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An Analysis of the Underlying Causes of the Poor Performance of Recent Immigrants Using the 2006 Census PUMF and Some Observations on Their Implications for Immigration Policy

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Abstract:
This paper examines the poor performance of recent immigrants to Canada in the labour market as revealed in the Statistics Canada Census 2006 Public Use Microdata File (PUMF). It presents the data which shows that immigrants from less developed countries are doing much worse than immigrants from industrialized countries. Using regression analysis it shows that key explanatory variable for their poor performance are the location of their education, their visible minority status, their language skills, and the level of GDP in their countries of origin. A profiling of immigrants who have done better than non-immigrant Canadians suggests that the performance of immigrants could be improved by utilizing information from the Census on the characteristics of immigrants who succeed in labour markets to improve the selection criteria and distribution of points used in the current scoring system to chose immigrants.

JEL Classification Codes: J23 – Labour demand; J24 – Human Capital; Skills; Occupational Choice; Labor Productivity; J61 – Geographic mobility, immigrant workers.

Keywords: wages, recent immigrants to Canada, immigration policy, immigrant labour, human capital

Introduction

The aggregate data from the 2006 census (Statistics Canada, 2008) confirmed that the deterioration of the performance of recent immigrants, arriving since 1990 following the big increase in the number of immigrants admitted after 1987, is ongoing. But it also left many questions unanswered about why some recent immigrants are doing better than others.

Recently, more disaggregated data on the economic performance of immigrants was made available to researchers in the 2006 Census Public Use Microdata File (PUMF). It contains 844,476 records, presenting much relevant census data for individuals representing a sample of 2.7 per cent of the Canadian population. This includes data on the employment income earned by immigrants and some of its important underlying determinants.

This paper uses the disaggregated Census data to explore the differential economic performance of recent immigrants based on their countries or regions of origin using both descriptive and statistical methods. Since the Census does not provide a breakdown of immigrants into economic class, family class and refugees, it is necessary to lump all of the immigrants together. Consequently, it is not possible to consider specifically the performance of the different classes of immigrants, but only all immigrants as a group.

The paper also uses the data to profile successful recent immigrants (defined to be those earning more than non-immigrants) and to compare them to the entire group of immigrants in the 25 to 64 age group in the census year.

The Census 2006 PUMF Data

The data on the employment earnings of recent immigrants arriving since 1990 and up to 2004 for the year 2005 are provided in Table 1. Employment income as defined by Statistics Canada in the Census 2006 PUMF "refers to total income received by persons 15 years of age and over during calendar year 2005 as wages and salaries, net income from a non-farm unincorporated business and/or professional practice, and/or net farm self-employment income" (Statistics Canada, 2009, p.75). The data reveals that all of these immigrants only earned an average of $25,714 in 2005 with immigrants in the country longer doing better than the most recently arrived. Nevertheless, it is still striking that on average recent immigrants only earned 69.1 per cent of the amount earned by non-immigrants in the same year.

The employment income of recent immigrants is used to rank countries and regions from the highest to lowest in terms of the employment income earned by its emigrants using Place of Birth information from the Census as a proxy for country or region of origin (Table 2). It highlights the starkly different performance with income running from highs of $49,293 for those coming from the United Kingdom and $45,144 for the United States, to lows of $20,198 for Pakistan, $20,033 for West Central Asia and the Middle East, and $15,245 for Other Eastern Asia.

The earnings relative to non-immigrants are shown in Tables 3 and 4. They show that a long list of countries and regions including India, South America, Northern Africa, Eastern Africa, Central America, Other Caribbean and Bermuda, Other Southeast Asia,

Other Southern Asia, the People's Republic of China, Pakistan, West Central Asia and the Middle East, Other Eastern Asia, all in descending order, do worse that the average of all recent immigrants with those immigrants coming from Other Eastern Asia only earning 41 per cent of non-immigrants.

Some of the differences in the employment income of recent immigrants among countries and regions can probably be explained by the different composition of immigrants. Other studies have shown in the past that refugee class immigrants earn much less than other immigrants and that family class earn less than economic class. Unfortunately, the 2006 Census does not contain any data on the class of immigrants that can be used to shed additional light on the difference in employment income among countries and regions.

Information on the number of immigrants coming from the various countries and regions is provided in Tables 5 and 6. Table 5 shows the number in the sample in the Census 2006 PUMF database and Table 6 shows the numbers in the population calculated by multiplying the sample numbers by the weight 36.99457, which is the number of individuals in the population represented by each observation in the sample.

The total number of immigrants of 1,541,749 coming from 1990 to 2004 considered here is much lower than the 3,368,619 immigrants admitted reported by Citizenship and Immigration Canada. This is because it only includes those who remained in Canada until the census year and were in the 25 to 64 age group.

It is worth noting that 1,048,024 or more than two-thirds of the immigrants classified by the Census as being admitted between 1990 and 2004 earned less than $25,714 in 2005, which is the average employment income earned by recent immigrants in 2005 and amounts only to 69.1 per cent of the employment income of non-immigrants. This is why there is such a growing problem of poverty among immigrants in the expanding ethnic enclaves in Canada's major metropolitan centres (Feng Hou and Picot, 2004).

