A Comparative Analysis of the Labour Market Performance of University-Educated Immigrants in Australia, Canada, and the United States: Does Policy Matter?[*]

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Abstract:

We examine Census and survey data from Australia, Canada, and the United States spanning the 1991-2011 period to provide new evidence on the potential for immigration policy to influence the labour market performance of skilled immigrants. Our estimates for all three countries point to improvements across cohorts of male university-educated immigrants in employment rates and weekly earnings relative to university-educated native-born men entering labour markets at the same time, the timing of which are broadly consistent with immigration policy reforms. Nonetheless, the gains appear relatively modest in comparison to a substantial and persistent performance advantage of U.S. immigrants, which is evident across the earnings distribution and among immigrants from a common origin country. Given that there is increasingly little to distinguish the Australian and U.S. systems of employment-based immigration, we interpret the U.S. advantage as primarily reflecting the relative positive selectivity of U.S. immigrants owing to higher U.S. returns to skill and the relative economic security of Australia's and Canada's social welfare systems.

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1. Introduction

Recent years have seen a push in the U.S. and in a number of European countries, including the U.K. and Germany, for governments to adopt `point systems' for screening prospective immigrants on human capital criteria. The appeal of a `point system' reflects not only concerns about the potential adverse effects of unskilled migrant flows on public finances and wage inequality, but also the lure of a growing body of research emphasizing the potential for skilled immigrants to raise economic growth through their contributions to international trade flows, entrepreneurship, and innovation. Evidence that skilled immigrants are not only more innovative than their native-born counterparts, but also have the potential to produce positive productivity spillovers on their native-born coworkers (Hunt and Gauthier-Loiselle 2010), goes a long way in making the economic case for immigration where public opinion is growing increasingly critical.

Ironically, at the same time that the U.S. and Europe push for `point systems,' Australia and Canada have been struggling to find policy remedies to address the disappointing labour market performance of their own skilled immigrant populations.[1] Beginning in the late 1990s, Australia made significant revisions to its 'point system' introducing pre-migration language testing and credential assessment. In addition, it implemented a `two-step' immigration system, in large part mimicking the U.S.'s own system of relying on employers, rather than governments, to initially screen skilled migrant workers. In the face of evidence that recent Canadian university-educated immigrants were lagging behind their Australian counterparts (Hawthorne 2008), the Canadian government made similar reforms to its `point system' in the mid-2000s and also began to increasingly draw on skilled migrants employed on temporary work permits and student visas as a source of new permanent residents.

To outside observers, these contrasting policy directions suggest lack of consensus on what optimal immigrant selection policies look like. This is understandable when one considers that the economics literature offers little evidence on what works. In fact, if anything, the evidence suggests that differences in immigrant screening policies are not what underlie differences in the economic performance of immigrants across countries or within countries over time. For example, Duleep and Regets (1992) compare immigrants in Canada and the U.S. using the 1980/1981 Censuses focusing on Asian and European immigrants and conclude that the Canadian `points system' has little impact on immigrant earnings relative to the U.S. system based on family-reunification objectives. Similarly, Antecol, Cobb-Clark, and Trejo (2003) compare the English-language fluency, education, and income of Australian, Canadian, and U.S. immigrants and find little difference in skills among immigrants originating from similar regions.

[1] This irony was pointed out in a recent article in *The Economist* titled "What's the point?" (July 9, 2016).

The economics literature instead emphasizes two key factors largely falling outside immigration policy's scope of influence. First, beginning with the seminal work of Chiswick (1978), studies of immigrant earnings have emphasized the role of differences in the unobservable skills, abilities, or ambitions of immigrants (or what much of the current literature has referred to, generically, as migrant "quality") across and within destination countries arising from migrant's own decisions about whether to migrate and where. Applying a standard Roy model to the migrant's settlement decision, Borjas (1987) shows that immigrants may be positively or negatively selected on their skills depending on the relative incentives of workers from the lower and upper end of the origin-country skill distribution to migrate. For example, destination countries whose social welfare systems offer a safety net to those at the lower end of the income distribution will tend to attract immigrants with relatively lower levels of skill, whereas countries with high returns to skill will tend to attract higher skill migrants. Examining migrant flows to Australia, Canada, and the U.S. prior to 1980, Borjas (1993) finds that while `point systems' may have some potential in raising the observable human capital characteristics of immigrants, earnings differentials between immigrant groups across destination countries largely reflect unobservable skill differences driven by host-country differences in income inequality. More recently, Jasso and Rosenzweig (2008) examine the role of world skill prices and proximity of origin to destination countries and conclude that: "there is no evidence that selection mechanisms used to screen employment migrants … play a significant role in affecting the characteristics of skill migration."

At the same time, an opposing literature has argued that variations in immigrant labour market performance, particularly across arrival cohorts within destination countries, do not reflect migrant "quality" differences, but rather the influence of destination-country labour markets, including differences in wage structures and labour market institutions. In accounting for the deteriorating labour market outcomes of immigrant arrival cohorts through the 1980s and 1990s, U.S. researchers have emphasized broader wage inequality trends affecting all workers, which have exacerbated the relative earnings gaps of immigrants who tend to fall at the lower end of the earnings distribution (Lalonde and Topel 1992; Butcher and Dinardo 2002; Lubotsky 2011). Canadian researchers have, on the other hand, emphasized the deteriorating labour market earnings of all new labour market entrants in Canada, both foreign- and native-born (Green and Worswick 2012). Finally, Antecol, Kuhn, and Trejo (2006), provide evidence that the greater regulation of Australian labour markets results in immigration assimilation in employment rates, whereas in Canada and the U.S. where labour markets are more competitive, immigrant assimilation is more evident in the relative progression of immigrants' weekly earnings.

In this article, we examine comparable Census and survey data from Australia, Canada, and the United States spanning the 1991-2011 period to provide new evidence on the potential for policy to influence the labour market performance of new immigrants. To do so, we consider whether there is evidence of improvements in the relative employment rates and weekly earnings of university-educated foreign-born men arriving in Australia and Canada during the 2000s consistent with their immigration

policy reforms. To attribute the observed changes in immigrant outcomes to policy, one of course has to be careful to account for the effects of concomitant changes in migrant selectivity or broader changes in Australian and Canadian labour markets.[2] To do so, we employ a three-pronged strategy. First, we compare the observed patterns in the relative performance of Australian and Canadian immigrants to their U.S. counterparts, where not only did immigration policy remain essentially unchanged through the 2000s, but changes in income inequality, that we would expect to affect migrant selectivity, were broadly similar (at least beyond the extreme tails of the distribution). Second, we compare the performance of immigrants with a common country of birth - China, India, the Philippines and North America - to account for the effects of selectivity incentives emanating from origin countries. Finally, to net out the effects of changes in destination country labour markets, we follow Green and Worswick (2012) strategy of comparing immigrant earnings and employment outcomes to those of native-born workers entering the destination country labour markets at the same time.

The existing literature reports a significant deterioration in immigrant labour market outcomes through the 1980s and 1990s in Canada (Baker and Benjamin 1994; Grant 1999; Aydemir and Skuterud 2005) and the U.S. (Borjas 1985). In contrast, we find no evidence of deteriorating outcomes through the 1990s and 2000s. Rather, our estimates point to relative gains in the performance of university-educated immigrants in all three countries, the timing of which are broadly consistent with immigration policy reforms, but not with the expected patterns in migrant selectivity based on the relative evolution of income inequality in the three countries. In particular, we identify gains concomitant with the growth of the U.S. H-1B program in the latter half of the 1990s; with the ramping-up of Australia's `point system' and shift towards `two-step' immigration in the late 1990s; and with Canada's similar reforms in the mid-2000s. Nonetheless, these gains appear relatively modest in comparison to a substantial and persistent performance advantage of U.S. immigrants, which is evident across the earnings distribution and among immigrants from the same source country. That this advantage persists even recently, when there is little to distinguish the Australian and U.S. systems of employment-based immigration, suggests to us that the difference primarily reflects the relative positive selectivity of U.S. immigrants owing to higher returns to skill in the U.S. and relative economic security of Australia and Canada. Overall, our findings suggest that while immigration policy has the potential to improve immigrant labour market performance on the margin, this potential is severely limited by large differences in the incentives of migrants of varying abilities and ambitions to settle in particular destination countries.

The remainder of the paper is organized as follows. In the following section we describe the policy, selectivity, and domestic labour market differences that are likely to underlie the observed

[2] There now exist a number of other studies examining the effectiveness of Australia and Canada's recent immigration policy reforms (Cobb-Clark 2003; Hawthorne 2008; Richardson and Lester 2004; Begin, Goyette, and Riddell 2010). However, none of these papers attempt to account for the possible concomitant effects of migrant selectivity and domestic labour markets. An exception is Clarke and Skuterud (2013) which employs a similar strategy to that here, but uses data up to 2006 and does not include the United States comparison group.

differences in the relative labour market performance of university-educated immigrants in Australia, Canada, and the United States. We then describe our empirical strategy for isolating the effect of policy, followed by a discussion of our results. We conclude with a discussion of how immigrant screening policies interact with migrant selectivity and broader features of domestic labour markets to affect the labour market performance of skilled immigrants.

2. Background

In the latter half of the 1990s, Australia made a number of reforms to its skilled-worker immigration program as part of a broader objective to increase the skilled-worker stream share of immigration inflows. In hindsight, these reforms amount to what is arguably the most significant reform of Australian immigration policy since its decision in 1979 to introduce a `point-system' for screening skilled migrants. While the details are complex, and continue to evolve, one can distinguish two distinct pieces that would be expected to influence either the skills of university-educated migrants that are selected or their ability to successfully integrate into Australian labour markets.

First, in 1996 the government introduced a new temporary work visa scheme, known as the 457 visa; enabling employers to more easily recruit foreign skilled workers to fill job vacancies that could not be filled domestically. For July 2009, July 2011, and July 2013, the minimum annual salary for workers issued a 457 visa was $45,220, $49,330, and $53,900 respectively. These rates are below average weekly earnings in the overall Australian population, but considerably above the annual earnings of minimum wage workers. When combined with the longer-term growth in the number of international students studying at Australian post-secondary institutions, many of whom transition to employment 'bridging visas' following graduation, Australia has experienced a substantial increase in the transition of individuals from temporary visas to permanent residency, or what has been coined `two-step' migration. The share of new permanent visas granted to on-shore applicants increased from 22 percent in 1997-98 to 50 percent by 2010-11.[3] Among those admitted in the skilled stream, 60 percent transitioned from a temporary visa by 2011, of which approximately 60 percent transitioned from a temporary 457 visa and 40 percent from an international student visa.

One would expect `two-step' immigrants to have superior long-term labour market outcomes for at least two reasons.[4] Most obviously, employers will tend to have better information about the skills

[3] *Perspective on Migrants 2009* (ABS, Catalog No:3416.0) and *Immigration Update 2010-11* (Department of Immigration and Citizenship).

[4] The empirical challenge in identifying the effects of the shift towards `two-step' immigration is that identifying transitions from temporary visas is typically not possible using the standard survey and Census data used to study immigrant labour market performance. Gregory (2014) uses information on country of birth in the Australian Labour Force Survey (LFS), together with the fact that non-English speaking (NESB) `two-step' migrants are much

of prospective migrants, particularly difficult to measure skills, than what is evaluated in the 'point system,' allowing them to more effectively screen the skills and abilities of migrants whom they demand. Second, by being recruited directly from abroad, immigrants avoid job search at arrival. If pre- and post-migration job search are equivalent, the gains from `two-step' immigration may be only short-term. However, to the extent that there are sunk costs in the migration decision, we would expect the outside options and reservation wages of immigrants who arrive in the destination country without pre-arranged employment to be lower, which may have longer-term effects on earnings. For example, immigrants may be forced to take low-wage `survival jobs' at arrival, but may experience difficulties transitioning out of these jobs (Skuterud and Su 2012).

