job characteristics explained above, and g_i is the indicator for visible minority status. The parameter vector β captures the relationships between observed characteristics and promotion outcomes,

while δ measures the economy-wide differences in average promotion outcomes between white and visible minority Canadian-born workers conditional on X_i .

We estimate the within-firm differences in average promotion outcomes by adding firm fixed effects to (1):

$$E[P_i|X_i, g_i, f_i] = X_i'\beta + g_i'\delta + f_i'\psi, \quad (2)$$

where f_i is a vector of indicators for each firm. The vector ψ captures the firm effects representing inter-firm differences in average promotion outcomes conditional on worker and job characteristics X_i and visible minority status g_i .

Estimate of the economy-wide difference in average promotion outcomes between whites and visible minorities in equation (1), $\hat{\delta}$, captures (a) any systematic differences in sorting of whites and visible minorities into firms offering different opportunities for advancement, (b) the correlation between visible minority status and unobserved worker characteristics related to promotion outcomes (after controlling for X), and (c) firms' preferences for promoting white Canadian-born workers relative to visible minorities. In contrast, the estimate of δ in equation (2), $\tilde{\delta}$, measures conditional white-visible minority differences in average promotion outcomes *within firms* (i.e. (a) is not part of the estimated gap anymore). If $\hat{\delta} < 0$, visible minority Canadian-borns are on average less likely to have been promoted or have been promoted fewer times (economy-wide) than their white Canadian-born peers, conditional on their observed characteristics. If $\hat{\delta} < \tilde{\delta} \leq 0$, then one average visible minority workers are systematically sorted into firms with fewer opportunities for advancement.²⁰ If $\tilde{\delta} = \hat{\delta} < 0$, then we infer that the average economy-wide difference in promotion outcomes for visible minorities relative to white Canadian-born workers results entirely from difference in advancement *within firms* rather than systematic sorting of workers into firms with different advancement opportunities. We use a Hausman test to test the null hypothesis that there is no systematic

²⁰ In this scenario visible minorities experience both economy-wide and within-firm gaps, but the economy-wide gap is larger than the within-firm gap implying that the difference between the two is due to disproportionate sorting of visible minorities into firms with fewer promotion opportunities.

sorting of visible minorities into firms offering different opportunities for advancement (i.e., $\hat{\delta} - \tilde{\delta} = 0$). Under the null hypothesis of no differences between visible minority and white Canadian-borns in sorting across firms, both specifications (1) and (2) produce consistent estimates of the promotion gap, δ . However, the estimate in the specification with firm effects is inefficient due to inclusion of irrelevant variables (i.e. firm indicators). Under the alternative hypothesis of systematic white-visible minority inter-firm sorting, only the estimate from the specification with firm effects is consistent. Pendakur and Woodcock (2010) and Javdani (2015) use similar tests for inter-firm sorting in studies of immigrant-native and male-female wage differences.²¹

We estimate the models of whether there are any differences in wage returns to promotion between white and visible minority Canadian-borns using the exact same empirical strategy explained above. The only difference is that our dependent variable in these models is the change in log-hourly wages between the two interview years, and our variable of interest is the interaction between the promotion indicator and the visible minority indicator. In addition, as it was explained in the data section, we use the longitudinally-linked sample of workers for this part of the analysis.

4. Results

4.1. Probability of promotion, number of promotions, and wage returns to promotion

4.1.1 Overall sample

Table 2 reports differences in the probability of promotion, number of times promoted, as well as returns to promotion between white and visible minority Canadian-borns. The estimates are generated separately for each gender, and each column represents a regression with a different set of control variables. Among the first four columns in table 2 that estimate economy-wide differences (i.e. exclude firm fixed effects), our most preferred specification is the one that excludes controls for occupation and industry (i.e. column 2). Theoretically, we see the potential differential sorting of white and visible minority Canadian-borns across different occupations and industries as a mechanism through which differences in labour

²¹ See Pendakur and Woodcock (2010) for a formal proof of this estimation procedure.

market outcomes between these two groups could manifest themselves rather than an independent explanation. In addition, empirically, we don't see any differences across these specifications and therefore prefer to use a simpler estimation strategy. Estimates reported in column 5 are based on regressions with firm fixed effects and therefore measure within-firm differences between the two groups. As it was described in section 3, examining these estimates and their difference with our estimates in columns 2 (our most preferred specification among models without firm fixed effects), which are summarized in column 6, provides a better picture regarding the role of differential sorting across firms in creating these disparities.

The results reported in columns 1 to 4 of panels A to D suggest that both male and female visible minority Canadian-borns experience a substantial economy-wide difference in the probability of promotion and the number of times promoted compared to their white peers. These results are robust across different specifications. Unconditionally, males (females) are on average 7.6 (3.6) percentage points less likely to have been promoted, and on average have been promoted 0.3 (0.04) fewer times than white Canadian-born males (females). Controlling for personal and job characteristics increases the gap in the probability of promotion for both genders. This might be partly due to the fact that visible minorities are younger than white Canadian-borns, and promotions are more likely to occur at earlier stages of a worker's career. Male (female) visible minority Canadian-borns are 9.9 (8.9) percent points less likely to have been promoted, and are promoted 0.26 (0.12) fewer times, after controlling for personal and job characteristics. As results in columns 3 and 4 suggest, controlling for occupation and industry does not change these estimates.

One of the most distinguished features of promotions is the increase in pay. Therefore, another important dimension that worth investigating is whether white and visible minority Canadian-borns, once promoted, experience different wage returns to promotion. Results reported in columns 1 to 4 of panels E and F suggest that while female visible minorities do not experience large differences in returns to promotion, male visible minorities experience significant differences with their white peers. These differences are robust across different specifications. For example, results reported in column 2 suggest that male visible minorities on average experience an estimated 0.10 log points less wage growth between the interviews when promoted compared to similar white males.

Our finding that men experience larger gaps in probability of promotion, number of times promoted, and returns to promotion, especially within firms, compared to female visible minorities seems to be consistent with the wage gaps male and female visible minorities experience within the same firms with their white counterparts. Using odd-year pooled cross-sections we find that the conditional within-firm wage gaps between visible minority and white males (females) is on average -0.10 (-0.05) log points.