Table 1: Employment Income of Recent Immigrants by Year of Arrival and Place of Birth in 2005 (dollars)

	Recent Immigrants Arriving From Year			
Place of Birth	**1990 to 2004**	**1990 to 1994**	**1994 to 1999**	**2000 to 2004**
Total Recent Immigrants	25,714	28,768	27,590	21,314
United States of America	45,144	54,650	39,609	41,867
Central America	22,572	23,691	24,708	19,011
Jamaica	28,219	28,617	28,382	26,664
Other Caribbean and Bermuda	22,480	25,583	20,058	19,558
South America	24,916	27,899	26,423	21,610
United Kingdom	49,293	55,984	48,555	41,812
Germany	34,777	27,597	34,607	42,601
Other Northern and Western Europe	37,291	39,227	40,557	33,848
Poland	31,071	32,669	26,926	24,656
Other Eastern Europe	32,368	35,472	39,780	25,730
Italy	31,600	29,667	31,900	34,091
Portugal	29,789	30,655	27,167	27,452
Other Southern Europe	32,215	41,772	31,603	21,517
Eastern Africa	23,723	26,107	24,947	20,046
Northern Africa	24,001	33,139	33,899	16,004
Other Africa	34,695	47,250	34,600	27,141
West Central Asia and the Middle East	20,033	22,849	24,720	13,817
China, People's Republic of	21,411	22,239	25,963	18,351
Hong Kong, Special Administrative Region	25,798	29,325	21,257	17,657
Other Eastern Asia	15,245	16,801	15,474	13,784
Philippines	28,147	29,446	29,489	25,249
Other Southeast Asia	22,198	23,116	22,637	18,872
India	25,030	26,981	26,362	22,878
Pakistan	20,198	23,405	25,538	16,015
Other Southern Asia	21,483	25,658	21,151	16,256
Oceania and others	30,658	28,783	27,678	35,309

Source: Calculations for recent immigrants and non-immigrant population between 25 and 64 done from Statistics Canada, Census 2006 PUMF. Employment income is provided by the variable empin in the file, and includes wages and salaries, net income from a non-farm unincorporated business and/or professional practice, and/or net farm self-employment income.

Table 2: Employment Income of Recent Immigrants by Year of Arrival and Place of Birth in 2005 (dollars)
Sorted in Descending Order for Whole Period

	Recent Immigrants Arriving From Year			
Place of Birth	**1990 to 2004**	**1990 to 1994**	**1994 to 1999**	**2000 to 2004**
Total Recent Immigrants	25,714	28,768	27,590	21,314
United Kingdom	49,293	55,984	48,555	41,812
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Jamaica	28,219	28,617	28,382	26,664
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China, People's Republic of	21,411	22,239	25,963	18,351
Pakistan	20,198	23,405	25,538	16,015
West Central Asia and the Middle East	20,033	22,849	24,720	13,817
Other Eastern Asia	15,245	16,801	15,474	13,784

Source: Calculations for recent immigrants and non-immigrant population between 25 and 64 done from Statistics Canada, Census 2006 PUMF. Employment income is provided by the variable empin in the file, and includes wages and salaries, net income from a non-farm unincorporated business and/or professional practice, and/or net farm self-employment income.

Table 3: Employment Income of Recent Immigrants by Year of Arrival and Place of Birth in 2005 (Percent of Employment Income of Non-Immigrants)

	Recent Immigrants Arriving From Year			
Place of Birth	**1990 to 2004**	**1990 to 1994**	**1994 to 1999**	**2000 to 2004**
Total Recent Immigrants	69.1	77.3	74.1	57.3
United States of America	121.3	146.9	106.4	112.5
Central America	60.7	63.7	66.4	51.1
Jamaica	75.8	76.9	76.3	71.7
Other Caribbean and Bermuda	60.4	68.7	53.9	52.6
South America	67.0	75.0	71.0	58.1
United Kingdom	132.5	150.4	130.5	112.4
Germany	93.5	74.2	93.0	114.5
Other Northern and Western Europe	100.2	105.4	109.0	91.0
Poland	83.5	87.8	72.4	66.3
Other Eastern Europe	87.0	95.3	106.9	69.1
Italy	84.9	79.7	85.7	91.6
Portugal	80.0	82.4	73.0	73.8
Other Southern Europe	86.6	112.3	84.9	57.8
Eastern Africa	63.7	70.2	67.0	53.9
Northern Africa	64.5	89.1	91.1	43.0
Other Africa	93.2	127.0	93.0	72.9
West Central Asia and the Middle East	53.8	61.4	66.4	37.1
China, People's Republic of	57.5	59.8	69.8	49.3
Hong Kong, Special Administrative Region	69.3	78.8	57.1	47.4
Other Eastern Asia	41.0	45.1	41.6	37.0
Philippines	75.6	79.1	79.2	67.9
Other Southeast Asia	59.7	62.1	60.8	50.7
India	67.3	72.5	70.8	61.5
Pakistan	54.3	62.9	68.6	43.0
Other Southern Asia	57.7	68.9	56.8	43.7
Oceania and others	82.4	77.3	74.4	94.9

Source: Calculations for recent immigrants and non-immigrant population between 25 and 64 done from Statistics Canada, Census 2006 PUMF. Employment income is provided by the variable empin in the file, and includes wages and salaries, net income from a non-farm unincorporated business and/or professional practice, and/or net farm self-employment income.

Table 4: Employment Income of Recent Immigrants by Year of Arrival and Place of Birth in 2005 (Percent of Employment Income of Non-Immigrants) Sorted in Descending Order for Whole Period

	Recent Immigrants Arriving From Year			
Place of Birth	**1990 to 2004**	**1990 to 1994**	**1994 to 1999**	**2000 to 2004**
Total Recent Immigrants	69.1	77.3	74.1	57.3
United Kingdom	132.5	150.4	130.5	112.4
United States of America	121.3	146.9	106.4	112.5
Other Northern and Western Europe	100.2	105.4	109.0	91.0
Germany	93.5	74.2	93.0	114.5
Other Africa	93.2	127.0	93.0	72.9
Other Eastern Europe	87.0	95.3	106.9	69.1
Other Southern Europe	86.6	112.3	84.9	57.8
Italy	84.9	79.7	85.7	91.6
Poland	83.5	87.8	72.4	66.3
Oceania and others	82.4	77.3	74.4	94.9
Portugal	80.0	82.4	73.0	73.8
Jamaica	75.8	76.9	76.3	71.7
Philippines	75.6	79.1	79.2	67.9
Hong Kong, Special Administrative Region	69.3	78.8	57.1	47.4
India	67.3	72.5	70.8	61.5
South America	67.0	75.0	71.0	58.1
Northern Africa	64.5	89.1	91.1	43.0
Eastern Africa	63.7	70.2	67.0	53.9
Central America	60.7	63.7	66.4	51.1
Other Caribbean and Bermuda	60.4	68.7	53.9	52.6
Other Southeast Asia	59.7	62.1	60.8	50.7
Other Southern Asia	57.7	68.9	56.8	43.7
China, People's Republic of	57.5	59.8	69.8	49.3
Pakistan	54.3	62.9	68.6	43.0
West Central Asia and the Middle East	53.8	61.4	66.4	37.1
Other Eastern Asia	41.0	45.1	41.6	37.0