In 1999, the Australian government also revised the criteria of its point system with the objective to `select for success' among principal applicants (Hawthorne 2005). The key features of the reform were an introduction of pre-migration mandatory English-language tests and a formal system of assessing foreign credentials to insure that the professional skills that were being credited in the selection process would also be recognized by Australian employers. In addition, consistent with the push towards `two-step' migration, the system put increasing emphasis on pre-arranged employment and waived the work experience requirement for students completing qualifications at an Australian educational institution, thereby effectively placing greater weight on Australian qualifications in its points system (Birrell and Perry 2009). Finally, new migrants were restricted from accessing income support programs in their first two years following migration.

One would expect all of these reforms to have improved labour market outcomes for new Australian immigrants. The current evidence evaluating these changes is, however, somewhat mixed. Cobb-Clark (2003) compares employment and wage outcomes of a cohort of Australian immigrants arriving in the early 1990s to a cohort arriving immediately following the 1999 reforms and finds evidence of substantial improvements, but acknowledges that the broader improvement in Australian labour market conditions may have contributed to these gains. Similarly, Hawthorne (2008) compares the performance of a cohort of Australian and Canadian immigrants arriving in the early 2000s, and finds evidence of superior Australian performance, but does not take account of the possible influence of changing migrant selectivity and relative improvements in Australian labour market conditions. Finally, Clarke and Skuterud (2013) use Australian and Canadian Census data spanning the 1986-2006 period to compare the relative employment and earnings performance of immigrants and find little evidence of policy effects once immigrants from similar source countries and broader entry conditions affecting all new labour market entrants and accounted for.

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more likely to have been initially admitted on student, as opposed to employment, visas, to provide evidence on the effects of the `two-step' system. His results suggest an increase in part-time employment rates of migrants admitted on student visas, but little change in the employment rates of those admitted on work visas. He is, however, unable to examine wage outcomes, which are not available in the Australian LFS data.

In response to mounting evidence of the failure of the point system to meet current labour market needs of the economy, in 2002 the Canadian government passed the *Immigration and Refugee Protection Act (IRPA)* shifting policy towards the `human capital model' approach of selecting immigrants based on their general education and experience levels, as opposed to their intended occupations. Combined with an increased points for English- and French-language abilities, including the introduction of pre-migration language tests, the government argued that the revised `point system' grid would better predict long-term labour market success (Ferrer, Picot, and Riddell 2014). While this de-emphasizing of immigrant occupations and current labour market needs can be seen as diverging from the Australian policy direction over the same period, with the 2006 election of a Conservative government, similarities in the general direction of policy reforms continued. In particular, in 2007, the newly elected Conservative government followed the Australian lead by launching a Foreign Credentials Referral Office, intended to provide foreign-trained professionals with occupational credential assessment and referral services on Canadian credential recognition. In addition, the government introduced a number of measures making it easier for companies to recruit foreign workers on temporary work visas, thereby substantially increasing the inflows of temporary foreign workers, as well as the proportion of new permanent residents transitioning from a temporary work permit. However, the rise of `two-step' has been much more modest in Canada. According to administrative data from the Canadian immigration department, in 2011 roughly 20 percent of new Canadian permanent residents admitted through an economic-class program had transitioned from a temporary visa, compared to 10 percent a decade earlier. As in Australia, we expect this series of Canadian policy reforms to have improved the labour market outcomes of new Canadian immigrants arriving, particularly in the latter half of the 2000s.[5] Indeed, there is evidence that both *IRPA* (Begin, Goyette, and Riddell 2010) and `two-step' migrants (Sweetman and Warman 2014) have improved outcomes, although once again it is difficult to ascertain from single-country analyses what impact changes in migrant selectivity and broader labour market conditions may have had on these improvements.[6]

In sharp contrast to Australia and Canada, immigration policy in the U.S. has, as a result of political gridlock in Washington, remained essentially unchanged since passing its *Immigration Act* in 1990. A key objective of the 1990 reform was to shift immigration away from a system based exclusively on family-reunification to a system where selecting migrants on their education and skills plays a larger

[5] While IRPA was passed in 2002, due to a significant backlog in processing permanent-residency applications, there was a significant lag in the implementation of the new point system. According to data from Begin, Goyette, and Riddell (2010), by 2005 only 37% were being screened through the IRPA points grid. We, therefore, expect any benefit if IRPA to be observed in our data primarily in the latter half of the 2000s.

[6] The Conservative government elected in 2006 also introduced a number of new immigration programs beyond the Federal Skilled Worker Program (the `point system'), including a Provincial Nominee (PN) program intended to increase the settlement of immigrants outside Toronto and Vancouver, and the Canadian Experience Class (CEC) program, intended to provide a pathway beyond the standard 'point system' for former international students and temporary foreign workers. However, as discussed in the following section, up to 2011 very few of the male university-educated immigrants that we focus on in our analysis were admitted under these new programs.

role. The screening mechanism introduced was a `two-step' system in which skilled foreign workers are recruited by U.S. employers through temporary work visas, most notably the H-1B visa targeting workers in "specialty occupations," and subsequently transition to permanent residency. The annual number of visas issued was, however, capped and the cap has fluctuated over the years. Lowell (2000) estimates the H-1B stock population taking into account H-1B annual inflows and expected emigration, deaths, and transitions to permanent residence. Her updated results, described in Kerr and Lincoln (2010), point to significant growth through the 1990s, followed by a levelling off after 2000. Indeed, the share of new U.S. permanent residents admitted under the skill-stream increased in the first half of the 1990s, but has hovered around 15 percent since (Office of Immigration Statistics, various years).[7]

The leveling off of the skill-stream share is also confirmed by our own analysis of data from the U.S. Survey of College Graduates. Both the 2003 and 2013 surveys included a question asking all foreign-born respondents, through which immigration program they first entered the United States. Extracting the sample of foreign-born, university-educated, men aged 25-59 (to match the sample of our analysis), the results suggest little change through the 2000s in the proportion of immigrants initially admitted on a temporary, as opposed to permanent, visas, although there has been some shift away from temporary work permits to student visas. Specifically, in 2003, 74% of university-educated male immigrants admitted to the U.S. in the previous 5 years reported initially entering the U.S. on a temporary visa, compared to 70% in 2013. However, 34% of this group in 2013 entered on a student visa, compared to 26% in 2003.

To estimate the impact of Australia's and Canada's recent immigration reforms we need an estimate of how the labour market outcomes of recent Australian and Canadian immigrants *would have* evolved through the 2000s, had their immigration policies not been reformed. The relative stability of U.S. immigration policy, particularly through the 2000s, provides a comparison group to estimate this counterfactual. Of course, U.S. immigrant earnings may have evolved differently either because wage structures affecting all U.S. workers evolved differently, or because factors affecting the selectivity of migration from the countries where U.S. immigrants tend to originate from have evolved differently. As noted above, to account for changes in wage structures we compare new immigrants to native-born new labour market entrants and to account for selectivity factors emanating in source countries, we compare immigrants originating from a common source country. However, this still leaves open the possibility that U.S. immigrant earnings evolved differently through the 2000s due to factors affecting selectivity emanating from within Australia, Canada, or the United States.

Unfortunately, it is difficult to know precisely what the key factors are determining migrants' choices of where to settle. The theory of migrant selectivity emphasizes the influence of inequality on the relative incentives of university-educated migrants with relatively high and low unobservable skills

[7] Office of Immigration Statistics, *Yearbook of Immigration Statistics*, Homeland Security, various years.

to settle in particular destination countries (Borjas 1987). The standard Roy model of migrant selectivity predicts that destination countries with higher levels of inequality, relative to the origin, will tend to attract relatively high-skilled migrants seeking higher returns to their skills, but relatively more so for destinations with higher levels of inequality. Similarly, destination countries with lower levels of inequality, relative to the origin, will tend to attract relatively less-skilled migrants as the relative compression of the income distribution provides a form of insurance for these workers, but relatively less so in destination countries with higher levels of inequality. [8]The question for us then is, what is the difference in the levels of income inequality in Australia, Canada, and the United States and how have they evolved through the 1990s and 2000s.

In Table 1, we report Gini coefficients of the distribution of market and disposable (post tax and transfer) income in the total population, as well as the ratio of the 90th and 10th percentiles of the disposable income distribution. While one could argue that it is the income distribution in the university-educated population that is relevant for migrant selectivity in our analysis, it is unclear that this is the relevant distribution for university-educated immigrants who may anticipate facing challenges in attaining jobs commensurate with their education levels. We, therefore, focus instead on what has happened to inequality in both market (pre-tax and transfer) and disposable (post-tax and transfer) income in the total population using published data from the OECD. The inequality statistics reported in Table 1 have two key features relevant for our analysis. First, income inequality was highest in the U.S. throughout the 1990-2010 period, particularly in disposable income, with little difference between Australia and Canada.[9] Second, inequality grew more in Australia and Canada through the 1990s, but substantially more in the U.S. through the 2000s. These differences suggest that U.S. university-educated immigrants should be relatively positively selected on their skills, in comparison to Australian and Canadian immigrants, throughout our period of analysis. Moreover, this U.S. advantage in immigrant selectivity should have been diminished through the 1990s, but increased through the 2000s.

An examination of Table 1 reveals that income inequality worsened in Australia during the 1990s. Since there was little change in selection policy, at least until the late 1990s, improving outcomes for immigrants during the 1990s would be consistent with this greater inequality. Similarly, in Canada where there was little change in selection policy during the 1990s, improving immigrant outcomes in the 1990s would also be consistent with inequality-induced migrant selectivity. However, through the 2000s, there was little change in selection policy in the U.S. and a considerable worsening of inequality. Over this period, improving outcomes for immigrants in the U.S. would be consistent with this increase

[8] Note that these predictions are based on mean-preserving comparison of income inequality across destination countries. Relative changes in mean income across destination countries will also tend to impact relative selectivity. Comparing differences in income levels is, however, complicated by the need to adjust for purchasing power differences across destination countries.

[9] Greater inequality in the United States, compared to Australia and Canada, based upon disposable income, reflects both higher `pre-tax' returns to skills and lower marginal income tax rates.

in inequality. This implies that evidence of improvements in the relative performance of U.S. immigrants through the 1990s is inconsistent with migrant selectivity, since the relative growth in Australian and Canadian inequality through the 1990s should have advantaged Australian and Canadian immigrants. On the other hand, evidence of relative gains in Australian and Canadian immigrant performance through the 2000s is more consistent with the influence of immigration policy reforms, since the large increase in U.S. inequality through the 2000s should have resulted in a U.S. advantage in migrant selectivity.

The key advantage of comparing immigrants from a common origin country, such as China or India, is that differences in the relative performance of immigrants across destination countries effectively "differences out" the influence on migrant selectivity of factors emanating from the origin country. Nonetheless, in order to help us interpret changes over time in the performance of immigrants within destination countries, it is worth considering how inequality compares between Australia, Canada, and the U.S. and the set of origin countries that we consider.