Estimates reported in column (5) that are based on regressions that include firm fixed effects suggest that for men, within-firm gaps in probability of promotion and number of times promoted are as large as the economy-wide gaps (estimates in column 2). Therefore, consistent with the estimated effects of sorting reported in column (6), for men the economy-wide gaps in probability of promotion does not seem to be driven by disproportionate sorting of visible minorities into firms with lower promotion opportunities and seem to operate mainly within firms. On the contrary, for females almost half of the economy-wide gap in probability of promotion is driven by differential sorting of white and visible minority females across firms with different promotion opportunities. In other words, female visible minorities are on average more likely to sort into firms that are less likely to promote their workers (offer fewer promotion opportunities), and this differential sorting accounts for almost half of the economy-wide gap in probability of promotion they experience.

These findings regarding gender differences in the contribution of inter-firm sorting to economy-wide gaps experienced by male and female visible minorities are consistent with Pendakur and Woodcock (2010). They also use the WES to examine wage differences between white and visible minorities throughout the wage distribution and to quantify the contribution of differences in inter-firm sorting to these wage gaps. They find that visible minority women “sort into lower-paying firms than their white counterparts, which accounts for about one quarter of the economy-wide wage gap they face”. They find however that this experience is not shared by visible minority men.

Finally, to make sure our results are not sensitive to our choice of estimator (linear probability model for probability of promotion and OLS for the number of promotions), we re-estimate the first four columns of table 2 using probit model for probability of promotion and Poisson model for the number of

promotions. The results are reported in Table A1 in our online appendix and are almost identical to our results reported in table 2. The reason we use OLS rather than probit or Poisson models is that it is much easier to estimate the models with firm fixed effects.²⁴

4.1.2. Heterogeneity by education (skill) level

Next, we examine heterogeneity in differences in probability of promotion and returns to promotions by looking at different subsamples of workers. From this point on we are not going to report and discuss the estimated differences in the number of times promoted as they consistently tell the same story as the estimated differences in the probability of promotion. We however report these estimates in our online appendix tables A2 to A5.

Results reported in table 3 examine how the estimated differences in probability of promotion and returns to promotion depend on skill level, which we proxy for by education level. Skilled and unskilled workers operate in very different labour markets and therefore the differences we observe in promotion opportunities are likely to be different across these markets. In addition, in terms of policy implications as well as potential explanations, it is important to examine whether these differences in promotions are different between skilled and unskilled visible minority workers. We estimate our models fully interacted with two indicators of whether a worker's highest degree completed is a bachelor's degree or higher, or lower than a bachelor's degree. Therefore, we allow the returns to all the observed characteristics to differ across these two education levels.²⁵

Among males we find that visible minority Canadian-borns with and without a bachelor's degree both experience a substantial gap in the probability of promotion, both economy-wide and within firms. Interestingly, the gap is larger for the more educated subsample (13 versus 9 percentage points for the

²⁴ All procedures that we are aware of that allow estimating probit and Poisson models with firm effects do not allow for individual-level weights that vary within firms. On the other hand, Statistics Canada does not allow us to release any results that do not use employee-level weights in the WES provided by Statistics Canada. In addition, these models often have convergence issues when regressors include a large number of binary indicators, like our specifications.

²⁵ In models with firm fixed effects we restrict these effects to be the same for both education levels conditional on observed characteristics. In other words, firm fixed effects are not interacted with the two education indicators. We also estimate models in which we relax this restriction and we get similar results.

economy-wide gap, and 14.7 versus 8.3 percentage points for the within-firm gap). Consistent with our previous results from table 2, comparing economy-wide and within firm estimates for men suggests that inter-firm segregation does not play any role in observed differences and the gap stems mainly from within-firm differences in probability of promotion between the two groups. Our results also suggest that in both subsamples, male visible minorities experience quantitatively large gaps in returns to promotion. The economy-wide and within-firm gaps are both large, and consistent with the results reported in table 2 the within-firm gaps are larger. The estimated gaps for those with a bachelor's degree or higher are however not statistically significant.

Similar to men, we find that female visible minorities with and without a bachelor's degree both face a substantial gap in probability of promotion, although the gap is not statistically significant for the lower educated subsample. Similar to men, the gap is larger among more educated female workers. We also find that the inter-firm segregation mechanism that we observed for the overall sample of females in table 2 is more pronounced among educated females (although statistically insignificant) and drives around 30 percent of the economy-wide gap in probability of promotion. Finally, consistent with our results for the overall sample in table 2, estimated gaps in returns to promotion for females remain relatively small and statistically insignificant.

4.1.3. Heterogeneity by marital status

We also investigate the heterogeneity in our results by marital status to examine if family responsibilities play any role in the gaps experienced by visible minority Canadian-borns. Recent evidence from Norway suggests that women with families are less likely than other women to move up the career ladder (Kunze 2014). In the context of our analysis, this could be especially insightful for promotion differences experience by visible minority females if they face systematically different family

responsibilities potentially driven by different cultural norms and practices, different family dynamics, or different coordination mechanisms in making collective labour supply decisions by spouses.²⁶

Our results in fact seem to be consistent with this hypothesis that differences in family responsibilities between white and visible minority women could explain some of the promotion gap. We find that for women, both the economy-wide and within-firm gaps in probability of promotion are larger for married visible minorities compared to their single counterparts (-0.107 versus -0.074 for the economy-wide gap, and -0.085 versus -0.039 for the within-firm gap, respectively).²⁷ Also, the estimated gaps experienced by single visible minority women while quantitatively large, are statistically insignificant.

For men we find that while both single and married visible minorities face substantial differences in probability of promotion with their observationally equivalent white peers, both economy-wide and within firms, the gaps are larger among singles (around 13.5 percentage points for singles versus around 10 percentage points for married, both economy-wide and within firms). Similar to our previous results, inter-firm segregation does not seem to play a role in disparities experienced by male visible minorities in either subsample. Therefore, not surprisingly, while family responsibilities could potentially explain some of the promotion gaps faced by female visible minorities, they don't seem to negatively affect married male visible minorities.

In terms of returns to promotion, both married and single visible minority men receive lower returns to their promotions. The gaps are quantitatively large in both subsamples, with within-firm gaps larger than the economy-wide gaps, but both are statistically insignificant for single visible minority men.

4.1.4. Heterogeneity by pay equity policy

Next we examine the relationship between pay equity policy within firms and our estimated differences in promotion opportunities. We should emphasize that sorting of workers between firms with

²⁶ These cultural differences could be re-enforced given the fact according to 2006 Canadian Census 76.2 percent of visible minorities form a union with the same visible minority group and only 3.9% of couples in Canada were mixed unions (a portrait of couples mixed unions, Statistics Canada).