Table 5: Recent Immigrants Reporting Employment Income by Year of Arrival and Place of Birth in 2005 (Number in Sample)

	Recent Immigrants Arriving From Year			
Place of Birth	**1990 to 2004**	**1990 to 1994**	**1994 to 1999**	**2000 to 2004**
Total Recent Immigrants	41,675	14,063	12,516	15,096
United States of America	713	219	205	289
Central America	998	511	204	283
Jamaica	662	390	156	116
Other Caribbean and Bermuda	1,178	547	292	339
South America	1,676	584	388	704
United Kingdom	871	347	237	287
Germany	229	72	89	68
Other Northern and Western Europe	791	202	244	345
Poland	969	735	144	90
Other Eastern Europe	3,033	649	983	1,401
Italy	85	33	30	22
Portugal	308	229	48	31
Other Southern Europe	1,271	376	593	302
Eastern Africa	1,024	449	213	362
Northern Africa	1,345	233	378	734
Other Africa	1,024	266	320	438
West Central Asia and the Middle East	3,435	1,129	1,023	1,283
China, People's Republic of	5,053	1,065	1,487	2,501
Hong Kong, Special Administrative Region	2,017	1,195	688	134
Other Eastern Asia	2,104	557	825	722
Philippines	3,001	1,141	922	938
Other Southeast Asia	1,499	897	313	289
India	4,504	1,073	1,518	1,913
Pakistan	1,519	222	495	802
Other Southern Asia	1,982	775	628	579
Oceania and others	363	157	87	119

Source: Calculations for the number of recent immigrants and non-immigrant population between 25 and 64 in sample earning employment income done from Statistics Canada, Census 2006 PUMF.

Table 6: Recent Immigrants Reporting Employment Income by Year of Arrival and Place of Birth in 2005 (Number in Population)

	Recent Immigrants Arriving From Year			
Place of Birth	**1990 to 2004**	**1990 to 1994**	**1994 to 1999**	**2000 to 2004**
Total Recent Immigrants	1,541,749	520,255	463,024	558,470
United States of America	26,377	8,102	7,584	10,691
Central America	36,921	18,904	7,547	10,469
Jamaica	24,490	14,428	5,771	4,291
Other Caribbean and Bermuda	43,580	20,236	10,802	12,541
South America	62,003	21,605	14,354	26,044
United Kingdom	32,222	12,837	8,768	10,617
Germany	8,472	2,664	3,293	2,516
Other Northern and Western Europe	29,263	7,473	9,027	12,763
Poland	35,848	27,191	5,327	3,330
Other Eastern Europe	112,205	24,009	36,366	51,829
Italy	3,145	1,221	1,110	814
Portugal	11,394	8,472	1,776	1,147
Other Southern Europe	47,020	13,910	21,938	11,172
Eastern Africa	37,882	16,611	7,880	13,392
Northern Africa	49,758	8,620	13,984	27,154
Other Africa	37,882	9,841	11,838	16,204
West Central Asia and the Middle East	127,076	41,767	37,845	47,464
China, People's Republic of	186,934	39,399	55,011	92,523
Hong Kong, Special Administrative Region	74,618	44,209	25,452	4,957
Other Eastern Asia	77,837	20,606	30,521	26,710
Philippines	111,021	42,211	34,109	34,701
Other Southeast Asia	55,455	33,184	11,579	10,691
India	166,624	39,695	56,158	70,771
Pakistan	56,195	8,213	18,312	29,670
Other Southern Asia	73,323	28,671	23,233	21,420
Oceania and others	13,429	5,808	3,219	4,402

Source: Calculations for number of recent immigrants and non-immigrant population between 25 and 64 in the population earning employment income done from Statistics Canada, Census 2006 PUMF.

Analysis of Data Aggregated by Country or Region of Origin

It is not sufficient just to point out the poor economic performance of recent immigrants to Canada. It is also necessary to try to identify the determinants of the poor performance. A convenient survey of recent studies is provided by Garnett Picot and Arthur Sweetman (2005). They attribute the decline in entry earnings and increasing low-income rates to: the changing characteristics of immigrants, including country of origin, language, and education, which appears to have accounted for about a third of the increase in the earnings gap; the decreasing returns to foreign work experience, which accounts for another third; and the decline in the labour-market outcome of all new labour-force entrants including immigrants. They also discuss a possible reduction in the return on education and quality differences in education. To put it simply, Canadian employers do not value foreign experience and heavily discount the value of foreign education. A lack of fluency in English or French has also been identified as a problem (Grondin, 2005). And more recent research focusing on outcomes in the early 2000s, attributed much of the recent decline to the high concentration of recent immigrants in the IT and engineering professions, which were adversely affected by the high-tech downturn (Picot, 2008).

It is thus of interest to examine the relationship between, at least, some of these possible variables and the performance of recent immigrants in the labour market (Table 7). Considered are: percentage with a Bachelors Degree or higher, which represents educational attainment; percentage with mother tongue either English or French, which represents their command of Canada's official languages; percentage visible minority;

and GDP per capita in 2005 in Place of Birth (as a a proxy for country or region of origin).

The interpretation of the visible minority and GDP per capita variables is more problematic. Visible minority status raises particularly controversial questions: Why should visible minority status matter? Does it capture discrimination or racism in Canada? Or is it just a proxy for some characteristics of the source countries from which a large percentage of the immigrants coming to Canada are visible minorities?