Based on World Bank data, in the late 1980s China had similar levels of inequality to Australia, Canada, and the U.S., but Chinese inequality grew substantially more in the following two decades.[10] This implies that Chinese immigrants should have been increasingly negatively selected in all three destination countries, but the level of this negative selection should have been greater in Australia and Canada where inequality levels are lower. Indian inequality has similarly grown, but the increase has not been very different from that in Australia, Canada, and the United States. Throughout the period of our analysis, inequality was slightly higher in India than in Australia and Canada, but considerably lower than in the United States. We would, therefore, expect Indian immigrants to the U.S. to be positively selected but negatively selected in Australia and Canada. As for the Philippines, inequality grew through the 1990s, but subsequently decreased through the 2000s returning to its levels of the early 1990s. However, over the entire period it is considerably higher than in all three destination countries implying negative selectivity. Finally, Canadian immigrants to the U.S. should be positively selected, but this selectivity should have been reduced through the 1990s, but increased again through the 2000s. On other hand, U.S. immigrants to Canada should be negatively selected, and this negative selectivity should have increased through the 2000s.

3. Methodology

3.1 Data

Our empirical work examines Census and survey microdata files from the three countries spanning the period 1990-2011. Australia and Canada conduct quinquennial Censuses in common years. For Australia,

[10] The World Bank data (*World Development Indicators*).

we accessed confidential data through the Australian Bureau of Statistics using a remote access data laboratory (RADL) system. In the years 1991 through 2001, these data provide random 1% samples of the Australian population. For 2006 and 2001, a 5% sample is used. For Canada, we accessed the confidential Census master files providing 20% random samples of the population in 1991, 1996, 2001, and 2006. Unfortunately, for 2011 the long-form Canadian Census was replaced with a voluntary survey. The National Household Survey (NHS) sampled one-in-three Canadian households and obtained a 68.6% response rate.[11] Finally, for the United States we use 5% random samples for the 1990 and 2001 decennial census and pooled samples from the American Community Survey (ACS) 1% sample for the years 2005-2006 and 2009-2011.

With some notable exceptions, discussed below, these data provide broadly comparable cross-sectional data on specific demographic and labour force characteristics of individuals, as well as information on country of birth and year of arrival of the foreign-born population. These similarities enable a comparison of immigrant labour market performance across the three destination countries. Several sample restrictions are imposed in order to create consistent samples. First, the sample is restricted to prime-age (25-59) males who have completed a university degree. We restrict attention to prime-age men in order to minimize the influence of sample selection issues arising from potentially differential latent labour force participation propensities of immigrant women. Since we are primarily interested in the potential for immigration policy to influence the labour market performance of new immigrants, we restrict attention to those with university degrees, because this group is most likely to have entered their destination countries as principal applicants through one of the skilled-worker immigration programs.[12] Second, since we are primarily interested in the relative performance of immigrants within their first five years following migration and our first year of data is from 1991, we limit the immigrant samples to individuals who migrated after 1985. Third, in order to avoid spurious correlations in our sample between age at migration and years since migration arising from our age restriction, we also exclude all immigrants whose current age and arrival cohort indicate a possibility that they entered their destination country before the age of 20. Finally, we exclude all Quebec residents from the Canadian sample, because the province of Quebec has historically administered their own immigrant screening policies, which have historically put relatively more emphasis on the French-language abilities of prospective migrants and less on their human capital characteristics. By focusing on Canadian immigrants outside Quebec, our results are not only more likely to reflect the national-level

[11] We use the sampling weights provided with the data, which are designed to insure the national representativeness of the final NHS sample, at least on observable dimensions. However, to the extent that university-educated immigrants who chose not to respond to the NHS were different on unobservable dimensions related to earnings from their native-born counterparts who did not respond, our estimates, particularly for the most recent arrival cohort will be biased.

[12] As evidence, Canadian administrative data indicate that of the 487,845 university-educated men who became new permanent residents between 2000 and 2010, 82% entered as economic-class immigrants, and 77% of this group entered as principal applicants in the Federal Skilled Worker Program (ie., the `point system'). For Chinese and Indian immigrants, these proportions are even higher (91% and 74% for China; 80% and 84% for India).

policy changes described in Section 2, but also increase the comparability of the estimates by focusing on three English-speaking migrant destinations.

There are two differences in the Census data between the three destination countries that are especially relevant to our analysis. First, both the Australian and U.S. questionnaires ask all foreign-born individuals the year in which they first arrived in the destination country, but do not identify whether respondents are currently temporary and permanent residents. The Canadian Census (and 2011 NHS), on the other hand, identify the year in which permanent residency was obtained, but also samples temporary residents and provides an indicator distinguishing them. In order to make the samples as comparable as possible, we include temporary residents in the 1991-2011 Canadian data and use information (available for all respondents) on place of residence one and five years ago to identify their arrival cohort.[13] For current permanent residents, on the other hand, we assume their year of arrival is the year in which they became a permanent resident. As discussed in Section 2, this is less of a problem in the Canadian data, since 'two-step' migration is less common. Also, ignoring the years of Canadian residence prior to obtaining permanent residency should result in the estimated entry earnings of Canadian immigrants being upward biased, so that the relatively large entry earnings gaps of Canadian immigrants that we identify in the data will be, if anything, even larger.

The second inconsistency in our data is that the Canadian and U.S. data identify labour market earnings and weeks worked in the previous year, allowing us to construct weekly earnings. The Australian Census, however, only asks respondents to identify their usual weekly total income, including self-employment income, government transfers, and investment income. To limit the amount of non-earnings income from the Australian data, we further restrict the samples used to estimate the earnings regressions (but not the employment regressions) to full-time wage-and-salary workers. In Canada and the U.S., full-time status is identified off a question asking respondents whether they worked mostly full-weekly hours in the previous year, whereas self-employed workers (who we exclude) are identified as those whose main source of income in the previous year was self-employment income. In Australia, on the other hand, full-time status is identified off a question identifying usual weekly hours in the previous year, while self-employment status is identified off .[14]

Finally, both the Canadian Census and the U.S. Census and ACS files contain population sampling weights, representing the inverse of the probability of inclusion in the sample. We standardize these weights, so that the cumulative sum of the weight variable is equal to the number of observations in each Census year, and use them throughout our analysis.

[13] For temporary residents who report living outside Canada one or five years ago, we assume they arrived in the previous 5 years. For those who responded living in Canada five years ago, we assume they arrived 5-9 years ago.
[14] Note also that in Canada, part-time weekly hours are defined as less than 30, whereas in Australia and the U.S. it is defined as less than 35.

3.2 Empirical Specification

As discussed above, a key challenge in isolating the effects of immigrant screening policies on immigrant labour market outcomes is to account for differences in broader labour market conditions both within and across destination countries. To do so, we follow the standard approach of identifying these conditions off native-born workers in the destination countries. The difficulty is knowing which native-born workers are the most relevant comparison group for informing how new university-educated male immigrants are affected by broader labour market conditions. The standard approach in the literature has been to compare immigrants to similarly aged natives. However, there is evidence from Canada and the U.S. that the value of foreign labour market experience has deteriorated over time and is essentially zero for the most recent cohorts (Friedberg 2000; Aydemir and Skuterud 2005). This suggests that the integration experience of new immigrants is very much like all new labour market entrants. Indeed, Green and Worswick (2012) find evidence that half of the deterioration in the entry earnings of Canadian immigrants through the 1980s can be accounted for by changing labour market conditions affecting all new labour market entrants, as opposed to declining skill levels across immigrant arrival cohorts. There is also evidence that the macroeconomic conditions that immigrants face at entry have long-term effects for immigrant workers (Aydemir 2003), similar to evidence found for new native-born labour market entrants (Oreopoulos, von Watcher, and Heisz 2012).

Following the approach of Green and Worswick (2010) of comparing recent immigrants to native-born new labour market entrants, we examine changes over time in the employment rates and earnings of new immigrants by estimating the following empirical specification:

$$Y_{ijrt} = \alpha + \sum_{j=1}^{6} \beta_j C_j + f(yse_{jrt}) + \sum_{j=1}^{6} \delta_j (C_j \cdot yse_{jrt}) + \pi ur_{rt} + M_{ijr} \cdot \left[\sum_{j=2}^{6} \beta_j^m C_j + \sum_{j=2}^{5} \delta_j^m (C_j \cdot yse_{jrt}) + \lambda fexp_{jrt} + \theta(fexp_{jrt} \cdot yse_{jrt}) \right] + X_r^{'}\gamma + \varepsilon_{ijrt} \quad (1)$$

where Y_{ijrt} is either an employment dummy variable or log weekly real earnings of individual i, from labour market entry cohort j, residing in geography r, observed in year t; C_j are six (6) cohort dummies indicating the period of labour market entry (1981-1985, 1986-1990, 1991-1995, 1996-2000, 2001-2005, and 2006-2010); $f(yse_{jt})$ is quadratic years since labour market entry profile common to immigrants and natives; ur_{rt} is a detrended regional unemployment rate; $fexp_{ijr}$ is years of foreign labour market experience; X_r is a vector of geography dummies indicating the city, state, or province of residence; and ε_{ijrt} is a random error term with a conditional mean of zero.[15]

[15] Real earnings are constructed using either a regional- (Australian), provincial- (Canada), or state-level all-items consumer price index (CPI) with a 2010 base year.

For natives, we assume that the year of labour market entry is the year in which an individual turned 24. Consistent with the overall age restriction, we restrict the native sample to individuals who entered the labour market after 1975 (so the reference cohort is 1976-1980). This allows us to identify the full years-since-entry profile up to age 59. For immigrants, on the other hand, we assume that the year of labour market entry is their year of arrival. Finally, foreign experience is calculated as the difference between an immigrant's age of arrival and the age of 24 and is assumed to be zero for native-born men. Year of arrival is, however, only identified in 5-year intervals for immigrants in the Australian data. To ensure that our results are not being driven by differences in measurement error, we construct similar intervals in the Canadian and U.S. data and use the midpoint of these intervals to obtain a unique year of arrival and age at arrival to define the years since entry (yse_{jt}) and years of foreign experience ($fexp_{ijr}$) variables for immigrants.[16]

Note from equation (1) that we allow the linear term in the quadratic years-since-entry profile to vary by entry cohort for both natives and immigrants. However, to improve the efficiency of the estimates, particularly where we restrict attention to immigrants from a particular source country, we do not allow the effect of foreign experience on entry earnings to vary across immigrant entry cohorts. However, the foreign experience effect is allowed to influence the slope of the immigrant-specific years-since-entry profile. A negative estimate of the coefficient θ suggests lower post-migration wage growth for immigrants who arrive at older ages.