²⁷ Another potential explanation for larger gaps experienced by married visible minority females is stronger employer stereotypes against them relative to singles regarding characteristics that might influence promotion decisions (e.g. labour market attachment).

and without pay equity policy is potentially endogenous and so the empirical relationship we investigate in this section cannot be given a strict causal interpretation and is mainly suggestive. Having said that, firms with effective pay equity policies are more likely to offer similar promotion outcomes to their workers to ensure that workers with similar characteristics receive similar wages. Therefore, a finding that visible minorities perform relatively better in firms with pay equity policy compared to their white counterparts could be suggestive of existence of discrimination against them in firms without pay equity policy.

Consistent with this hypothesis, existence of pay equity seems to have a large impact on differences experienced by male visible minorities. In fact, most of the gap in the overall sample in probability of promotion and returns to promotion seems to be driven by the gap in workplaces without a pay equity policy. For females however, both groups with and without a pay equity policy at their workplace experience a large economy-wide gap in probability of promotion (-0.10 and -0.08, respectively). Consistent with our finding in section 4.1.3, this suggests that for female visible minorities there could be other important factors, such as family responsibilities and lower probability of inter-firm mobility (discussed below), that contribute to these differences.

4.2. Inter-firm mobility - differences in probability and wage returns

One potential explanation for differences in promotion outcomes between white and visible minority Canadian-borns is that visible minorities might be more likely to exploit inter-firm upward mobility as a channel to progress in their career and therefore might not invest much in intra-firm upward mobility. Therefore, to gain a better understanding about differences in intra-firm upward mobility between white and visible minority Canadian-borns it is important and insightful to examine differences in their inter-firm mobility patterns as well.

Table 6 reports estimated differences in probability of changing employer separately by gender. Out dependent variable in panels A and B is an indicator that is equal to 1 if a worker changes employer between the two interview years, and 0 otherwise. In panels C and D we use a similar indicator, but it is now only equal to 1 if a worker changes employer and the change is reported to be voluntary (i.e. due to

the worker quitting her job rather than the job coming to an end). Similar to table 2, different columns report estimates from different specifications. In general, we find no evidence that male or female visible minorities are more likely to switch employer between interviews compared to their white peers. More specifically, we find that there are no differences in probability of changing employer between white and visible minority men. Female visible minorities however seem to be less likely to change employer (the gap is around 5 percentage points). This lower probability of inter-firm mobility among female visible minorities could partly explain why inter-firm differential sorting reported in table 2 and discussed before drives around half of the economy-wide gap in probability of promotion they experience. It seems that white women are more likely to use inter-firm mobility to progress in their careers, which could be partly responsible for their sorting into firms with higher promotion opportunities and subsequently their higher probability of promotion compared to female visible minorities.

We also examine whether white and visible minority workers receive different wage returns when they change employer. These results are reported in table 7 and suggest that for female visible minorities, once we focus on voluntary inter-firm mobility (panel D), there are no differences in wage returns to inter-firm mobility (the estimated coefficients are quantitatively small and statistically insignificant). For male visible minorities, our results in panel C suggest that they receive lower returns to their voluntary inter-firm mobility, although the estimates are statistically insignificant.

Altogether, our results suggest that differences in inter-firm mobility between white and visible-minority Canadian-borns do not seem to be able to justify the differences in promotion opportunities between the two groups. It is difficult to think of supply-side stories that could explain why despite lower promotion opportunities experienced within firms, visible minorities, especially men, are not more mobile across firms to advance in their careers. We suggest that a demand-side model, such as Invisibility Hypothesis developed by Milgrom and Oster (1987) could provide a more compelling explanation for these results. In the next section we use the Milgrom-Oster framework to provide a potential explanation for the results we find and discussed in sections 4.1 and 4.2.

4.3. Potential Explanations

Before we provide some potential explanations for our findings we would like to address an issue that will clarify our interpretation of the results. One potential concern that could be raised regarding our analysis is that we might not be comparing white and visible minority workers on the same career paths or at the same hierarchical levels. It is well-understood that different career paths or hierarchical levels are associated with different promotion rates and returns to promotions. Therefore, one could argue that what we are estimating could partly reflect systematic differences in career paths or hierarchical levels between whites and visible minorities.

First of all, we are not aware of any compelling theoretical or empirical evidence that would make it an appealing concern that there might be systematic differences in career paths or hierarchical levels between observationally-equivalent white and visible minority Canadian-born workers, especially given the fact that our results persist even after controlling for occupation, industry, and firm affiliation. Second, even if these mechanisms could be a driving factor behind our estimated differences in promotion outcomes, we believe that these differences in career paths or hierarchical levels are a channel through which differences in promotion outcomes could manifest themselves, rather than an independent explanation for them. In the absence of any compelling theory or empirical evidence that could explain why workers with different ancestry (white versus visible minority) but the same observed characteristics (including occupation, industry, and firm affiliation) might systematically sort into different career paths or hierarchical levels, we believe those potential differences should be part of the difference under examination since they are a manifestation rather than an explanation of what we are trying to examine.

Nonetheless, to examine the extent to which systematic differences in hierarchical levels between white and visible minority workers drive our results we include a variable in our analysis that proxies for hierarchical position of a worker within her firm. In the WES, firms are asked to report the number of permanent full-time and part-time employees in each of the following annual earnings categories: \$80k and above, \$60k-80k, \$40k-60k, \$20k-40k, \$20k and below. We use this information along with the total

number of employees within the firm to calculate the proportion of workers within firm that are in a higher earnings category.³⁰ Keep in mind that this variable is constructed using the firm's full earnings distribution rather than just the random sample of surveyed employees. Even after controlling for hierarchical level through the inclusion of the aforementioned variable, our results are similar to those reported in table 2.³¹

As it was explained before, we believe it is difficult to come up with supply-side stories that could explain our findings regarding differences in promotions between visible minority and white Canadian-borns. While conditional differences in labour market outcomes between visible minority immigrants and white Canadian-borns, or male and female workers, could be potentially (partly) attributed to factors such as language barriers, limited access to work-related networks, lower returns to foreign education and labour market experience, weaker labour market attachments, differences in bargaining power and degree of competitiveness, etc., these are not issues that could be applied to visible minority Canadian-born workers for the most part.