The GDP per capita variable can be viewed as providing structural information on the economy from whence the immigrants came. The higher the GDP per capita, the more developed the economy, and the more similar in economic structure it is to Canada. Immigrants coming from a highly developed country should have education and work experience that is more directly applicable to Canada. The education is higher quality according to published international rankings. And the technology and capital stock utilized by workers from these countries is usually more advanced and state of the art.

A high proportion of recent immigrants have Bachelors or higher degrees (39 per cent). But only a small percentage of recent immigrants have English or French as a mother tongue (15.2 per cent). This means that there language skills are not the same as a native speaker and that when young they may not have been as likely to have been exposed to native speakers in their country or region of origin. And three quarters of recent immigrants classify themselves as visible minorities.

The average GDP per capita of the source countries for recent immigrants in 2005 is only $8,043, which is less than a quarter of Canadian GDP per capita in the same year ($35,056). Among the source countries and regions shown in Table 7, only the United States and Western Europe have GDP per capita of comparable magnitudes.

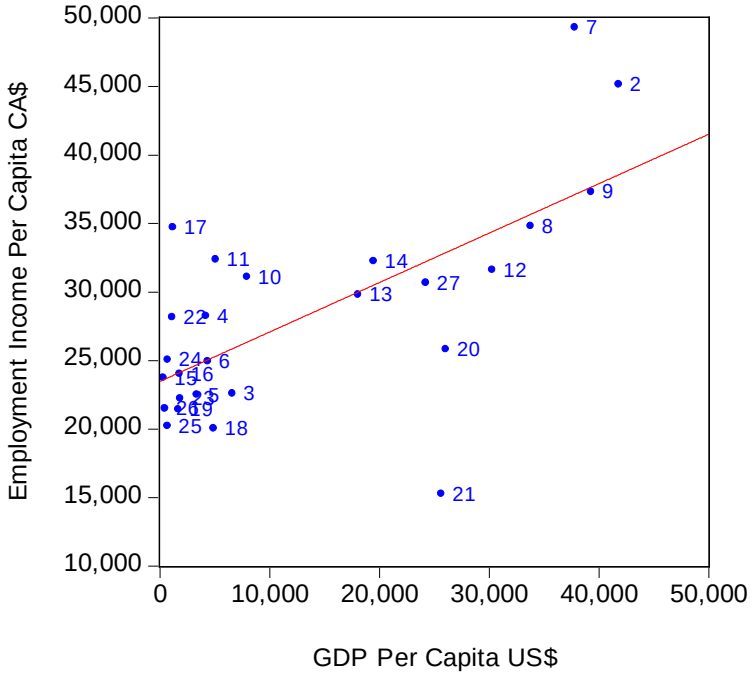
Table 7: Some Possible Determinants of Poor Economic Performance by Recent Immigrants Arriving from 1990 to 2004

Place of Birth	Percentage with BA or higher	Percentage with Mother Tongue English or French	Percentage Visible Minority	GDP Per Capita (2005)
Total Recent Immigrants	38.9	15.2	75.1	8,043
United States of America	51.3	95.2	6.2	41,833
Central America	20.5	2.3	80.1	6,634
Jamaica	12.2	97.6	98.5	4,208
Other Caribbean and Bermuda	14.9	58.3	95.8	3,388
South America	25.5	33.8	81.3	4,383
United Kingdom	32.6	95.4	12.6	37,860
Germany	28.8	17.5	3.1	33,827
Other Northern and Western Europe	46.6	71.6	5.6	39,342
Poland	21.2	1.1	0.1	7,963
Other Eastern Europe	62.4	1.7	0.6	5,121
Italy	23.5	8.2	2.4	30,333
Portugal	2.6	2.3	1.0	18,100
Other Southern Europe	33.9	2.4	1.0	19,494
Eastern Africa	22.9	18.8	96.2	330
Northern Africa	56.1	9.5	76.1	1,803
Other Africa	36.8	44.0	79.2	1,212
West Central Asia and the Middle East	40.2	4.3	71.2	4,919
China, People's Republic of	50.0	0.9	99.8	1,715
Hong Kong, Special Administrative Region	30.8	3.0	99.8	26,092
Other Eastern Asia	49.5	1.9	99.7	25,656
Philippines	43.1	7.7	99.8	1,156
Other Southeast Asia	15.7	9.4	99.0	1,891
India	41.6	8.4	99.9	740
Pakistan	55.4	6.3	99.9	704
Other Southern Asia	22.6	5.2	99.8	469
Oceania and others	15.7	42.1	60.6	24,259

Source: Calculations for recent immigrants and non-immigrant population between 25 and 64 done from Statistics Canada, Census 2006 PUMF. Percentage with BA or higher calculated using variable hdgree >=9 and hdgree<=13. Percentage with Mother Tongue English or French calculated using variable mtnno=1. Percentage GDP per capita calculated using vismin not equal to 13. GDP in US$ and population data for 2005 from http://data.worldbank.org/.

It is revealing to examine graphically the relationship between the employment income of recent immigrants and GDP per capita in the country or region of origin (Chart 1). This chart illustrates very well the positive relationship between these two variables. It also shows which countries or regions such as the United States (observation 2) and the United Kingdom (observation 7) lie farthest to the right and above the line and thus do best. The countries and regions whose immigrants have the lowest employment income and which have the lowest GDP per capita are clustered below the line in the lower left.