Of primary interest in our analysis is the comparison of the estimates of the immigrant cohort effects β_{jm} for $j=2,\ldots,6$ across destination countries, not only in terms of their historical values, but also their evolution over time. To the extent that immigrants face the same average skill prices as natives, these cohort effects reflect variation in the average quantity of skill of university-educated men. To see this, assume that the level of real weekly earnings is equal to the product of an individual's skill (Q_{ij}) and the price of that skill (P_{ijrt}), where variation in prices across individuals could reflect heterogeneity in the types of skills individuals, outcomes of the job search process, or even discrimination. Log real weekly earnings are then given by $y_{ijrt} = p_{ijrt} + q_{ij}$. If the mean skill of natives does not vary across the native-born entry cohorts so that $E(q_{ik} \mid j=k, M_{ijrt}=0)=E(q_{il} \mid j=l, M_{ijrt}=0)$ for all $k \neq l$, then:

$$\beta_k = E[\, p_{ijr,t+k} \mid j = k, yse_{jrt} = 0, M_{ijr,t+k} = 0) - E[\, p_{ijrt} \mid j = 0, yse_{jrt} = 0, M_{ijrt} = 0) \tag{2}$$

so that the native entry cohort effects capture the change in average skill prices across cohorts relative to the base cohort 0. If we further assume that immigrants face the same average skill prices as natives within any period $t=t^*$, that is $E(p_{ijrt}|t=t^*, M_{ijrt}=1) = E(p_{ijrt}|t=t^*,M_{ijrt}=0)$, then:

$$\beta_{km} = E[q_{ijrt} \mid j = k, yse_{jrt} = 0, M_{ijrt} = 1) - E[q_{ijrt} \mid j = 0, yse_{jrt} = 0, M_{ijrt} = 0), \tag{3}$$

[16] Similarly, the 1991 and 1996 Australian Census files only provide current age in 5-year intervals. We, therefore, restrict the age variable in the 1991 and 1996 Canadian Census and the 1990 U.S. data to the same intervals and define year of entry and years since entry using the midpoints of these intervals.

so that the immigrant cohort effects capture differences in average skill between natives and immigrants who entered the labour market in the same year. Moreover, if mean native skill is cohort-invariant, then variation in the immigrant cohort effects over time must reflect changes in average immigrant skill across entry cohorts. It is in influencing this average skill level of university-educated immigrants that we expect immigrant screening policies to have their primary effect.

The assumption that immigrants receive the same labour market returns to their skills is no doubt a strong one. First, there is compelling evidence from Canada that immigrants face labour market discrimination in recruiting based on their names (Oreopoulos 2011). However, we are primarily interested in how employment rates and earnings of immigrants from a particular origin country have evolved differently in Australia, Canada, and the United States. We find it difficult to think of reasons why differences in the extent of discrimination against immigrants could explain these differences. Of greater relevance, in our view, is the possibility that immigrants face greater job search frictions than similarly-educated natives. For example, migration may involve a sunk cost so that immigrants' outside job options are lower, thereby forcing them to lower their reservation wages. Or perhaps, immigrants lack the social networks of natives, which adversely impacts their job offer arrival rates. Consistent with this idea, Bowlus, Miyairi and Robinson (2016) find that lower job offer arrival rates can account for three-quarters of the earnings gap of Canadian immigrants. It is via this mechanism that we imagine `two-step' migration, which essentially avoids the job search process at arrival, will primarily enhance the labour market performance of immigrants.

We focus on entry employment rates and earnings and not assimilation for a number of reasons. First, assimilation will primarily reflect immigrants' post-migration human capital investments, which we think are less clearly related to the skills that immigrant selection policies, like the `point system,' are intended to screen. Second, our estimates of assimilation are also more likely than our estimates of entry earnings to be biased by non-random out-migration of immigrants. Of course, we are in part relying on established immigrants to identify our cohort effects, but we have explored outmigration rates in our data and they do not appear to be sizable. Lubotsky (2007) finds that outmigration rates from the U.S. are sizable, but we are restricting attention to university-educated men, who may have lower outmigration rates. Finally, as a practical consideration, we are most interested in the relative performance of the most recent arrival cohort (2006-2010), for whom any estimate of assimilation must ultimately be identified off the experiences of earlier cohorts.

We also estimate conditional (on cohort) quantile earnings regressions, which compare percentiles of the earnings of university-educated native-born and immigrant. As before, assuming the native skill distribution is cohort-invariant and that immigrants face the same prices for skills as natives at given points of their distributions, the estimated differentials reflect the relative skills of immigrants across the skill distribution. Given that we expect the criteria of the `point system,' such as English-language skills, to primarily screen skills at the lower end of the distribution, we would expect any

advantage in Australian and Canadian immigrant skills to be most evident at the lower end of the lower end of the distribution.

Finally, income in the Australian Census questionnaire is reported in intervals. The standard approach, in the existing literature, is to transform these intervals into a continuous variable using the category midpoints. This requires that an arbitrary point be chosen for the unbounded top interval. To deal with both types of censoring, we estimate model (1) using a censored linear regression model, which we estimate by maximum likelihood. Specifically, for individual i in census year t we observe whether they have income in some interval (y_L and y_U), where the upper limit is infinity for the top category. The contribution to the likelihood of each individual is $Pr(y_L \leq y_{it} \leq y_U)$. This essentially amounts to estimating an order Probit model with known cut points.

4. Results

In this section we discuss our estimates of the entry-earnings coefficient estimates using our sample of full-time, university-educated, male workers. For natives, the estimates of β_j in equation (1), are estimates of the expected earnings (conditional on geography and the de-trended unemployment rate) of native-born workers in their first 5 years following labour market entry, relative to natives who entered in the 1976-1980 period. The immigrant coefficients, β_{jm}, on the other hand, estimate the expected earnings of immigrants in the 5-year period following arrival, relative to natives who entered the labour market in the same 5-year period.

In Table 2, we report the estimates using the pooled sample of immigrants from all origin countries. The results for the first two cohorts, corresponding to labour market entrants of the late 1980s and early 1990s, show a markedly different starting point for Australian and Canadian immigrants than for U.S. immigrants. Whereas immigrants to these two countries performed poorly relative to native-born new entrants (between 16 and 30 log points lower in Australia and 18 to 20 log points lower in Canada), there is no evidence of a performance gap among university-educated immigrants in the United States. This difference is consistent with U.S. immigrants being relatively positively selected owing to the historically higher levels of U.S. inequality in both market and disposable income.

As noted in a previous section, the period of the late 1980s and early 1990s was characterized by relatively little change in selection policy in Australia and Canada. Moreover, the statistics presented in Table 1 suggest that, during this same period, inequality in Australia and Canada worsened, but particularly in Australia. The improvement in entry earnings in Australia between the 1986-90 and the 1991-95 cohorts (14 log points), and to a lesser extent in Canada (1.5 log points), is consistent with this rising inequality. With both a small increase in inequality in the U.S and the passing of the *Immigrant Act* in 1990, it is not possible to disentangle changes in migrant selectivity from change in selection policy over this period.

The late 1990s and 2000s saw a movement in all three countries towards more aggressive selection policies. In the U.S., the estimates in Table 2 point to a sustained and significant increase in the earnings of immigrants arriving in the period 1996-2000 and a levelling out of relative immigrant earnings through the 2000s. This is consistent with the evidence in Kerr and Lincoln (2010) describing an expansion of the H1-B program in the 1990s and a subsequent levelling off in the 2000s. While the level of the U.S. earnings advantage (relative to Australia and Canada) for immigrants is generally consistent with greater inequality in the U.S., the levelling off in the 2000s, during a period with relatively little change in selection policy and a considerable worsening of inequality, is not consistent with migrant selectivity.

The improvement in entry earnings of successive immigrant cohorts in Australia appears consistent with its immigration reforms, including the increase in `two-step' immigration. This is unlikely to be the result of other changes in the labour market affecting all new entrants, as the entry earnings of new cohorts of Australian-born workers remained stable during the period. The last entry cohort of immigrants to Australia, however, saw a significant deterioration in their entry earnings (we discuss this result in more detail below). Finally, new cohorts of Canadian immigrants continue to perform poorly on the earnings front, with earnings between 20 and 29 log points lower than Canadian-born entrants. However, the reduction of the earnings gap of the last cohort of Canadian immigrants to 13 log points is consistent with reforms to the Canadian `point system' that occurred in the mid-2000s.

The findings of Antecol, Kuhn, and Trejo (2006) using data up to 1990/1991 emphasize the distinction between employment and earnings outcomes in immigrant assimilation patterns. In the remaining columns of Table 2, we report the results from estimating equation (1) using an indicator of employment as the dependent variable. We find no evidence of lower entry effects in Australian employment rates similar to Antecol, Kuhn and Trejo (2006).[17] In fact, unlike in Canada and the U.S., employment rates of Australian immigrants tend to be similar to those of their native-born counterparts and, if anything, have been improving over time consistent, in particular, with the shift towards 'two-step' immigration in Australia. In sharp contrast, the employment rates of Canadian immigrants consistently fall below those of natives entering the labour market in the same period. However, there is some evidence of improvements beginning with the late 1990s Canadian arrival cohort, so that for the most recent cohort the gap is only 4.1 percentage points. Finally, in the U.S., immigrants have historically shown employment rates that are between 3.4 and 4.4 percentage points lower than for new native entrants. However, as in Canada, there is evidence of improvement for more recent U.S. arrivals, so that by the 2000s immigrant employment rates appear equivalent to their native-born

[17] This difference likely reflects both our focus on university-educated workers and our comparison to other native-born labour market entrants, as opposed to similarly-aged natives. Since lower entry effects in employment rates, relative to Canada or the United States, are not evident for the earliest cohort, 1986-1990, the difference in our results is unlikely to reflect our updated data, most of which come from a period after Australia made significant steps to deregulate their labour markets, including dismantling much of its awards system for determining wages within sectors.

counterparts. Once again, these patterns are broadly consistent with the evolution of immigration policy reforms, in particular the growth in H-1B visas during the late 1990s.

To the extent that migrant selectivity also affects immigrant employment propensities, the results in the last three columns of Table 2, at least for Australia, are expected. The improvement in relative employment rates in the 1990s are consistent with greater migrant selectivity associated with rising Australian inequality and very little change in immigrant selection policy, while the improvements in the 2000s, they are consistent with changes in selection policy and the expansion in `two step' migration and a relatively small change in inequality. Similarly, with the exception of the deterioration in employment rates for the 1991-95 cohort, who entered the Canadian labour market during a particularly severe and prolonged recession, the observed patterns for Canada are consistent with our expectations. Finally, for the U.S., the observed changes over the 1990s are not consistent with the expansion of the H-1B program and relatively little change in inequality. However, the improved relative employment outcomes for immigrants over the 2000s are consistent with the influence of the H-1B program and worsening inequality.

As for the poor earnings performance of the most recent Australian immigrant arrival cohort, without any offsetting improvement in employment rates, we think there are two contributing factors. First, there has been a compositional change in the source country distribution between the cohorts arriving in 2001-05 and 2006-10. Importantly, the share of immigrants from India increased from 15.2 percent for the 2001-05 cohort to 23.3 percent for the most recent arrival cohort. Immigrants from India typically earn between 20-27 log points less than the native-born. Excluding immigrants from India, reduces the estimated entry effect for the most recent cohort from -0.149 to -0.096 log points. Second, in 2001 Australia introduced a pathway for international students to gain permanent residency by providing additional points for education completed in Australia and relaxing the requirement that applicants have relevant work experience in their nominated occupation. Immigrants transitioning from a student visa to permanent residence mainly applied under the independent skill class which does not require sponsorship by an employer.[18] In 2009, this pathway was restricted through a dismantling of the Migrant Occupation in Demand List (MODL). Data on the share of visas granted onshore under the skilled independent class in the total skill class show a considerable and sustained increase from 2001 to 2009 consistent with this policy, followed by a dramatic and sustained drop. In order to gain permanent residence under this policy, applicants needed to apply within six months of obtaining their educational qualification. Consequently, the deteriorating entry earnings for the most recent arrival cohort are

[18] For example, in 2011 approximately 60 percent of immigrants who transitioned to permanent residence from an international student visa applied under the skilled independent class (*2010-11 Migration Program Report*, Department of Immigration and Citizenship).

consistent with a greater share of new immigrants transitioning from students and entering the labour market without a job offer.[19]

Overall, the results from Table 2 point to a substantial performance advantage for U.S. university-educated immigrants, in comparison to Australian and Canadian immigrants. There is also evidence that recent policy reforms in Australia and Canada have narrowed this gap to some extent, but it remains substantial. In Figure 1, we examine whether these patterns are different at the lower and upper ends of the earnings distribution by plotting the estimated entry effects from quantile regressions at the 10th, median, and 90th percentiles of the earnings distribution. The complete set of estimates from these regressions and their standard errors are reported in appendix Table 1. [20]

Figure 1 reveals two main results informing our analysis. First, in all three destination countries the magnitudes of the immigrant earnings gaps are larger at the lower end of the distribution than at the top. For Canada, the gaps are particularly large. Specifically, the estimates predict that among Canadian immigrants who arrived in the 2001-2005 period with no foreign work experience facing the sample average unemployment (8.55 percent), the 10th percentile of log weekly real earnings is 5.52, or $7.13 per hour at a 35-hour workweek. This falls below the 5th percentile of the overall male native-born earnings distribution (including all education groups). Second, to the extent that the improvements in immigrant entry earnings identified in Table 2 reflect policy reforms, it appears that policy effects were not uniform along the immigrant earnings distribution. In Australia, the gains are initially largest at the lower end of the distribution, arguably most consistent with the ramping of its `point system' criteria, but are more robust in the middle of the distribution, perhaps reflecting the growth of `two-step' immigration. Unfortunately, due to the censoring of income data in the Australian Census, we are unable to obtain Australian estimates for the 90th percentile. However, the comparison of the 10th and median estimates does suggest the deterioration for the most recent cohort was concentrated at the lower end of the distribution.