We suggest however that a demand-side model such as the Invisibility Hypothesis developed by Milgrom and Oster (1987) could provide a compelling and consistent explanation for our findings regarding differences in promotion outcomes between visible minority and white Canadian-borns. Following Waldman (1984) and his emphasize on signaling role of promotions that has significantly influenced the subsequent literature³², Milgrom and Oster (1987) develop a model where promotions are assumed to influence other employers' beliefs about a worker's ability. They also assume that potential employers possess less information about the ability of disadvantaged workers, such as visible minorities in our study or females.³³ This could be driven by various factors such as employers' prejudice and relative lack of

³⁰ For those workers who earn more than \$80,000, since there is no higher earnings category identified by the survey question, we cannot directly calculate the proportion of workers in higher earnings categories. Therefore, for those workers who fall in this category we set the proportion of workers in higher earnings categories to zero.

³¹ These results are not reported here, but are available upon request.

³² See MacLeod and Malcolmson 1988, Bernhardt 1995, Gibbs 1995, Zabochnik and Bernhardt 2001, Owan 2004, Golan 2005 & 2009, Ghosh and Waldman 2010, Cassidy et al. 2012, DeVaro and Waldman 2012, DeVaro et al. 2012, and Zabochnik 2012.

³³ To justify this assumption, Milgrom and Oster argue that "talent is not inevitably and universally recognized, and those with advantaged backgrounds are more likely to be recognized for their abilities."

recognition for disadvantaged workers driven by statistical discrimination or stereotypes, or disadvantaged workers' failure to "toot his own horn" due to cultural taboos or differences, shyness, etc.. Using this framework, Milgrom and Oster (1987) show that the "invisibility" (to use their terminology) of disadvantaged workers, and the fact that promotions enhance visibility, motivate current employers with private information regarding their high-ability but invisible workers to conceal these workers by limiting their promotion opportunities. This will suppress the signals of ability promotions send to other competing employers, and will therefore prevent these workers from being bid away by other firms and also lowers the bargaining power of these workers to negotiate a pay increase.

This framework will therefore produce the following implications that are consistent with our results discussed in sections 4.1 and 4.2. First, visible minority Canadian-borns will be less likely to get promoted compared to their white peers. Second, visible minority Canadian-borns will experience lower returns to promotion since compared to white workers mainly those with high but not very high ability are promoted.³⁴ Third, and consistent with our results discussed in section 4.2, these differences in probability of promotion and returns to promotion will not generate disproportionately higher probability of inter-firm mobility for visible minorities since other employers possess less information about their ability than their current employer and inter-firm mobility is uncertain to improve their match quality and promotion opportunities.

Milgrom-Oster framework is also consistent with our results that male visible minorities are in a more disadvantaged position in terms of probability of promotion, number of times promoted, and returns to promotion, compared to their female counterparts. Based on their model, the larger the difference in the degree of visibility between the two groups, the larger will be the differences in promotion outcomes between them. In our analysis we are comparing visible minority men to white men who are the most advantaged group in the labour market. However, visible minority women are compared to white women

³⁴ In other words, the average ability of promoted white workers will be higher than promoted visible minority workers, which implies visible minorities on average will receive lower returns to their promotion.

which according to extensive evidence are already in a disadvantaged position in the labour market compared to white men. Therefore, it seems reasonable to assert that differences in visibility between white and visible minority male Canadian-borns is larger than the difference in visibility between their two counterpart groups of females. Therefore, the model predicts that differences between white and visible minority men will be larger than differences for women. Another complementary potential explanation for smaller differences experienced by visible minority females is that female-dominated occupations or firms might engage less in discriminatory behaviours against females, and disadvantaged groups in general, and therefore visible minority females might fare better in these occupations or firms compared to their male counterparts who might be competing for promotions in a more “old boys club” environment.³⁵

Our finding that for male visible minorities the gap in promotion opportunities is mainly experienced by those employed at firms without a pay equity policy, although suggestive and not necessarily causal, is also consistent with the Milgrom-Oster framework and the role of employer discrimination in generating promotion disparities. For female visible minorities however, our results that the promotion differences persist in both firms with and without pay equity policies suggests that there could be other important factors contributing to these differences. Another potential factor contributing to these gaps for female visible minorities could be differences in family responsibilities between white and visible minority women. This is consistent with our results that married visible minority women face larger promotion gaps than their single counterparts, an experience that is not shared by male visible minorities. These differences in family responsibilities between white and visible minority females could be driven by differences in cultural norms and practices, family dynamics, or household labour supply decisions, which could deter a higher proportion of visible minority women from seeking promotions to jobs that are

³⁵ Moreover, we also know that women are under-represented in higher-paying jobs, and this under-representation increases as we move up the wage distribution (Albrecht et al. 2003, Garfeazabal and Ugidos 2005; Nordman and Wolff 2009; Datta Gupta et al. 2006; Arulampalam et al. 2007; de la Rica et al. 2008 ; Jellal et al. 2011, Javdani 2015). In these higher-paying jobs promotions are potentially more diverse in terms of wage returns, some promotions could be associated with very large pay increases while some are associated with relatively small changes in pay. Therefore, the gaps in returns to promotion as a result of employers’ discriminatory behaviour would be on average larger for men than for women.

potentially more demanding, less flexible, or require more commitment.³⁶ These potential differences in family responsibilities and their impact on promotion gaps could operate through visible minority women's lower probability of inter-firm mobility (to improve odds of promotion), which results in their disproportionate sorting into firms with fewer promotion opportunities compared to their white peers. This is also consistent with our findings described before.

Finally, our findings that the gaps in probability of promotion are larger among more educated workers, for both male and female visible minorities, are also in line with Milgrom-Oster framework. The model implies that employers discriminatory behaviour will more strongly affect high-ability and high-skilled disadvantaged workers for instance if the current employer believes that they produce more value-added and generate more profit, are harder to employ and replace, are sought more by competitors, or are invested in more in terms of training. Therefore, the model suggests that differences in promotions between visible minorities and whites should be larger among those with higher levels of education, which is what we also find in our analysis.

5. Conclusion

Visible minorities comprise a considerable fraction of the Canadian population, a fraction that has been consistently increasing over time. There is extensive evidence that suggests visible minority immigrants experience substantial disadvantages in the labour market compared to white Canadian-borns and white immigrants. However, there is very thin evidence as to whether these poor outcomes are also faced by visible minority Canadian-borns, especially when we go beyond wage outcomes. To the best of our knowledge, this is the first study that (1) investigates how visible minority Canadian-borns fare in the labour market in terms of promotion opportunities, and wage returns to promotions, compared to their white peers; (2) uses nationally-representative data to examine promotion differences between workers with different ethnic backgrounds; (3) measures the extent to which economy-wide differences in promotions

³⁶ Recent studies by Goldin (2014) and Angelov et al. (2016) have highlighted the roles played by workplace flexibility and collective labor supply decisions made by spouses.

operate between firms (i.e. by disproportionate sorting of visible minorities into firms with lower promotion opportunities) versus within firms; and (4) examines differences in inter-firm mobility in conjunction with intra-firm mobility when comparing promotion opportunities of workers with different ethnicities.