Chart 1:The Relationship Between Employment Income of Recent Immigrants and GDP Per Capita in Place of Birth (2005)



Box 1: Correspondence of Numeric Data Point with Place of Origin Labels

2. USA
3. Cen. Amer.
4. Jamaica
5. Other Carib.
6. S. America
7. UK
8. Ger.
9. Other N&W Eur.
10. Poland
11. Other E Eur.
12. Italy
13. Portugal
14. Other S Eur.
15. E Africa
16. N Africa
17. Other Africa
18. W Cen. Asia & ME
19. China
20. Hong Kong
21. Other E Asia
22. Philippines
23. Other SE Asia
24. India
25. Pakistan
26. Other S Asia
27. Oceania & Others

A more sophisticated tool for exploring the relative impact of the various factors is multiple linear regression. It is a statistical technique that disentangles the relationship of each of the four specified factors to average employment income for recent immigrants by country or region of origin (as proxied by place of birth). In this particular application, it uses the 26 aggregated observations for the variable by country or region of origin, rather than the full individual micro data file. When all four of the possible determining variables are included in a single regression, two variables, percentage with

mother tongue English or French and percentage visible minority, are statistically highly significant (Table 8). But percentage with BA or higher and GDP per capita are not. Interestingly, if the variable for percentage visible minority is dropped, GDP per capita also becomes statistically highly significant, but percentage with BA or higher does not. And if percentage with BA or higher is eliminated, but percentage visible minority is retained, GDP per capita turns out to be not significant. GDP per capita and percentage visible minority status are highly collinear, but percentage visible minority status seems to be much more closely related to employment income, at least when the data is aggregated by country or region.

These regression results raise more questions than they answer. If visible minority status *per se* does indeed reduce employment income, then what is the appropriate policy response? And if it is a proxy for some other labour market relevant features of the source countries or regions such as lower quality education, less relevant work experience, or poorer language skills, then further research will be required to establish the relationship. This can be done using more of the variables in the 2006 Census PUMF and is the focus of the next section of this paper.

Table 8: Results for Ordinary Linear Regression of Employment Income Earned in 2005 by Recent Immigrants Arriving from 1990 to 2004 By Country or Regional Group

Intercept	Percentage with BA or higher	Percentage with Mother Tongue English or French	Percentage Visible Minority	GDP Per Capita (2005)	Adj. R2
30061.04	41.64853	126.8165	-110.3150	0.022975	0.774951
(11.40)**	(0.49)	(4.92)**	(-4.88)**	(0.31)	
21090.1	32.84757	106.3553		0.258725	0.541676
(7.82)**	(0.49)	(2.93)**		(3.17)**	
31382.58		123.9739	-109.5581	0.028706	0.777273
(14.57)**		(4.88)**	(-4.87)**	(0.39)	

Analysis of Individual Micro Data

The most common approach utilized in Canada to explain the employment income of recent immigrants has been to estimate reduced form equations with employment income as the dependent variable and with human capital and other characteristics of the immigrants as the explanatory variables (Abdurrahman and Skuterud, 2005, p.644; Frenette and Morissette, 2003, p.1,17,18; Nadeau and Seckin, 2010, p.8). The dependent variable is usually specified in logarithmic form so that the coefficients can be interpreted as elasticities but a level form can also be used. The human capital variables utilized usually relate to education, language and work experience. Other characteristics relate to age, sex, and province of residence. The big advantage of this approach is that it takes full advantage of all the individual information contained in the micro data base, which consists of data on 41,517 individuals who immigrated between 1990 and 2004 and for whom data on employment income was available.

The regression results are shown in Table 9. Separate equations are estimated for men and women because of the different likely impact of the explanatory variables given differences in labour market behaviour. The first thing worth noting about the equations is that, judging from the R^2 of 0.115 to 0.145, the factors considered only explain a small proportion of the variance of employment income. However, this is not unusual in carrying out empirical analysis with large cross sectional data bases like the Census, which do not yield the same high R^2 (in excess of 0.9) as is usually the case in time series analysis where there is often a high degree of multicollinearity of all the variables. What is most relevant here is the t-statistics indicating the significance of the individual explanatory variables and the F statistic showing the high overall significance of the two estimated equations.

The first set of explanatory variables (after the constant term usually included in all regressions to reflect the average value of the dependent variable which is unrelated to the explanatory variables) are zero-one dummy variables reflecting the age group of the immigrant. The coefficients show that immigrants aged 35-44 earn $3,430.90 more than those aged 25-34 (the benchmark group) if they are men and $3,127.55 if they are women; men aged 45-54 earn $1,462.61 more and women aged 45-54 earn $1,773.45 more; and men aged 55-64 $8,156.27 less and women aged 55-64 $4,379.18 less. The coefficients are all highly significant except for the coefficient for men aged 45-54.

The next explanatory variables are also zero-one dummy variables measuring the human capital embodied in the education of the immigrants. They are based on the information from the Census, indicating the person's most advanced certificate, diploma or degree

with the reference group being those responding none. The coefficients show that employment income earned by immigrants goes up with education and that they are highly significant for women for all levels of education, but for men only for college programs of 2 years duration and above. However, these coefficients do not provide a complete estimate of the impact of education on earnings. For the first time in the 2006 Census a question was included on the location of education to get a better handle on the extent to which foreign education was being discounted in the labour market. It "indicates the province, territory (in Canada) or country (outside Canada) where the highest certificate, diploma or degree was obtained" and "is only reported for individuals who had completed a certificate, diploma or degree above the secondary (high) school level" (Statistics Canada, 2009, p.51). The location of study variable was used to construct a dummy variable to indicate if the education was obtained outside of North America or Europe where most of the world's highest quality educational institutions are located. This variable was then multiplied by the dummy variables for the highest level of education. Their coefficients show the extent to which education outside of North America and Europe is discounted by employers. For men, the coefficients are most significant for Medical, Dental, Optometry or Veterinary Degree, and Masters Degrees. Interestingly the discount is not so large and is not significant for those with a doctorate degree. For women, the coefficients are significant and indicate a substantial discount for all education from a university certificate or diploma up to but not including a doctorate. The new variable on the location of study does provide evidence that strongly confirms the discounting in the Canadian labour market of higher education from outside North America and Europe.

This result confirming the lower contribution to earnings of education obtained outside of North America and Europe is consistent with the findings of Sweetman (2004) on the importance of educational quality in explaining immigrant wages. He found that "immigrants from source countries with lower quality educational outcomes, as measured by international test scores, are observed to receive a lower average return to their schooling in the Canadian labour market than those from countries with higher quality results" (Sweetman, 2004, p.4).