In Canada, the improvement for the most recent arrival cohort is more evident at both the lower and upper end of the distribution than in the middle. While we would expect pre-migration

[19] There is also some evidence that immigrants from this most recent arrival cohort are being sorted into lower-paying occupations. Controlling for broad occupation reduces the estimated entry effect for the most recent cohort from -0.149 to -0.079. Moreover, controlling for broad occupation and excluding India reduces the estimated entry effect for the 2006-10 cohort by almost 70%.

[20] The income data in the Australian census is interval coded and top-coded. Once attention is restricted to university educated male workers, there are a considerable number of both native-born and immigrant observations that are censored from above. In the presence of considerable real wage growth during the 2000s, this censoring becomes particularly important in the 2011 census where the top codes remain the same as those in 2006. As a result, it is not possible to estimate a conditional quantile regression for the 90th percentile for Australia. In order to estimate the quantile regressions, the expected income within each (income) interval is estimated by estimating an interval regression with no covariates. This calculates $E[ln(Y_{ijrt})|ln(Y_L \leq ln(Y_{ijrt}) \leq Y_U)]$. Since the interval regression is based upon a normal distribution for $ln(Y_{ijrt})$, this expectation only depends upon the estimated first and second moments of the normal distribution. This expected income within an interval is used as the dependent variable in the quantile regressions.

language tests and credential assessment to improve earnings at the lower end of the distribution, the relative gains at the upper end of the distribution are more surprising. Moreover, as a result of these gains, for the most arrival cohort (2006-2010) there is little difference in the performance of Canadian immigrants at the 90th percentile relative to their U.S. counterparts. Rather, the large performance advantage of U.S. immigrants appears to primarily reflect much lower earnings of Canadian immigrants at the lower end of the distribution. This disadvantage at the lower end is also apparent in the Australian-U.S. comparison. Given that one would expect the `point systems' of these countries to primarily affect earnings by screening out migrants who are expected to be particularly unsuccessful, the historically larger gaps at the lower end in Australia and Canada, appear more consistent with migrant selectivity driven by differences in income inequality across destination countries.

Finally, in the U.S. the improvements in immigrant earnings in the late-1990s appear strongest in the middle and top of the distribution. This is broadly consistent with the fact the hypothesis that these gains, at least in part, reflect the growth of the H-1B program in the late 1990s, since one would expect the H-1B program, which targets specialty occupations, to primarily boost average immigrant earnings by increasing the inflow of immigrants at the upper end of the earnings income distribution.

The current literature emphasizes the importance of source-country distributions in understanding differences in the performance of immigrants across destination countries. Moreover, the analysis of Borjas (1993), and more recently Clarke and Skuterud (2013), suggest that `point systems' work primarily by shifting the source-country distribution immigrants. However, an important distinguishing feature of our analysis is our focus on university-educated workers. It turns out that this focus also serves to significantly narrow differences in the origin-country distributions of Australian, Canadian, and U.S. immigrants. The largest differences are that Australia receives more university-educated immigrants from Europe and Oceania (24.3 and 5.1 percent, respectively for the most recent cohort, compared to 14.8 and 1.5 for Canada, and 16.8 and 1.3 for the U.S.); Canada receives more from North Africa and the Middle East (10 percent of the most recent cohort, compared to 2.9 for Australia and 1.5 percent for the U.S.); and the U.S. receives more Latin American migrants (17.8 percent of the most recent cohort, compared to 7.6 percent for Canada and 3 percent for Australia). Moreover, there is relatively little change over this period in the source country distributions, with the exception of a shift away from European towards Asian immigration that is evident in all three destination countries.

Despite the relative similarity of the source-country distributions in our university-educated sample, it is possible for small differences in source countries to have comparatively large effects on average immigrant performance if migrant selectivity is evolving differently across countries. For example, if inequality has always been higher in Latin America than in Australia, Canada, and U.S., but it increased less in Latin America through the 1990s and 2000s, we would expect Latin American migrants to all three destination countries to be less negatively selected in the late 2000s than in the early 1990s. However, since a larger share of U.S. immigrants has always come from Latin America, this change in migrant selectivity will improve the average relative earnings performance of all U.S. immigrants more.

To insure that the improvements in immigrant outcomes that we identified in Table 2 reflect the immigration policy reforms, as opposed to migrant selectivity, we compare the relative performance of immigrants originating from the same country. By doing so, any effect of migrant selectivity should reflect "push" and "pull" factors emanating from the destination, and not the origin, country

Figure 2 shows the relative immigrant entry earnings estimates by country of origin. We perform the analysis for three countries of origin with large enough samples to obtain statistically meaningful estimates: China, India and the Philippines. We also add North America as an additional group that includes U.S. immigrants in Canada, Canadian immigrants in the U.S., and Canadian and U.S. immigrants in Australia. In each graph, the first group of bars shows the entry earnings of different cohorts of immigrants to Australia; the second group show similar estimates for Canada; and the third group shows the corresponding estimates for the United States. The estimated coefficients and standard errors are reported in Table 2 in the appendix.

Chinese immigrants fare substantially worse in Australia than in any other destination country, and much worse than the average immigrant to Australia. However, their entry earnings have been improving for successive cohorts, which is consistent with selection policies increasing requirements for language and the shift toward `two-step' immigration. Chinese immigrants in Canada also suggest a trend towards improving relative entry earnings. However, the evolution is complicated by a substantial deterioration for the 2001-2005 entry cohort. This deterioration reflects the large increase through the latter half of the 1990s in Canadian immigrants trained in STEM fields and the subsequent downturn of the IT sector in the early 2000s (Picot and Hou 2009). Moreover, the gain for the most recent cohort appears smaller for Chinese immigrants than in the population of all immigrants. Finally, Chinese entry earnings also improved in the U.S. between the late 1980s and early 1990s. The magnitude of the improvement was substantial (from 7 log points below the native-born benchmark to 7 log points above) and remained relatively stable over time, but was smaller in magnitude than what was observed in the full population of all university-educated immigrants. However, as in the full population, the results for Chinese immigrants point to a substantial U.S. performance advantage, which has persisted through the 1990s and 2000s.

Are the patterns in Figure 1 consistent with the observed evolution of inequality? Given the larger increase in Chinese inequality through the 1990s and 2000s (Sicular 2013), Chinese immigrants should have become increasingly negatively selected. While the evidence in Figure 1 is consistent with Chinese migrants that are less negatively selected in the United States, there is no evidence of Chinese immigrants becoming more negatively selected. Instead, there is evidence of a common improvement for Chinese immigrants arriving in the late 1980s and early 1990s. This pattern of Chinese entry earnings is more consistent with the evolution of immigrant selection policies in the three destination countries.

With the exception of the U. S for the early 1990s, the entry earnings of successive cohorts of Indian immigrants appear remarkably constant. Over our sample period, the level of inequality in India

exceeds that in Australia and Canada, but is less than the level of inequality in the U.S. The migrant selectivity hypothesis implies Indian immigrants to the U.S. should be positively selected and negatively selected in Australia and Canada. The entry earnings in Figure 2 are consistent with this ranking of Gini coefficients. Moreover, over the sample period, inequality in India grew at approximately the same rate as that in Australia, Canada, and the U.S. (Topalova 2008). Overall, the patterns for the entry earnings for Indian immigrants appear consistent with the long-run differences in the level of inequality and the relative ranking of the Gini coefficients between India and the destination countries. Despite considerable developments in immigrant selection policy in Australia, these policies seem somewhat ineffective at improving entry earnings for Indian immigrants. The exception is the improvement in entry earnings in the U.S. in the early 1990s, concomitant with the expansion in the H1-B program. There is also some evidence that the changes in immigration policy have led to some improvements in entry earnings for the most recent arrival cohort.

Finally, Filipino immigrants show, on average, lower entry earnings than any of the other groups we examine here. However, there are important differences in the evolution of their performance over time. Like Chinese immigrants to Australia, Filipino new entrants traditionally performed worse than the average immigrant to Australia. However, each cohort improved entry earnings over the 1990s, from more than 50 log points lower earnings than the native born to around 20 log points lower by 2010. Filipino immigrants to Canada earned substantially lower earnings (50 log points lower) than the native born and only a slight improvement can be observed for the latest cohort. The improvement in earnings observed for the average immigrant to the U.S. does not apply to Filipino immigrants, who typically perform below or at the same level than the native born.

Similar to China, the level of inequality in the Philippines is greater than that for Australia, Canada, and the United States. The migrant selectivity hypothesis implies that immigrants from the Philippines should be negatively selected. In addition, inequality in the Philippines grew at approximately the same rate as that in Australia, Canada, and the U.S., implying little change in the (negative) selectivity of immigrants. In light of this, the migrant selectivity hypothesis would predict relatively less negative selectivity in the United States, relative to Australia and Canada, with little change in the entry earnings for successive arrival cohorts. The timing of the considerable improvement in the entry earnings for Filipino immigrants to Australia in the later 1990s, and the improvement for Filipino immigrants to Canada for the most recent cohort, is consistent with the evolution of selection policies in these destination countries

One possibility we have not considered so far, is that the selection process is affecting the occupational backgrounds of immigrants or their occupational choices following migration. In Canada, Asians arriving during the 1990s and early 2000s were highly concentrated in information (IT) sector, whereas Filipino university-educated men concentrated in less skilled occupations unlikely to yield high entry earnings. Similarly, the improvement in immigrant entry earnings in the U.S. appears to be driven by the performance of Indian immigrants, which have been concentrated in highly paid occupations in

STEM fields (Borjas and Friedberg 2009). To take a closer look into this possibility, we consider entry earnings of workers in STEM and non-STEM occupations. Results from this analysis can be seen in Table 3, where the first 26 columns report estimates for the subsample of STEM workers and the last 3 columns for non-STEM workers.