We find that both male and female visible minorities are on average significantly less likely to get promoted, are promoted fewer times, and receive lower wage returns to promotion compared to their white counterparts. These results hold even after we control for occupation, industry, and firm affiliation using firm fixed effects. We also find that these differences are consistently larger for male visible minorities compared to female visible minorities, especially for returns to promotion. Examining differences in inter-firm mobility and returns to inter-firm mobility, we find no evidence that these differences can provide a supply-side explanation for differences experienced by visible minorities in internal markets. Male and female visible minorities are not more likely to change employer, and receive the same returns to inter-firm mobility as their white peers.

We suggest that our results are consistent with a demand-side model such as Invisibility Hypothesis developed by Milgrom and Oster (1987). They argue that some workers, such as females or visible minorities, are less visible in the labour market in that their ability and competency is less visible to other employers. This could be driven by different factors such as employers' prejudice and relative lack of recognition for disadvantaged workers, or disadvantaged workers' failure to "toot his own horn" due to cultural taboos or differences, shyness, etc.. They also assume that promotions serve as a signal of ability and could provide more information to other employers about these less visible workers. Therefore, current employers with private information about their talented less visible workers have the incentive to hide them from competing firms by suppressing this information and limiting their promotion opportunities. This would therefore generate an equilibrium where invisible workers, such as visible minorities, experience lower promotion opportunities with their employers compared to their white peers, and at the same time are not more likely to change employer. In this context, less talented visible minority workers are more easily promoted because the employer is not as worried about losing them to competing firms, and therefore

returns to promotions are also going to be on average smaller for promoted visible minority workers compared to their white counterparts.

Our findings that male visible minorities experience larger differences compared to their female counterparts is also consistent with this model. We are comparing visible minority men to white men who are the most advantaged group in the labour market. On the other hand, visible minority women are compared to white women which according to extensive evidence are already in a disadvantaged position in the labour market compared to white men. It is therefore not surprising that male visible minorities are found to have larger disadvantages in promotions compared to white men, while female visible minorities experience a relatively less disadvantaged position compared to white women. This is consistent with Milgrom-Oster model that predicts the larger the difference in the degree of visibility between the two groups, the larger will be the differences in promotion outcomes between them.

We also find that for female visible minorities, their lower probability of promotion is partly driven by their disproportionate sorting into firms that offer lower promotion opportunities to their workers. This is consistent with our results that female visible minorities are less likely to change employer to potentially improve their promotion opportunities compared to their white peers. One potential explanation for this lower probability of inter-firm mobility and crowding into firms with lower promotion opportunities, that is also consistent with our findings, is that female visible minorities might experience different family responsibilities, for example due to cultural norms or values, or different family dynamics, which might deter them from seeking more demanding jobs or jobs with more commitment and less flexibility. This is consistent with our finding that differences in promotion opportunities are larger for married versus single female visible minorities, an experience that is not shared by male visible minorities.

Moving up on a job is an important contributor not only to wage growth, but also workers' sense of accomplishment and job satisfaction. Our findings highlight that there are important and significant differences in outcomes in internal labour markets between white and visible minority Canadian-borns that require more attention and worth further investigation. We believe these documented differences in promotion opportunities can be interpreted with more confidence as a sign of discrimination against visible

minorities in the labour market since potential explanations such as differences in inter-firm mobility, or those that could apply to visible minority immigrants, such as language and accent penalties, cultural differences, lack of access to work-related networks, and lower returns to foreign education and labour market experience, do not apply to visible minority Canadian-borns for the most part.

In terms of policy implications, to the extent that discrimination is to blame for the adverse promotion experiences of visible minorities, then antidiscrimination policies must ensure that such workers face a level playing field within firms when competing for promotions. In this context, the Milgrom-Oster framework predicts that antidiscrimination policies that set both quotas and wage standards correctly would, in the long run, improve promotion opportunities of disadvantaged workers as well as the efficiency of the job assignments. Finally, efforts by visible minority workers that could improve their visibility and signal their ability to other employers, such as networking, could also help to improve their promotion opportunities with their employers.

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Table 1: Summary Statistics

	Cross-sectional Sample (pooled 1999, 2001, 2003 and 2005 employee cross-sections)				Longitudinal Sample (pooled 1999, 2001 and 2003 employee cross-sections that are also interviewed the year after and do not change employer in the interim)			
	Males		Females		Males		Females	
	White Canadian-born	Visible Minority Canadian-born	White Canadian-born	Visible Minority Canadian-born	White Canadian-born	Visible Minority Canadian-born	White Canadian-born	Visible Minority Canadian-born
Number of observations	37235	735	28315	625	19510	315	14655	270
Hourly wage	22.87	20.55	17.89	16.4	24.02	23.4	18.59	16.12
Ever promoted	0.421	0.345	0.358	0.322	0.272	0.27	0.223	0.16
Number of times promoted	0.97	0.666	0.697	0.653	1.442	0.835	1.002	1.001
Personal Characteristics:								
Years of experience	18.83	10.74	15.18	10.67	20.13	12.36	16.66	12.38
Age	39.85	31.73	39.53	32.25	41.2	33.68	41.38	33.41
18-25 (% in category)*	0.096	0.252	0.118	0.242	0.046	0.125	0.074	0.138
25-29 (% in category)	0.106	0.299	0.107	0.217	0.103	0.251	0.081	0.277
30-34 (% in category)	0.135	0.128	0.115	0.176	0.128	0.203	0.108	0.141
35-39 (% in category)	0.147	0.098	0.141	0.151	0.16	0.128	0.144	0.219
40-44 (% in category)	0.157	0.108	0.164	0.101	0.172	0.193	0.188	0.117
45-49 (% in category)	0.142	0.059	0.148	0.050	0.156	0.044	0.169	0.029
50-54 (% in category)	0.116	0.028	0.11	0.034				
55-59 (% in category)	0.072	0.008	0.069	0.018	0.235	0.054	0.233	0.077
60-65 (% in category)	0.028	0.018	0.027	0.010				
Highest educational attainment								
Ph.D., Master's, or M.D	0.036	0.030	0.032	0.031	0.059	0.046	0.057	0.053
Other graduate degree	0.016	0.008	0.020	0.036				
Bachelor's degree	0.11	0.252	0.124	0.195	0.117	0.343	0.129	0.191
Some university	0.084	0.149	0.101	0.178	0.084	0.115	0.096	0.139
Completed college	0.162	0.162	0.249	0.183	0.16	0.15	0.241	0.16
Some college or trade certificate	0.267	0.198	0.219	0.139	0.284	0.146	0.236	0.139
High school diploma	0.187	0.126	0.18	0.227	0.295	0.197	0.240	0.318
Less than high school*	0.136	0.073	0.073	0.010				
Marital Status								
Married	0.543	0.346	0.509	0.351	0.605	0.425	0.55	0.395
Common law	0.162	0.097	0.154	0.125	0.149	0.063	0.137	0.128
Separated	0.022	0.017	0.032	0.022	0.029	0.042	0.034	0.032
Divorced	0.040	0.009	0.082	0.027	0.039	0.026	0.096	0.025
Widowed								
Single*	0.233	0.53	0.222	0.474	0.177	0.443	0.182	0.419
Number of Dependent Children								
Zero*	0.529	0.761	0.558	0.529	0.681	0.475	0.672	0.527
One	0.159	0.098	0.164	0.159	0.128	0.176	0.124	0.172
Two	0.224	0.088	0.207	0.224	0.124	0.253	0.113	0.225
Three	0.069	0.041	0.059	0.069	0.067	0.096	0.090	0.076
Four or more	0.018	0.010	0.012	0.018				