The next variable included is a dummy variable for marital status equal to one if married and zero otherwise. Its coefficients are highly significant for both men and women, but show opposite effects, which can probably be explained by the incentive that marriage gives men to earn income and women to fulfill more traditional roles in caring for children and housekeeping. A married recent immigrant man on average earns $7,966.75 more than an unmarried, and a married recent immigrant woman $1,856.71 less.

The variable for visible minority status is a zero-one dummy variable for each immigrant who self identified as a member of one or more groups specified in the Employment Equity Act who are non-Caucasian or non-white, except for Aboriginal Peoples. It coefficient, which is highly significant, shows that visible minority men earn $11,086.63 less than whites and visible minority women earn $2,532.66 less. For visible minority men, this coefficient alone explains a large part of the earning gap with non-immigrants. It does not, however, explain why visible minority status should be associated with lower employment income. It could be that it is a proxy for some other characteristics of these immigrants or it could reflect discrimination.

The variable for Canadian work experience is a hypothetical variable calculated as the difference between the census year reference year 2005 and the year of immigration. For instance, an immigrant coming in 1990 would be deemed to have roughly15 years of Canadian experience in 2005, the year that employment income is measured in the 2006 census. The coefficient for this variable is substantial and highly significant for both men and women. It indicates that ten years of Canadian work experience would add $9,831 to the employment income of a recent immigrant man and $6,970 to a woman.

The next set of variables relate to language, another key aspect of human capital, and a variable that has often been identified as a cause of the deterioration of immigrant earnings in recent years (Grondin, 2005; Picot and Sweetman, 2005; Picot, 2008). The first variable is a zero-one dummy variable for English mother tongue, which is highly significant and raised employment income of men by $12,667.50 and women by $5,428.60. The French mother tongue variable is also significant, but much less so, raising employment income of men by $3,894.10 and women by $3,309.31. The next variable is Knowledge of English, which is also highly significant and raises the income of men by $6,342.03 and women by $2,716.31. It should be noted that these impacts are additive to those of mother tongue so that the overall effect on income is enormous for those with English mother tongue. Knowledge of French also has an impact of $4,917.50 for men and $2,640.40 for women, but these impacts are less significant (and for men do not even qualify at the 5 per cent level of significance). But Knowledge of both English and French is highly significant and has a much larger impact than Knowledge of either language alone of $9,767.11 for men and $5,085.16 for women. This could perhaps

reflect an association of knowledge of multiple languages with natural intelligence, which is an asset in the labour market. It is noteworthy that Knowledge of English is much more important than Knowledge of French in boosting employment income. For instance, an immigrant man with a Knowledge of English would on average earn more than an immigrant man whose Mother Tongue was French and an immigrant woman would only earn slightly less.

The region where an immigrant chooses to reside also has a large (and except for Atlantic Canada) a significant effect on earnings. Relative to comparable recent immigrants residing in Ontario, the benchmark, men earned $9,202.60 less in the Atlantic Provinces, $12,404.18 less in Quebec, and $6,166.87 less in British Columbia and the Territories. On the other hand, in the Prairie Provinces men earned $6,162.52 more. Women also earned $8,711.99 less in the Atlantic Provinces relative to comparable recent immigrants residing in Ontario, $6,820.17 less in Quebec, and $1,779.00 less in British Columbia and the Territories. Again in the Prairie Provinces women earned $1,161.50 more.

The GDP per capita variable in the immigrants Place of Birth discussed above was also utilized an explanatory variable and was highly significant for men (but insignificant and with the wrong sign for women). It shows that for men each additional dollar of per capita income in the Place of Birth (which is a proxy for country or region of origin) raised employment income by 14 cents. A rationale for this impact would be the more relevant work experience acquired by the immigrant in a country that was more advanced like Canada.

The final variable is a zero-one dummy variable for citizenship. It represents the willingness of an immigrant to assimilate and integrate into Canada and might be correlated with the immigrant's degree of assimilation and success in the Canadian labour market (DeVoretz and Pivnenko, 2006; and Nadeau and Seckin 2010). The results show that citizenship alone is associated with a highly-significant increase in employment income of $4,341.37 for men and $3,017.42 for women.

Picot and Hou (2008) attribute much of the post-2000 fall in earnings of immigrants to the Information Technology downturn, and the large concentration of immigrants, especially men in the IT sector. Unfortunately, the occupational information in the 2006 Census is very aggregate and there is no variable permitting identification of immigrants in the IT sector to use as a basis of analysis.