The results in table 3 show that most of the trends we have discussed here are to a great extent a phenomenon of STEM related occupations. [21] The superior entry earnings of immigrants to the U.S. are almost exclusively associated with STEM occupations, consistent with the influence of the H-1B program. In contrast, the pattern in entry earnings in Australia is somewhat similar between STEM and non-STEM occupations, which we might expect given that the Australia's 457 program has been less concentrated among workers in STEM fields. In addition, that the effect of ramping up Australia's `point system' to have been larger among STEM-employed immigrants. Finally, the improvement in entry earnings of the most recent Canadian cohort is evident among immigrants employed in both STEM and non-STEM occupations. As in Australia, this appears consistent with policy reforms having broad effects.

5. Conclusion

There are two main findings of our analysis. First, in contrast to much of the current literature, we find evidence of improving relative labour market earnings of immigrant university-educated men through the 1990s and 2000s in Australia, Canada, and the United States. Moreover, the timing of these gains appears broadly consistent with the immigration policy reforms within these countries: the expansion of the H-1B program in the U.S. in the late 1990s; the ramping up of Australia's point system and shift towards `two-step' migration in the late 1990s; and the broadly similar policy reforms in Canada in the mid-2000s. However, despite these gains, our analysis also points to a much larger and persistent performance advantage in the full-time earnings of university-educated immigrant men in the United States. This advantage is evident even among immigrants from the same source country and tends to be larger among immigrants employed in non-STEM jobs and at the lower end of the earnings distribution.

One interpretation of the exceptional performance of U.S. skilled immigrants is that `two-step' immigration, which accounts for the migration pathway of roughly three-quarters of the U.S. immigrants in our sample, leads to better outcomes, because immigrants avoid job search at arrival. There are two reasons we think this interpretation is lacking. First, we find no evidence of a U.S. advantage in employment rates among the most recent cohorts, particularly in comparison to Australia. Rather the U.S. advantage is evident only in full-time earnings. Second, the substantial U.S. advantage persists even as the importance of `two-step' immigration in Australia, and to a lesser extent Canada, has converged to the United States. If the U.S. advantage simply reflected the potentially long-term effects of job

[21] In a similar model to that estimated in Table 1 where we include controls for broad occupational category, entry earnings improve for all cohorts in all countries, again suggesting that the occupational composition of immigrants is important. These results are available upon request

search at arrival for Australian and Canadian immigrants, who have historically arrived without pre-arranged employment, we would expect the earnings performance of Australia's most recent arrival cohorts, who have superior employment outcomes to their U.S. counterparts, to be much closer in magnitude to the U.S. estimates.

It also seems unlikely to us that the large U.S. performance advantage reflects either the beneficial effects of basing immigrant selection on family-reunification objectives, emphasized by Duleep and Regets (1992), or lower levels of labour market discrimination in the United States. Less than one-quarter of our U.S. sample initially entered the U.S. as permanent residents. Therefore, less than one-quarter of our U.S. sample are likely to be family-stream immigrants (since there are many other direct pathways to a `green card,' including humanitarian and various employment-based programs). In comparison, 13 percent of new permanent residents in Canada through the 2000s entered under a family-stream program.[22] Since, family-stream migrants are likely to comprise a similar small share of our Australian, Canadian, and U.S. samples, it seems highly unlikely that the large difference in their performance reflects these migrants. We also find it difficult to conceive of reasons why Indian, Chinese, or Filipino university-educated immigrants would experience more discrimination in Australian and Canadian labour markets than in the United States. Certainly, we are not aware of any evidence supportive of this rationalization of our findings.

While we cannot rule out that differences in entry earnings between countries do not partially reflect skill prices, in our view, the substantial earnings performance advantage of U.S. immigrants appears most consistent with the hypothesis that U.S. university-educated migrants are relatively positively selected owing to persistently higher levels of economic inequality in the U.S. than in Australia and Canada. Moreover, the fact that the performance advantage is largest at the lower end of the earnings distribution, suggests that the U.S. advantage is primarily driven by the relative economic security of Australia's and Canada's more generous social welfare systems, and the relative negative migrant selection it induces, as opposed to higher skill prices in the United States.

[22] Unfortunately, we were unable to obtain similar estimates of immigration pathways for university-educated men in Australia.

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Table 1: Income inequality in Australia, Canada, and the United States, 1990-2010.

	Gini – market income			Gini – disposable income			P90/P10 – disposable income		
	AUS	*CAN*	*USA*	*AUS*	*CAN*	*USA*	*AUS*	*CAN*	*USA*
1990	0.422	0.403	0.450	0.279	0.287	0.349	4.0	3.8	5.6
2000	0.476	0.440	0.476	0.317	0.315	0.357	4.3	4.0	5.4
2010	0.469	0.447	0.499	0.334	0.319	0.380	4.5	4.1	6.1
1990s change	+0.054	+0.037	+0.026	+0.038	+0.028	+0.008	+0.3	+0.2	-0.2
2000s change	-0.007	+0.007	+0.023	+0.017	+0.004	+0.023	+0.2	+0.1	+0.7
Total change	+0.047	+0.044	+0.049	+0.055	+0.032	+0.031	+0.5	+0.3	+0.5

Notes: Income is annual individual equivalent (household income divided by the square root of household size) income in the total population.
Source: OECD database on income distribution (IDD). 1990 numbers for USA is for 1989. 1990 numbers for Australia are from Table 4.5 in Johnson and Wilkins (2006).

Table 2: Relative immigrant earnings and employment rates

	EARNINGS						EMPLOYMENT					
	AUS		*CAN*		*USA*		*AUS*		*CAN*		*USA*	
Natives:												
cohort 81-85	0.066	0.027	0.022	0.013	0.085	0.015	-0.029	0.011	-0.041	0.004	-0.016	0.005
cohort 86-90	0.073	0.021	-0.029	0.015	0.067	0.016	-0.017	0.010	-0.028	0.005	-0.022	0.005
cohort 91-95	0.061	0.017	-0.106	0.016	0.139	0.017	-0.012	0.009	-0.032	0.006	-0.025	0.006
cohort 96-00	0.075	0.018	-0.060	0.017	0.132	0.018	-0.013	0.009	-0.039	0.007	-0.031	0.006
cohort 01-05	0.068	0.015	-0.131	0.018	0.102	0.022	0.008	0.008	-0.042	0.008	-0.049	0.008
cohort 06-10	0.089	0.013	-0.042	0.021	0.073	0.021	0.014	0.007	-0.043	0.008	-0.064	0.008
yse	0.039	0.001	0.046	0.002	0.064	0.002	0.005	0.001	0.004	0.001	0.005	0.001
$yse^2/100$	-0.059	0.005	-0.072	0.004	-0.125	0.000	-0.023	0.002	-0.026	0.001	0.000	0.000
cohort 81-85 * yse	0.000	0.001	0.003	0.001	-0.002	0.001	0.002	0.000	0.002	0.000	0.001	0.000
cohort 86-90 * yse	0.003	0.001	0.007	0.001	0.002	0.001	0.001	0.000	0.001	0.000	0.001	0.000
cohort 91-95 * yse	0.009	0.001	0.017	0.001	-0.003	0.001	0.000	0.001	0.001	0.000	0.000	0.000
cohort 96-00 * yse	0.014	0.002	0.019	0.001	-0.002	0.002	0.000	0.001	0.001	0.001	0.001	0.001
cohort 01-05 * yse	0.027	0.002	0.038	0.002	-0.003	0.003	-0.001	0.001	0.001	0.001	0.002	0.001
cohort 06-10 * yse	0.040	0.003	0.039	0.005	-0.016	0.006	-0.001	0.001	0.002	0.002	0.004	0.002
Immigrants:												
cohort 86-90	-0.299	0.034	-0.196	0.013	-0.012	0.013	-0.032	0.016	-0.050	0.005	-0.053	0.005
cohort 91-95	-0.157	0.039	-0.181	0.014	0.013	0.017	-0.012	0.016	-0.091	0.005	-0.055	0.006
cohort 96-00	-0.095	0.034	-0.210	0.014	0.119	0.013	-0.012	0.013	-0.063	0.005	-0.085	0.005
cohort 01-05	-0.041	0.020	-0.285	0.016	0.043	0.022	0.000	0.008	-0.054	0.006	-0.026	0.009
cohort 06-10	-0.149	0.012	-0.132	0.013	0.123	0.015	0.005	0.004	-0.041	0.004	-0.037	0.007
cohort 86-90 * yse	0.007	0.002	-0.003	0.001	-0.007	0.001	0.001	0.001	0.002	0.000	-0.002	0.000
cohort 91-95 * yse	-0.001	0.003	-0.005	0.001	-0.005	0.002	0.001	0.001	0.006	0.000	0.000	0.001
cohort 96-00 * yse	-0.006	0.004	-0.004	0.002	-0.013	0.002	0.001	0.001	0.006	0.001	0.005	0.001
cohort 01-05 * yse	-0.024	0.004	0.008	0.003	-0.012	0.004	0.001	0.001	0.008	0.001	0.001	0.002
fexp	0.026	0.001	0.010	0.001	0.009	0.001	-0.002	0.000	-0.005	0.000	-0.003	0.000
(fexp*yse)/100	-0.179	0.013	-0.116	0.008	-0.152	0.008	-0.024	0.005	0.002	0.003	0.000	0.000
unem rate	-0.004	0.002	-0.022	0.001	-0.003	0.001	-0.005	0.001	-0.003	0.000	-0.002	0.000
Native R^2			0.129		0.073		0.014		0.014		0.014	

Immigrant R^2		0.038	0.024	0.016	0.026	0.012
Native sample	42,570	435,245	186,391	61,309	518,930	214,231
Immigrant sample	16,521	149,025	122,029	23,292	204,295	144,315

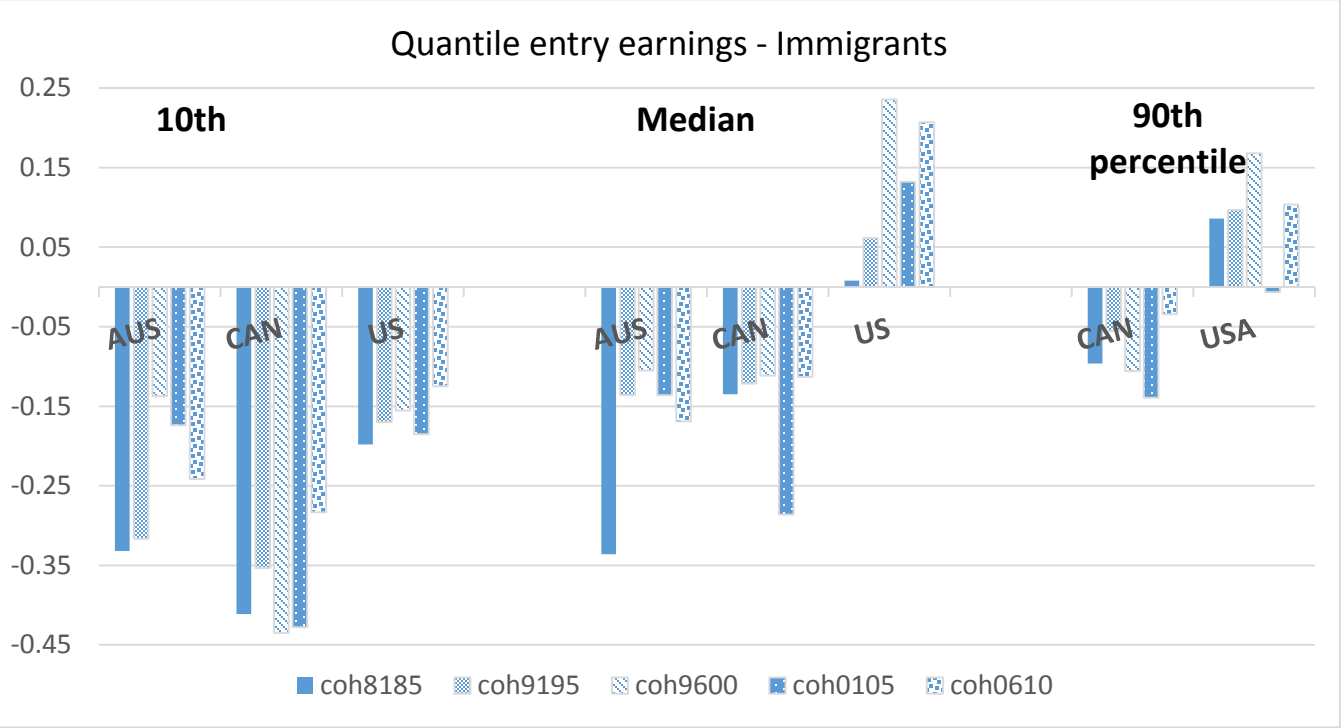
Notes: The first six columns use as dependent variable the log of weekly earnings on a sample of full-time, university-educated, male workers. Columns six to twelve use the proportion of university-educated men in paid employment as the dependent variable. Additional controls in the regression include geographic indicators (see text for a detailed explanation of geographical indicator in each country)