Table 1: Summary Statistics (Continued)

Job Characteristics:	Cross-sectional Sample				Longitudinal Sample			
	Male		Female		Male		Female	
	White Canadian-born	Visible Minority Canadian-born	White Canadian-born	Visible Minority Canadian-born	White Canadian-born	Visible Minority Canadian-born	White Canadian-born	Visible Minority Canadian-born
Fulltime	0.842	0.769	0.526	0.56	0.868	0.769	0.535	0.531
Member of Union or CBA	0.281	0.222	0.286	0.2	0.303	0.276	0.311	0.176
Tenure with current employer	9.334	5.04	8.136	5.766	11.02	6.302	9.836	7.916
Language most often spoken at work								
French	0.277	0.064	0.246	0.044	0.295	0.058	0.249	0.055
English	0.716	0.927	0.748	0.95	0.698	0.939	0.748	0.935
Other	0.007	0.008	0.006	0.005	0.007	0.002	0.003	0.007
Home and work language not the same	0.031	0.015	0.026	0.010	0.032	0.023	0.024	0.010
Occupation								
Manager	0.168	0.147	0.091	0.096	0.174	0.139	0.096	0.156
Professional	0.126	0.22	0.2	0.168	0.135	0.268	0.212	0.162
Technical/Trades	0.536	0.386	0.316	0.311	0.539	0.414	0.322	0.298
Marketing/Sales	0.033	0.096	0.12	0.146	0.026	0.044	0.105	0.125
Clerical/Administrative	0.064	0.098	0.216	0.241	0.063	0.093	0.213	0.251
Production Worker*	0.072	0.050	0.057	0.037	0.062	0.041	0.050	0.019
Industry								
Resource	0.030	0.009	0.005	0.020	0.064	0.025	0.018	0.021
Labor intensive tertiary	0.052	0.053	0.030	0.029	0.254	0.203	0.083	0.044
Secondary product manufacturing	0.050	0.033	0.017	0.015				
Capital intensive tertiary	0.065	0.076	0.025	0.010				
Primary product manufacturing*	0.064	0.013	0.011	0.010	0.080	0.029	0.015	0.021
Construction	0.083	0.048	0.014	0.020				
Transportation, warehousing, Communication and other utilities	0.153	0.112	0.065	0.067	0.165	0.126	0.069	0.041
Retail trade and consumer services	0.029	0.015	0.011	0.020	0.064	0.025	0.018	0.021
Finance and insurance	0.194	0.285	0.261	0.379	0.158	0.189	0.231	0.434
Real estate, rental and leasing	0.026	0.067	0.066	0.081	0.027	0.059	0.072	0.079
Business services	0.017	0.017	0.018	0.020	0.017	0.029	0.015	0.021
Education and health services	0.090	0.09	0.095	0.139	0.082	0.132	0.088	0.14
Information and cultural industries	0.105	0.134	0.343	0.212	0.111	0.144	0.37	0.217
	0.036	0.043	0.032	0.034	0.039	0.061	0.035	0.024

Notes: * indicates reference category for regressions. All the means are computed using sample weights provided in the data (Statistics Canada does not allow the report of these means without using the weights for the WES). For some of the variables, we had to collapse two or more categories together to make sure the minimum cell size required by Statistics Canada to report sample means is satisfied. These sample means are bolded in the table above.

Table 2: Estimated Relationships between Minority Status and Probability of Promotion, Number of Times Promoted, and Wage Returns to Promotion

	(1)	(2)	(3)	(4)	(5)	(6: sorting) [(2)-(5)]
A. Males – Probability of Promotion						
Visible Minority Canadian-born	-0.076** (0.037)	-0.099*** (0.033)	-0.094*** (0.034)	-0.093*** (0.035)	-0.098*** (0.035)	-0.001 [0.9316]
Number of observations	37972	37972	37972	37972	37972	
B. Females - Probability of Promotion						
Visible Minority Canadian-born	-0.036 (0.053)	-0.089** (0.038)	-0.087*** (0.032)	-0.095*** (0.032)	-0.047 (0.036)	-0.042*** [0.000]
Number of observations	28937	28937	28937	28937	28937	
C. Males – Number of Times Promoted						
Visible Minority Canadian-born	-0.303*** (0.087)	-0.266*** (0.091)	-0.254*** (0.094)	-0.245*** (0.093)	-0.301*** (0.115)	0.035 [0.618]
Number of observations	37972	37972	37972	37972	37972	
D. Females – Number of Times Promoted						
Visible Minority Canadian-born	-0.044 (0.113)	-0.125 (0.078)	-0.116* (0.068)	-0.135** (0.068)	-0.094 (0.072)	-0.031 [0.301]
Number of observations	28937	28937	28937	28937	28937	
E. Males – Wage Returns to Promotion						
Visible Minority Canadian-born*promoted	-0.090** (0.038)	-0.099** (0.040)	-0.103** (0.041)	-0.102** (0.040)	-0.139** (0.055)	0.04 [0.289]
Visible Minority Canadian-born*not promoted	-0.008 (0.017)	-0.021 (0.018)	-0.023 (0.018)	-0.023 (0.018)	-0.016 (0.025)	-0.005 [0.776]
Number of observations	19827	19827	19827	19827	19827	
F. Females – Wage Returns to Promotion						
Visible Minority Canadian-born*promoted	-0.017 (0.044)	-0.022 (0.043)	-0.025 (0.044)	-0.028 (0.042)	-0.055 (0.051)	0.033 [0.228]
Visible Minority Canadian-born*not promoted	-0.027 (0.021)	-0.035 (0.022)	-0.037* (0.022)	-0.033 (0.022)	-0.036 (0.036)	0.001 [0.980]
Number of observations	14926	14926	14926	14926	14926	
Personal and job characteristics	N	Y	Y	Y	Y	
Occupation	N	N	Y	Y	Y	
Industry	N	N	N	Y	N	
Firm Effects	N	N	N	N	Y	