Table 9: Regression of Employment Income of Recent Immigrants from 1990 to 2004

	Men 25-64			Women 25-64		
Variable	**Coefficient**	**t-Statistic**	**Prob.**	**Coefficient**	**t-Statistic**	**Prob.**
Constant	8,537.54	4.22	0.0000	3,518.76	4.02	0.0001
Age 35 to 44	3,430.90	3.98	0.0001	3,127.55	8.15	0.0000
Age 45 to 54	1,462.61	1.50	0.1334	1,773.45	3.98	0.0001
Age 55 to 64	-8,156.27	-6.38	0.0000	-4,379.18	-7.26	0.0000
High School	368.89	0.30	0.7664	1,134.92	2.04	0.0409
Other Trades	2,673.29	1.42	0.1546	2,957.49	3.30	0.0010
Reg. Apprenticeship	3,629.66	1.64	0.1017	4,736.59	3.80	0.0001
College, Program< 1 year	2,535.92	0.72	0.4685	5,051.36	4.21	0.0000
College, Program 1-2 years	4,406.91	2.45	0.0145	6,333.36	8.22	0.0000
College, Program> 2 years	6,625.41	4.04	0.0001	8,298.18	10.97	0.0000
University Cert. or Dipl.	7,420.60	4.77	0.0000	10,488.23	11.45	0.0000
Bachelors Degree	15,377.03	10.06	0.0000	15,892.93	21.28	0.0000
Cert. or Diploma above BA	15,766.19	6.18	0.0000	20,265.86	16.15	0.0000
Medical, Dental, Optometry or Veterinary Degree	78,920.84	14.65	0.0000	33,764.53	14.68	0.0000
Masters Degree	26,485.84	16.04	0.0000	21,902.41	25.00	0.0000
Doctorate Degree	37,133.64	14.68	0.0000	31,324.38	16.23	0.0000
If education outside North America or Europe:						
University Cert. or Dipl.				-3,848.80	-3.75	0.0002
Bachelors Degree	-2,561.65	-1.77	0.0768	-4,980.42	-6.87	0.0000
Cert. or Diploma above BA	-1,080.74	-0.34	0.7351	-10,109.59	-6.30	0.0000
Medical, Dental, Optometry or Veterinary Degree	-29,685.84	-4.29	0.0000	-15,162.49	-5.24	0.0000
Masters Degree	-11,367.10	-5.79	0.0000	-10,169.12	-8.91	0.0000
Doctorate Degree	-5,514.57	-1.16	0.2480	-1,444.63	-0.39	0.6955
Married	7,966.75	9.57	0.0000	-1,856.71	-5.11	0.0000
Visible Minority	-11,086.63	-12.95	0.0000	-2,532.66	-6.03	0.0000
Years of Canadian Work Experience	983.09	10.69	0.0000	696.98	15.99	0.0000
English Mother Tongue	12,667.50	13.33	0.0000	5,428.60	12.07	0.0000
French Mother Tongue	3,894.10	1.99	0.0465	3,309.31	3.33	0.0009
Knowledge of English	6,342.03	4.13	0.0000	2,716.31	4.35	0.0000
Knowledge of French	4,917.50	1.88	0.0595	2,640.40	2.39	0.0169
Knowledge of Both	9,767.11	4.83	0.0000	5,085.16	5.72	0.0000
Atlantic Canada	-9,202.60	-1.02	0.3054	-8,711.99	-2.50	0.0123
Quebec	-12,404.18	-9.51	0.0000	-6,820.17	-10.72	0.0000
Prairies	6,162.52	5.21	0.0000	1,161.50	2.07	0.0384
BC and Territories	-6,166.87	-6.98	0.0000	-1,779.00	-4.37	0.0000
GDP in US$ in Place of Birth	0.14	4.35	0.0000	-0.03	-1.85	0.0639
Canadian Citizen	4,341.37	5.36	0.0000	3,017.42	7.90	0.0000
Observations	19,390			22,127		
R-squared	0.1157			0.1466		
Adjusted R-squared	0.1141			0.1452		
F-statistic	74.48			108.38		
Prob(F-statistic)	0.0000			0.0000		

A Profile of Recent Immigrants Who Succeed

The Census 2006 PUMF data can also be used to profile those recent immigrants who have succeeded in the labour market. Any definition of success is, of course, to a certain extent arbitrary. Nevertheless, for the purposes here, success is defined as reporting employment income in excess of the average reported by non-immigrants in the 25 to 64 age group of $47,634.58 for men and $27,089.47 for women. By this criterion, only 384,596 out of the 1,541,749 or a quarter of the recent immigrants who came to Canada from 1990 to 2004, stayed, and were age 25-64 in 2006 could be considered successful. This means that Canada is admitting many more immigrants than can be successfully integrated in the Canadian labour market. The obvious implication of this is that Canada should substantially reduce the targeted immigration levels to the extent that immigration policy is guided by the country's economic interests in raising per capita income.

It is interesting to compare the proportion of the immigrants who are classified as successful compared to the totals coming from the various countries and regions (Table 10). Countries or regions with a higher proportion of successful recent immigrants are the United States, Jamaica, the United Kingdom, other European countries, other Africa, the Phillipines, and Oceania and others. Countries with lower proportions are Central America, South America, Eastern Africa, Northern Africa, West Central Asia and the Middle East, China, Other Eastern Asia, Other Southeast Asia, India, Pakistan, and Other Southern Asia, In many of these countries or regions as few as one in five recent immigrants can be considered successful according to the definition used here.

Table 10: A Profile of Successful Recent Immigrants by Country or Region

Place of Birth	Total Recent Immigrants	Proportion of Total	Number of Successful Recent Immigrants	Proportion of Successful	Successful as Proportion of Total
United States of America	26,377	1.71	10,469	2.66	37.4
Central America	36,921	2.39	7,399	2.10	21.1
Jamaica	24,490	1.59	7,288	1.90	28.9
Other Caribbean and Bermuda	43,580	2.83	9,878	2.50	21.3
South America	62,003	4.02	14,872	3.73	22.4
United Kingdom	32,222	2.09	15,760	4.06	46.8
Germany	8,472	0.55	3,330	0.86	37.6
Other Northern and Western Europe	29,263	1.90	11,468	2.94	37.3
Poland	35,848	2.33	12,985	3.34	34.7
Other Eastern Europe	112,205	7.28	40,805	10.42	34.5
Italy	3,145	0.20	888	0.28	32.9
Portugal	11,394	0.74	3,551	0.97	31.5
Other Southern Europe	47,020	3.05	16,278	4.37	34.5
Eastern Africa	37,882	2.46	8,250	2.10	20.6
Northern Africa	49,758	3.23	9,545	2.72	20.3
Other Africa	37,882	2.46	11,838	3.14	30.8
West Central Asia and the Middle East	127,076	8.24	22,826	6.36	18.6
China, People's Republic of	186,934	12.12	38,585	9.66	19.2
Hong Kong, Special Administrative Region	74,618	4.84	19,570	4.84	24.1
Other Eastern Asia	77,837	5.05	10,321	2.51	12.0
Philippines	111,021	7.20	35,774	7.89	26.4
Other Southeast Asia	55,455	3.60	12,948	3.02	20.2
India	166,624	10.81	35,367	9.90	22.1
Pakistan	56,195	3.64	9,175	2.87	19.0
Other Southern Asia	73,323	4.76	11,764	3.83	19.4
Oceania and others	13,429	0.87	3,662	1.05	28.9

Note: Success is defined as reporting employment income in excess of the average reported by non-immigrants in the 25 to 64 age group of $47,634.58 for men and $27,089.47 for women.