Table 3: Relative earnings of immigrants in STEM and non-STEM occupations

	STEM						NON-STEM					
	AUS		*CAN*		*USA*		*AUS*		*CAN*		*USA*	
Natives:												
cohort 81-85	-0.016	0.049	-0.043	0.026	0.082	0.025	0.087	0.032	0.039	0.015	0.085	0.017
cohort 86-90	0.012	0.037	-0.066	0.030	0.032	0.027	0.093	0.026	-0.019	0.017	0.072	0.019
cohort 91-95	0.017	0.029	-0.094	0.031	0.113	0.031	0.082	0.020	-0.105	0.018	0.147	0.020
cohort 96-00	0.078	0.031	-0.051	0.033	0.126	0.031	0.076	0.022	-0.073	0.020	0.135	0.021
cohort 01-05	0.056	0.026	-0.129	0.034	0.089	0.037	0.072	0.018	-0.147	0.021	0.111	0.025
cohort 06-10	0.080	0.023	0.015	0.039	0.127	0.037	0.091	0.016	-0.075	0.024	0.064	0.024
yse	0.037	0.003	0.030	0.003	0.048	0.003	0.041	0.002	0.051	0.002	0.068	0.002
$yse^2/100$	-0.058	0.009	-0.035	0.007	-0.083	0.000	-0.063	0.005	-0.083	0.004	-0.134	0.000
cohort 81-85 * yse	0.002	0.002	0.006	0.001	-0.002	0.001	-0.001	0.001	0.002	0.001	-0.002	0.001
cohort 86-90 * yse	0.004	0.002	0.009	0.002	0.003	0.002	0.003	0.001	0.006	0.001	0.001	0.001
cohort 91-95 * yse	0.008	0.002	0.015	0.002	-0.002	0.002	0.009	0.001	0.017	0.001	-0.004	0.002
cohort 96-00 * yse	0.011	0.003	0.016	0.003	-0.002	0.003	0.015	0.002	0.021	0.002	-0.002	0.002
cohort 01-05 * yse	0.024	0.004	0.041	0.003	0.001	0.005	0.027	0.003	0.039	0.002	-0.004	0.004
cohort 06-10 * yse	0.031	0.005	0.027	0.008	-0.014	0.009	0.042	0.004	0.045	0.006	-0.015	0.007
Immigrants:												
cohort 86-90	-0.279	0.053	-0.123	0.021	-0.005	0.020	-0.310	0.042	-0.249	0.016	-0.082	0.016
cohort 91-95	-0.130	0.056	-0.107	0.022	0.135	0.024	-0.174	0.050	-0.262	0.018	-0.138	0.021
cohort 96-00	-0.102	0.055	-0.113	0.021	0.101	0.019	-0.093	0.041	-0.350	0.019	-0.007	0.017
cohort 01-05	0.026	0.029	-0.203	0.025	0.084	0.032	-0.077	0.025	-0.360	0.020	-0.082	0.027
cohort 06-10	-0.056	0.017	-0.054	0.022	0.095	0.021	-0.203	0.015	-0.196	0.015	0.015	0.020
cohort 86-90 * yse	0.009	0.003	-0.001	0.002	0.003	0.001	0.006	0.003	-0.003	0.001	-0.007	0.001
cohort 91-95 * yse	0.001	0.004	0.000	0.002	-0.005	0.002	-0.002	0.004	-0.005	0.002	0.000	0.002
cohort 96-00 * yse	-0.001	0.006	0.001	0.003	0.003	0.002	-0.008	0.004	-0.001	0.002	-0.013	0.002
cohort 01-05 * yse	-0.028	0.005	0.009	0.004	0.000	0.006	-0.022	0.005	0.006	0.003	-0.011	0.005
fexp	0.023	0.002	0.009	0.001	0.011	0.001	0.028	0.001	0.013	0.001	0.015	0.001
(fexp*yse)/100	-0.145	0.019	-0.059	0.013	-0.112	0.000	-0.194	0.016	-0.149	0.010	-0.183	0.000
unemployment rate	0.002	0.004	-0.026	0.002	-0.003	0.001	-0.005	0.003	-0.021	0.001	-0.003	0.001
Native R^2			0.116		0.068						0.073	
Immigrant R^2			0.043		0.024						0.025	
Native sample	9,657		86,830		31,211						155,180	
Immigrant sample	5,148		48,490		39,114						82,915	

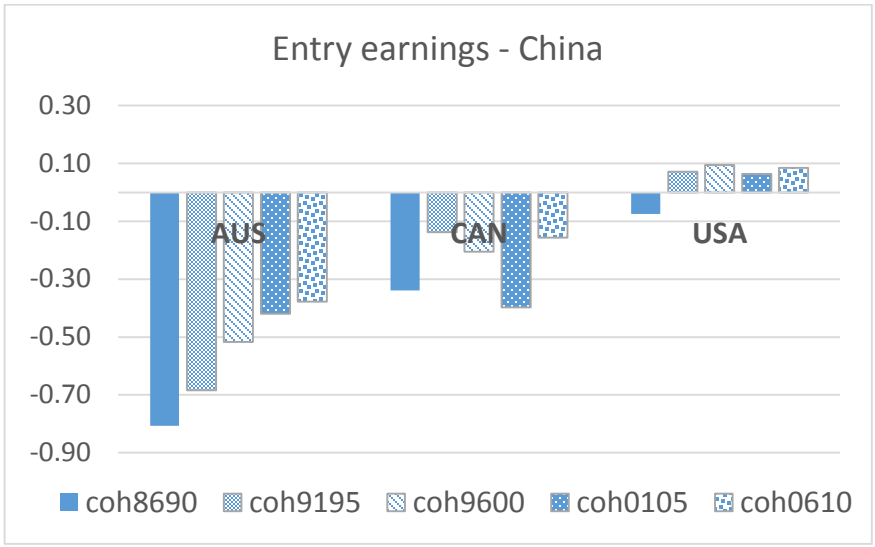
Notes: The dependent variable is the log of weekly earnings on a sample of full-time, university-educated, male workers. The first six columns show results for a subsample of workers in STEM occupations, whereas the last six columns use a subsample of NON-STEM workers. Additional controls in the regression include geographic indicators (see text for a detailed explanation of geographical indicator in each country)

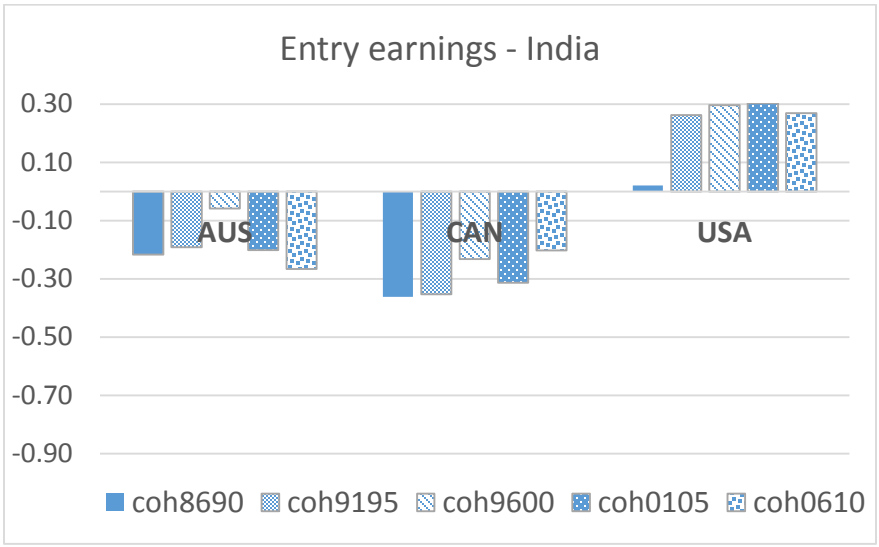
Figure 1. Entry earnings of immigrants to Australia, Canada and the US by 10th, 50th and 90th percentile

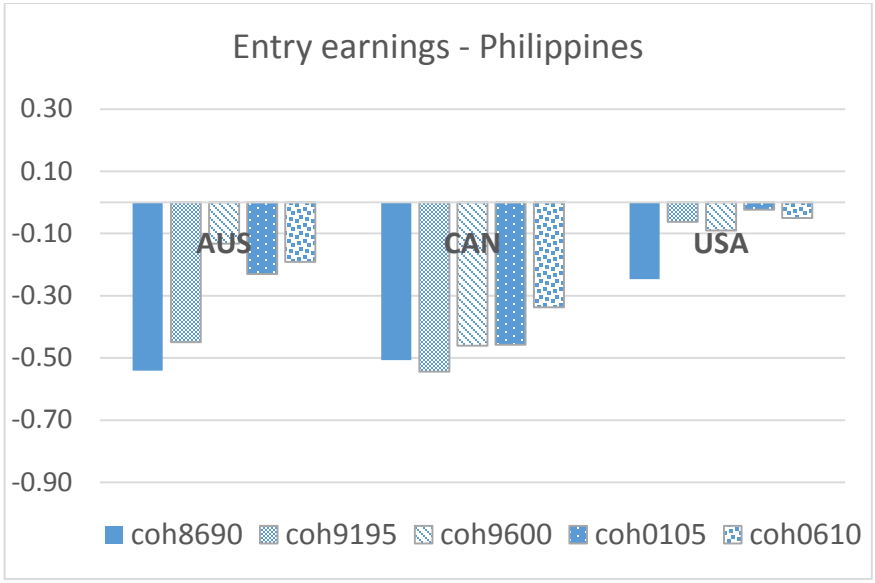


Note: Coefficients of the entry earnings of immigrants at the 10th, 50th and 90th percentile of the distribution, relative to native-born entrants. Quantile regressions include the same regressors than those specified in Table 2. Results for the upper percentiles of the Australian distribution

Figure 2. Entry earnings of immigrants to Australia, Canada and the US by country of origin