Notes: Standard errors are in parentheses, p-values for the Hausman test for sorting are in brackets. *** indicates statistically significant at 1%, ** indicates statistically significant at 5%, and * indicates statistically significant at 10%. All coefficients are estimated using sampling weights provided by Statistics Canada. Estimates for probability of promotion and the number of times promoted are based on the pooled 1999, 2001, 2003 and 2005 cross-sections. Estimates for wage returns to promotions are based on pooled 1999, 2001, 2003 cross-sections of employees who were also interviewed the year after and have not changed employer in the interim.

Table 3: Estimated Relationship between Minority Status and Probability of Promotion/Wage Returns to Promotion - by Education Level

	Highest Degree Completed < Bachelor's Degree			Highest Degree Completed ≥ Bachelor's Degree		
	Economy-wide (1)	Within firms (2)	Sorting (3)	Economy-wide (4)	Within firms (5)	Sorting (6)
A. Males – Probability of Promotion						
Visible Minority Canadian-born	-0.091** (0.038)	-0.083* (0.043)	-0.008 [0.6909]	-0.129* (0.066)	-0.147*** (0.052)	0.018 [0.6578]
Number of observations	37972	37972		37972	37972	
B. Females – Probability of Promotion						
Visible Minority Canadian-born	-0.076 (0.047)	-0.050 (0.051)	-0.026 [0.1891]	-0.120** (0.058)	-0.078 (0.050)	-0.042 [0.1530]
Number of observations	28937	28937		28937	28937	
C. Males – Wage Returns to Promotion						
Visible Minority Canadian-born*promoted	-0.089*** (0.034)	-0.140* (0.078)	0.051 [0.467]	-0.107 (0.089)	-0.112 (0.071)	0.005 [0.925]
Number of observations	19827	19827		19827	19827	
D. Females – Wage Returns to Promotion						
Visible Minority Canadian-born*promoted	-0.025 (0.050)	-0.062 (0.063)	0.037 [0.334]	0.014 (0.044)	-0.047 (0.053)	0.061** [0.038]
Number of observations	14926	14926		14926	14926	

Notes: Standard errors are in parentheses, p-values for the Hausman test for sorting are in brackets. *** indicates statistically significant at 1%, ** indicates statistically significant at 5%, and * indicates statistically significant at 10%. All coefficients are estimated using sampling weights provided by Statistics Canada. Estimates for probability of promotion are based on the pooled 1999, 2001, 2003 and 2005 cross-sections. Estimates for wage returns to promotions are based on pooled 1999, 2001, 2003 cross-sections of employees who were also interviewed the year after and have not changed employer in the interim. Estimates for different subsamples are generated by fully interacting observed characteristics with appropriate indicators for each subsample (in this case indicators for whether the education level is a bachelor's degree or higher, or lower than a bachelor's degree).

Table 4: Estimated Relationship between Minority Status and Probability of Promotion/Wage Returns to Promotion - by Marital Status

	Married			Single		
	Economy-wide (1)	Within firms (2)	Sorting (3)	Economy-wide (4)	Within firms (5)	Sorting (6)
A. Males – Probability of Promotion						
Visible Minority Canadian-born	-0.097* (0.050)	-0.105** (0.041)	0.008 [0.779]	-0.134*** (0.048)	-0.134** (0.058)	0.000
Number of observations	37972	37972		37972	37972	
B. Females – Probability of Promotion						
Visible Minority Canadian-born	-0.107** (0.044)	-0.085* (0.044)	-0.022** [0.018]	-0.074 (0.074)	-0.039 (0.068)	-0.035 [0.230]
Number of observations	28937	28937		28937	28937	
C. Males – Wage Returns to Promotion						
Visible Minority Canadian-born*promoted	-0.109** (0.050)	-0.125*** (0.043)	0.016 [0.530]	-0.073 (0.060)	-0.137 (0.087)	0.064 [0.309]
Number of observations	19827	19827		19827	19827	
D. Females – Wage Returns to Promotion						
Visible Minority Canadian-born*promoted	-0.025 (0.067)	-0.009 (0.063)	-0.016 [0.482]	-0.036 (0.050)	-0.161 (0.102)	0.125 [0.159]
Number of observations	14926	14926		14926	14926	

Notes: Standard errors are in parentheses, p-values for the Hausman test for sorting are in brackets. *** indicates statistically significant at 1%, ** indicates statistically significant at 5%, and * indicates statistically significant at 10%. All coefficients are estimated using sampling weights provided by Statistics Canada. Estimates for probability of promotion are based on the pooled 1999, 2001, 2003 and 2005 cross-sections. Estimates for wage returns to promotions are based on pooled 1999, 2001, 2003 cross-sections of employees who were also interviewed the year after and have not changed employer in the interim. Estimates for different subsamples are generated by fully interacting observed characteristics with appropriate indicators for each subsample (in this case indicators for whether the worker is married or single).