A comparison of the profile of successful recent immigrants with the total population is very instructive (Table 11). Apparently, Visible Minority status is slightly more common among successful recent immigrant men, but less common among successful women. The extent to which successful recent immigrant men and women both have at least a Bachelors degree (53.42 per cent for successful men versus 35.77 per cent for all and 50.60 per cent for successful women versus 32.54 per cent for all women) is telling. The greater prevalence of more advanced degrees – Masters, and Doctorates – is also significant. But most important of all is that location of the studies of successful recent immigrants in North America and Europe (53.42 per cent of successful men compared to 35.77 of all men and 50.60 per cent of successful women compared to 32.54 per cent for all women). This in effect means that more than half of successful immigrants obtained their highest certificate, diploma or degree above the secondary (high) school level in North America or Europe with Canada (accounting for 25.46 per cent of the location of study for men and 30.99 per cent for women) and Europe (22.78 per cent for men and 16.31 per cent for women) being the main locations of the advanced education.

Concerning language knowledge and skills, having an English Mother Tongue was the characteristic that most distinguished successful recent immigrants from the overall group. Having a French Mother Tongue was also helpful, but to a much lesser degree. Knowledge of English also has a positive effect. Curiously, though, Knowledge of French has a negative effect.

The comparison of the profiles of successful and all recent immigrants underlines the importance of language skills, particularly English, and higher education, especially that

obtained in North America and Europe. It also shows that recent immigrants from the United Kingdom, the United States, and Northern and Western Europe are more likely to be successful.

Table 11: Comparison of Successful Recent Immigrants with All Recent Immigrants

	Men		Women	
	Successful	**All**	**Successful**	**All**
Avg. Emp. Inc. $	83,002	34,011	48,168	18,433
No.in sample	4,592	19,479	5,806	22,196
No.in pop.	169,879	720,617	214,791	821,132
Visible Minority %	86.59	74.19	68.21	75.97
BA or higher %	56.00	38.91	51.10	35.74
Bachelor's degree %	29.38	23.36	29.92	22.16
Univ.cert./dipl. Above %	5.75	4.13	5.65	3.69
Deg.in medicine, dentistry, veterinary medicine, or optometry %	1.46	0.89	1.62	1.17
Master's %	18.16	11.55	11.95	7.81
Doctorate %	5.73	2.59	1.96	0.91
Location of Studies North America or Europe %	53.42	35.77	50.60	32.54
Location of Studies Canada %	25.46	19.01	30.99	19.67
Location of Studies US %	5.18	2.96	3.31	2.01
Location of Studies Europe %	22.78	13.80	16.31	10.86
Location of Studies Other %	32.95	33.82	33.65	33.36
Mother Tongue Eng. Or French %	22.47	15.37	21.18	14.99
Mother Tongue English %	20.91	14.80	20.81	14.89
Mother Tongue French %	4.01	3.60	3.69	3.01
Knowledge of Eng %	85.39	79.17	83.71	77.07
Knowledge of French %	1.07	3.32	1.76	4.31
Knowledge of Both%	12.46	11.94	12.69	10.04

Note: Success is defined as reporting employment income in excess of the average reported by non-immigrants in the 25 to 64 age group of $47,634.58 for men and $27,089.47 for women.

Conclusions

Data from the 2006 Census clearly show the wide range of performance among immigrants from different countries and regions. Those do better who come from countries and regions where a larger percentage of the immigrants speak English or French as a mother tongue, where GDP per capita is higher, or where a lower percentage of the immigrants coming to Canada is visible minority. The data also show that Canada is admitting many more immigrants than are successful in the labour market. This suggests that current immigration policy is not serving to promote Canada's economic interests by raising per capita income.

An important finding of this paper based on new information first obtained in the 2006 Census is on the importance of the location of study to the performance of immigrants. This suggests that the quality of a higher education obtained in North America or Europe should be specifically taken into consideration in improving the selection of immigrants.

Another notable finding of this paper is on the relationship, at least for men, between the GDP per capita in the countries or regions of origin of recent immigrants and their earnings after they come to Canada. This result runs counter to the logic of the point system that has been used to select immigrants (and still is, even after Bill C-50). The point system is designed to pick out the best immigrants from all over the world based on objective criteria like age, education, language ability, and work experience. This should mean that economic class immigrants should perform comparably regardless of their origin and that gaps in performance between immigrants from different countries or

regions are mitigated. This, of course, does not mean that immigrants from countries with a lower proportion of economic class immigrants should not do worse on average.

This paper also reveals a problematic relationship between visible minority status and earnings that is even stronger than the relationship with GDP per capita.

By the same token, the importance of Canadian work experience confirmed in this study also has implications for immigration policy. Taken together with the fact that work experience in the countries from which the vast majority of immigrants come is given very little recognition in Canadian labour markets, it implies that the younger immigrants are when they come to Canada, the better they are likely to do. The system, which was in effect in effect up to 2005 and beyond, gave full points for age up to 49. And under that system, it takes so long for selected immigrants to actually land and settle in Canada that the ability of immigrants to benefit from Canadian work experience over their working lives is significantly reduced.

The results reported in this paper make it clear that the Government is not using the available information from the Census on the performance of immigrants from different countries and regions and on the most important determinants of their performance to assist it in selecting the immigrants that are likely to do best once they are settled in Canada. If it were, there is no way that the difference in performance among countries and regions could be so wide even taking into consideration the different shares of types of immigrants coming from the different countries and regions. Indeed, an observation in past trends in immigration from different countries reveals fairly stable shares that are

unrelated to the economic performance of the immigrants from those countries. As a result, some observers have speculated that this reflects a tendency of immigration posts to each process a certain administrative quota of applications based on the size of the post.

The key question that naturally flows from this paper is what can be done to prevent the poor economic performance of immigrants from particular countries and regions from undermining Canadian economic performance more generally. How can immigrants be better selected with a view to their likely success in Canadian labour markets? And how many immigrants from each country or region can be admitted that are actually likely to succeed in the Canadian labour market?

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