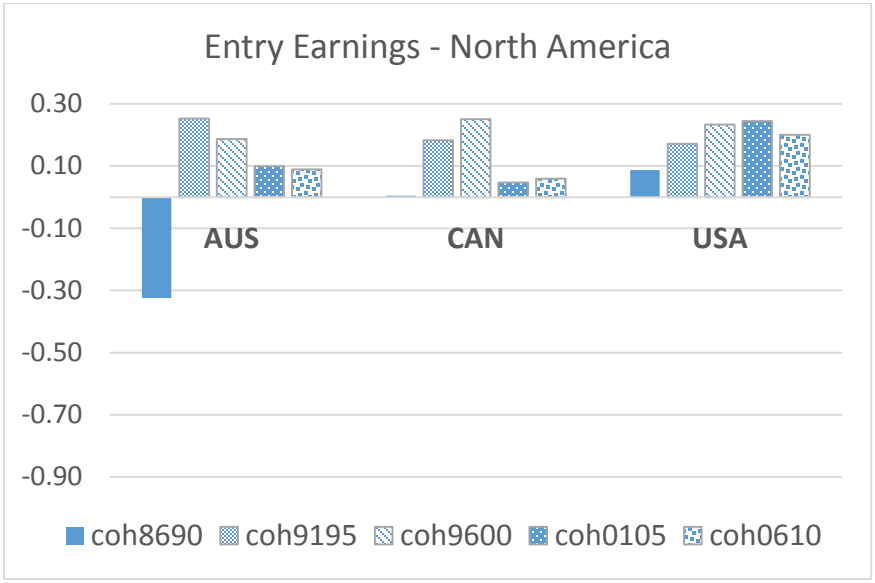


Table A1: Relative Earnings of immigrants at the 10th, 50th and 90th percentile

	10th						Median						90th			
	AUS		*CAN*		*USA*		*AUS*		*CAN*		*USA*		*CAN*		*USA*	
Natives:																
cohort 81-85	0.013	0.040	-0.007	0.024	0.030	0.024	0.065	0.008	-0.009	0.009	0.036	0.013	0.050	0.021	0.059	0.029
cohort 86-90	-0.013	0.032	-0.119	0.028	-0.018	0.027	0.005	0.007	-0.082	0.011	-0.023	0.014	0.072	0.023	0.019	0.032
cohort 91-95	0.003	0.027	-0.272	0.029	0.100	0.030	-0.018	0.006	-0.165	0.012	0.019	0.016	0.078	0.025	0.124	0.035
cohort 96-00	0.002	0.029	-0.234	0.032	0.034	0.031	0.004	0.006	-0.123	0.013	0.007	0.016	0.152	0.026	0.152	0.038
cohort 01-05	0.047	0.024	-0.368	0.034	-0.004	0.038	0.052	0.005	-0.173	0.013	-0.009	0.020	0.087	0.027	0.186	0.046
cohort 06-10	0.030	0.021	-0.327	0.046	-0.080	0.037	0.059	0.005	-0.103	0.016	-0.016	0.019	0.257	0.028	0.130	0.043
yse	0.029	0.002	0.036	0.003	0.040	0.003	0.034	0.000	0.037	0.001	0.050	0.001	0.062	0.002	0.085	0.003
$yse^2/100$	-0.041	0.007	-0.079	0.007	-0.001	0.000	-0.051	0.001	-0.058	0.002	-0.001	0.000	-0.075	0.006	-0.002	0.000
cohort 81-85 * yse	0.001	0.002	0.002	0.001	0.000	0.001	-0.001	0.000	0.003	0.000	0.001	0.001	0.005	0.001	0.001	0.001
cohort 86-90 * yse	0.005	0.002	0.008	0.002	0.006	0.002	0.006	0.000	0.008	0.001	0.006	0.001	0.007	0.001	0.009	0.002
cohort 91-95 * yse	0.007	0.002	0.022	0.002	-0.001	0.002	0.014	0.000	0.018	0.001	0.004	0.001	0.014	0.002	-0.002	0.003
cohort 96-00 * yse	0.012	0.003	0.027	0.003	0.005	0.003	0.018	0.001	0.022	0.001	0.006	0.002	0.010	0.002	-0.003	0.003
cohort 01-05 * yse	0.017	0.003	0.055	0.004	0.003	0.006	0.026	0.001	0.038	0.001	0.008	0.003	0.026	0.003	-0.016	0.007
cohort 06-10 * yse	0.040	0.005	0.074	0.013	-0.009	0.013	0.039	0.001	0.040	0.004	-0.002	0.006	0.003	0.005	-0.032	0.010
Immigrants:																
cohort 86-90	-0.334	0.043	-0.411	0.025	-0.198	0.021	-0.336	0.009	-0.135	0.012	0.008	0.010	-0.096	0.020	0.086	0.023
cohort 91-95	-0.318	0.046	-0.353	0.026	-0.170	0.026	-0.136	0.010	-0.122	0.013	0.062	0.014	-0.056	0.018	0.097	0.031
cohort 96-00	-0.137	0.041	-0.435	0.029	-0.155	0.021	-0.105	0.009	-0.111	0.014	0.236	0.011	-0.106	0.017	0.168	0.025
cohort 01-05	-0.171	0.026	-0.428	0.034	-0.185	0.037	-0.136	0.006	-0.286	0.015	0.132	0.019	-0.140	0.022	-0.006	0.042
cohort 06-10	-0.241	0.017	-0.283	0.026	-0.125	0.026	-0.169	0.003	-0.113	0.012	0.207	0.014	-0.034	0.015	0.104	0.030
cohort 86-90 * yse	0.001	0.003	0.003	0.002	-0.004	0.002	0.010	0.001	-0.003	0.001	-0.004	0.001	-0.007	0.002	-0.016	0.002
cohort 91-95 * yse	0.004	0.004	-0.002	0.002	-0.005	0.002	-0.005	0.001	-0.004	0.001	-0.004	0.001	-0.012	0.002	-0.009	0.003
cohort 96-00 * yse	-0.010	0.004	0.002	0.003	-0.006	0.003	-0.005	0.001	-0.004	0.002	-0.012	0.001	-0.010	0.002	-0.022	0.003
cohort 01-05 * yse	-0.009	0.005	0.007	0.005	-0.007	0.007	-0.011	0.001	0.014	0.003	-0.013	0.003	-0.006	0.004	-0.003	0.007
fexp	0.013	0.001	-0.001	0.001	-0.005	0.001	0.030	0.000	0.004	0.001	0.005	0.000	0.033	0.001	0.039	0.001
(fexp*yse)/100	-0.088	0.015	-0.060	0.016	-0.001	0.000	-0.196	0.003	-0.072	0.007	-0.001	0.000	-0.239	0.011	-0.003	0.000
unem rate	-0.001	0.003	-0.024	-0.002	-0.007	0.002	-0.005	0.001	-0.013	0.001	-0.002	0.001	-0.029	0.002	0.000	0.002
Native sample	42,570		435,245		186,391		42,570		435,245		186,391		435,245		186,391	
Immigrant sample	16,521		149,025		122,029		16,521		20,085		122,029		20,085		122,029	

Notes: The dependent variable is the log of weekly earnings. For Australia, the median regression results are for the 45th percentile. Regressions use a sample of full-time, university-educated, male workers. The first six columns show results for a quantile regression at the tenth percentile. Columns 7 to 10 show results for the median (Canada and the US only) and columns 11 to 14 show results for the top 90th percentile (Canada and the US only).Additional controls in the regression include geographic indicators (see text for a detailed explanation of geographical indicator in each country)

Table A2: Relative immigrant earnings by origin country

	1. CHINA						2. INDIA					
	AUS		*CAN*		*USA*		*AUS*		*CAN*		*USA*	
cohort 86-90	-0.807	0.073	-0.339	0.043	-0.075	0.030	-0.217	0.119	-0.361	0.039	0.021	0.024
cohort 91-95	-0.684	0.146	-0.138	0.041	0.071	0.034	-0.192	0.072	-0.353	0.041	0.262	0.027
cohort 96-00	-0.517	0.088	-0.205	0.032	0.095	0.031	-0.059	0.081	-0.232	0.031	0.296	0.018
cohort 01-05	-0.420	0.071	-0.397	0.036	0.063	0.053	-0.201	0.040	-0.313	0.031	0.303	0.032
cohort 06-10	-0.377	0.038	-0.156	0.037	0.084	0.039	-0.267	0.018	-0.202	0.025	0.269	0.019
cohort 86-90 * yse	0.021	0.005	0.006	0.003	0.006	0.002	0.008	0.008	-0.005	0.003	-0.001	0.002
cohort 91-95 * yse	0.031	0.011	-0.005	0.004	-0.002	0.003	0.005	0.006	-0.007	0.004	-0.010	0.003
cohort 96-00 * yse	0.016	0.010	-0.004	0.004	-0.004	0.003	-0.016	0.009	-0.013	0.004	-0.010	0.002
cohort 01-05 * yse	-0.011	0.011	0.022	0.005	-0.011	0.008	-0.007	0.007	-0.002	0.005	-0.019	0.006
fexp	0.025	0.004	-0.003	0.002	0.001	0.002	0.021	0.002	0.001	0.002	-0.010	0.001
(fexp*yse)/100	-0.195	0.045	-0.064	0.025	-0.119	0.020	-0.168	0.038	0.012	0.022	-0.075	0.017
Immigrant R^2			0.071		0.016				0.040		0.011	
Immigrant sample	1,241		21,155		12,573		2,708		20,085		26,552	
	3. PHILIPPINES						4. NORTH AMERICA					
	AUS		*CAN*		*USA*		*AUS*		*CAN*		*USA*	
cohort 86-90	-0.541	0.070	-0.507	0.039	-0.247	0.029	-0.325	0.147	0.005	0.044	0.087	0.043
cohort 91-95	-0.450	0.129	-0.544	0.041	-0.062	0.037	0.253	0.125	0.182	0.049	0.172	0.053
cohort 96-00	-0.133	0.125	-0.461	0.045	-0.090	0.038	0.186	0.143	0.250	0.060	0.233	0.034
cohort 01-05	-0.230	0.076	-0.458	0.048	-0.024	0.051	0.100	0.078	0.047	0.073	0.244	0.063
cohort 06-10	-0.192	0.043	-0.337	0.029	-0.050	0.038	0.089	0.050	0.060	0.046	0.200	0.048
cohort 86-90 * yse	0.011	0.005	0.001	0.003	-0.001	0.002	0.014	0.009	-0.001	0.004	-0.005	0.003
cohort 91-95 * yse	0.002	0.010	0.004	0.004	-0.011	0.004	-0.016	0.010	-0.010	0.006	-0.007	0.005
cohort 96-00 * yse	-0.017	0.013	0.008	0.005	-0.004	0.004	-0.005	0.015	-0.021	0.008	-0.015	0.004
cohort 01-05 * yse	-0.016	0.013	0.021	0.008	-0.012	0.008	-0.026	0.016	-0.011	0.014	-0.027	0.009
fexp	0.011	0.004	0.005	0.002	-0.009	0.002	0.027	0.004	0.038	0.003	0.032	0.002
(fexp*yse)/100	-0.183	0.042	-0.080	0.023	-0.105	0.020	-0.180	0.060	-0.272	0.040	-0.024	0.030
Immigrant R^2			0.073		0.013				0.112		0.016	
Immigrant sample	911		12,915		7,993		696		6,305		4,744	

Notes: The dependent variable is the log of weekly earnings. Regressions use a sample of full-time, university-educated, male workers. Panel 1, restricts the immigrant sample to Chinese immigrants, panel 2 to Indian immigrants, panel 3 to Filipino immigrants and panel 4 to "north American" immigrants. Only coefficients for immigrants are shown. Additional controls include all variables specified in Table 1