Table 5: Estimated Relationship between Minority Status and Probability of Promotion/Wage Returns to Promotion - by Existence of Pay Equity Policy Within Firms

	Pay Equity			No Pay Equity		
	Economy-wide (1)	Within firms (2)	Sorting (3)	Economy-wide (4)	Within firms (5)	Sorting (6)
A. Males – Probability of Promotion						
Visible Minority Canadian Born	-0.038 (0.060)	0.009 (0.075)	-0.047 [0.296]	-0.118*** (0.039)	-0.128*** (0.042)	0.01 [0.521]
Number of observations	10145	10145		27525	27525	
B. Females – Probability of Promotion						
Visible Minority Canadian Born	-0.105** (0.048)	-0.105* (0.063)	0.000	-0.082* (0.043)	-0.052 (0.047)	-0.03 [0.113]
Number of observations	7655	7655		20890	20890	
C. Males – Wage Returns to Promotion						
Visible Minority Canadian Born*promoted	0.003 (0.047)	0.003 (0.036)	0.000	-0.144*** (0.034)	-0.195*** (0.059)	0.051 [0.290]
Number of observations	5445	5445		14015	14015	
D. Females – Wage Returns to Promotion						
Visible Minority Canadian Born*promoted	-0.026 (0.067)	0.005 (0.071)	-0.031 [0.187]	-0.032 (0.045)	-0.069 (0.053)	0.037 [0.186]
Number of observations	4145	4145		10435	10435	

Notes: Standard errors are in parentheses, p-values for the Hausman test for sorting are in brackets. *** indicates statistically significant at 1%, ** indicates statistically significant at 5%, and * indicates statistically significant at 10%. All coefficients are estimated using sampling weights provided by Statistics Canada. Estimates for probability of promotion are based on the pooled 1999, 2001, 2003 and 2005 cross-sections. Estimates for wage returns to promotions are based on pooled 1999, 2001, 2003 cross-sections of employees who are also interviewed the year after and have not changed employer in the interim. Estimates for different subsamples are generated by running a separate regression for firms with and without pay equity policies.

Table 6: Estimated Relationship between Minority Status and Probability of Changing Employer

	(1)	(2)	(3)	(4)	(5)
A. Males – New employer					
Visible Minority Canadian-born	0.011 (0.027)	-0.024 (0.028)	-0.019 (0.028)	-0.016 (0.028)	-0.019 (0.034)
Number of observations	21279	21279	21279	21279	21279
B. Females - New employer					
Visible Minority Canadian-born	-0.022 (0.015)	-0.054*** (0.018)	-0.054*** (0.017)	-0.055*** (0.018)	-0.028 (0.023)
Number of observations	16117	16117	16117	16117	16117
C. Males – New employer (employee quit)					
Visible Minority Canadian-born	0.022 (0.027)	-0.008 (0.028)	-0.004 (0.027)	-0.002 (0.027)	-0.013 (0.034)
Number of observations	21279	21279	21279	21279	21279
D. Females – New employer (employee quit)					
Visible Minority Canadian-born	-0.020 (0.013)	-0.047*** (0.016)	-0.047*** (0.015)	-0.048*** (0.016)	-0.027 (0.021)
Number of observations	16117	16117	16117	16117	16117
Personal and job characteristics	N	Y	Y	Y	Y
Occupation	N	N	Y	Y	Y
Industry	N	N	N	Y	N
Firm Effects	N	N	N	N	Y

Notes: Standard errors are in parentheses. *** indicates statistically significant at 1%, ** indicates statistically significant at 5%, and * indicates statistically significant at 10%. All coefficients are estimated using sampling weights provided by Statistics Canada. Estimation sample is based on pooled 1999, 2001, 2003 cross-sections of employees who were also interviewed the year after.

Table 7: Estimated Relationship between Minority Status and Wage Returns to Changing Employer

	(1)	(2)	(3)	(4)	(5)
A. Males – New employer					
New Employer	0.0555*** (0.0172)	0.0453*** (0.0172)	0.0453*** (0.0171)	0.0452*** (0.0171)	0.0491*** (0.0188)
Visible Minority * New Employer	-0.0218 (0.138)	-0.0353 (0.140)	-0.0349 (0.141)	-0.0326 (0.142)	-0.0458 (0.146)
Number of observations	21279	21279	21279	21279	21279
B. Females - New employer					
New Employer	0.0731*** (0.0219)	0.0664*** (0.0224)	0.0665*** (0.0225)	0.0681*** (0.0224)	0.0663*** (0.0250)
Visible Minority * New Employer	0.0932 (0.0867)	0.0819 (0.0862)	0.0816 (0.0868)	0.0827 (0.0868)	-0.0616 (0.158)
Number of observations	16117	16117	16117	16117	16117
C. Males – New employer (employee quitte)					
New Employer	0.0917*** (0.0216)	0.0821*** (0.0215)	0.0825*** (0.0215)	0.0825*** (0.0214)	0.0925*** (0.0227)
Visible Minority * New Employer	-0.0597 (0.149)	-0.0716 (0.152)	-0.0720 (0.154)	-0.0703 (0.154)	-0.0871 (0.162)
Number of observations	21279	21279	21279	21279	21279
D. Females – New employer (employee quitte)					
New Employer	0.0953*** (0.0233)	0.0887*** (0.0237)	0.0889*** (0.0238)	0.0908*** (0.0237)	0.0864*** (0.0269)
Visible Minority * New Employer	0.00860 (0.0754)	0.00105 (0.0768)	0.000694 (0.0775)	-0.00148 (0.0770)	-0.184 (0.171)
Number of observations	16117	16117	16117	16117	16117
Personal and job characteristics	N	Y	Y	Y	Y
Occupation	N	N	Y	Y	Y
Industry	N	N	N	Y	N
Firm Effects	N	N	N	N	Y

Notes: Standard errors are in parentheses. *** indicates statistically significant at 1%, ** indicates statistically significant at 5%, and * indicates statistically significant at 10%. All coefficients are estimated using sampling weights provided by Statistics Canada. Estimation sample is based on pooled 1999, 2001, 2003 cross-sections of employees who were also interviewed the year after.

Table 8: Probability of attrition

	(1)	(2)	(3)	(4)	(5)
A. Males – Probability of Attrition					
Visible Minority Canadian-born	0.024 (0.033)	-0.008 (0.035)	-0.010 (0.035)	-0.007 (0.035)	-0.009 (0.035)
Number of observations	27474	27474	27474	27474	27474
B. Females – Probability of Attrition					
Visible Minority Canadian-born	-0.012 (0.032)	-0.043 (0.033)	-0.043 (0.033)	-0.046 (0.033)	-0.045 (0.033)
Number of observations	20564	20564	20564	20564	20564
Personal and job characteristics	N	Y	Y	Y	Y
Occupation	N	N	Y	Y	Y
Industry	N	N	N	Y	N
Firm Effects	N	N	N	N	Y

Notes: Standard errors are in parentheses. *** indicates statistically significant at 1%, ** indicates statistically significant at 5%, and * indicates statistically significant at 10%. All coefficients are estimated using sampling weights provided by Statistics Canada. Estimation sample is based on pooled 1999, 2001, 2003 cross-sections of employees.