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ABSTRACT: This paper examines ethnic entrepreneurship in Canada at the beginning of the twentieth century. Skilled immigrants were “pulled” into self-employment, and we find strong evidence of assimilation in self-employment. Analysis of recent immigrants supports the hypothesis that liquidity constraints are a strong determinant of self-employment. Christian denomination appears to have little direct impact on entrepreneurial activity, but the determinants of self-employment among distinct ethnic minorities were quite different from other immigrants and native-born Canadians.

Keywords: self-employment; ethnicity; immigration; religion; Canada.

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Introduction

Who becomes an entrepreneur? This question has interested economists since (at least) the early 20th Century. Frank Knight (1921) argued that due to liquidity constraints, the ability to bear risk is a key determinant of entrepreneurship. Schumpeter (1934) considered the role of the entrepreneur to be quite distinct from that of the capitalist, with the latter group financing the prospective activities of the former. The literature on ethnic economic achievement has examined alternative theories of self-employment, many of which are drawn from the work of economic sociologists such as Ivan Light.¹ Borjas (1986) finds that the existence of "ethnic enclaves" creates opportunities for immigrants not available to native-born workers, perhaps through the production of ethnic goods demanded by co-ethnics within the enclave. Yuengert (1994) finds that home-country self-employment rates emerge as the key determinant of native-immigrant self-employment differences. Fairlie and Meyer (1996) report that the gap between self-employment earnings and wage earnings is an important determinant of immigrant self-employment. A second important finding in their research is that immigrant groups with greater advantages in the wage labour market, due to greater human capital and/or lower levels of discrimination, also report higher rates of self-employment.

Although the self-employment literature tends to stress the rising importance of entrepreneurship in North America since the 1970s, self-employment rates were actually higher at the beginning of the 20th century than at the end (Fairlie and Meyer (2002). There is evidence to suggest that understanding the determinants of self-employment circa 1900 may be crucial to understanding immigrant and ethnic

¹ See Light (1972; 1994)

economic achievement in that period. Recent work on early 20th century labour markets in the United States indicates that high rates of mobility into white collar occupations, of which a large share consist of proprietor-type occupations associated with self-employment and entrepreneurship, account for a substantial share of immigrant economic achievement over time (Minns 2000). In the Canadian labour market, Green and MacKinnon (2001) suggest that the slow assimilation of British immigrants may be due to their under-representation as self-employed proprietors.

While researchers have highlighted the importance of immigrant self-employment in Canadian and American labour markets one hundred years ago, the determinants of self-employment are largely unknown. In this paper, a new sample of the Canadian Census of 1901 is used to address this deficiency. This sample is well suited to an examination of many of the leading economic and sociological theories of immigrant self-employment. The analysis will deepen our understanding of the role of entrepreneurship in immigrant adjustment in early 20th century North America. We also use the immigrant sample to explore the liquidity constraints theory of self-employment, for which it is difficult to make inferences in the non-immigrant population.

Historical census data from Canada also allow us to consider a classic (and contentious) dimension of ethnic self-employment and entrepreneurship that has gone largely unexamined. In *the protestant ethic and the spirit of capitalism* (1930), Max Weber argued that a close link exists between religious affiliation and capitalist achievement. It is interesting that the origins of Weber's thesis are in his observations of American entrepreneurial capitalism in the early 20th century. Weber noted that many of the leading lights of American capitalism were members of Protestant sects, and argued that sect membership provided a positive signal to potential customers,

business partners, and creditors (Weber 1948). The writings of one of the leading Canadian sociologists of the mid-20th century suggests that the pattern Weber observed was not exclusive to the United States. In *the vertical mosaic* (1965), John Porter argued that strong ties between membership in Protestant sects, ethnicity, and entrepreneurial capitalism were present in early 20th century Canada. The stylized facts reported by Weber and Porter are based on observations of select samples of "captains of industry" in the United States and Canada. Do their hypotheses hold up to a micro-level examination? The 1901 Census of Canada will allow us to answer this question, as, unlike in the United States, the Canadian authorities asked respondents to report their religious affiliation.

Ethnicity and self-employment in 19th century Canada

The ethnic composition of the Canadian immigrant population at the end of the 19th century was quite different from that of the United States. Over 70 percent of the stock of Canadian immigrant men in 1901 had arrived from Britain and Ireland². Immigrants from England and Scotland are often thought to conform with Charlotte Erickson's (1972) characterisation of the "invisible immigrant," who would integrate seamlessly into North American labour markets, perhaps particularly so in the Dominion of Canada. Catholic Irish immigrants may have been different. John Porter (1965) wrote that this group was the basis of the "urban proletariat" in late 19th century Canada. Others have claimed that Catholics may have had less access to information, credit networks, and other informal institutions that facilitated certain types of employment in Canada (Akenson 1988, p. 99). Less has been written about immigrants from outside of the United Kingdom. In *Colony to Nation* (1946), Arthur

2 Our calculations from the CFP sample used in this paper.

Lower argued that (non-Protestant) European immigrants faced a difficult economic adjustment in Canada. This view is echoed in Kenneth McNaught's *Pelican history of Canada*:

“... The real target of English-speaking Protestant nativism was ... the 'hunky', the 'dago' and the 'Ruthenian'.... With the most meagre assistance from church mission and lacking both language and industrial skills, thousands of the immigrants found themselves living in pestiferous urban slums.” (McNaught, 1969, p. 193)

Relatively little is known about self-employment in early 20th century Canada. Census tabulations of occupation and ethnic origin do not exist prior to 1931, and until recently, little micro data for pre-1970s Canada was available. Some historians have examined occupational patterns in small samples of mid to late 19th century Canadian and provincial censuses. This literature has focused on differences in occupational outcomes between immigrant, ethnic, and religious groups, rather than the determinants of economic achievement. In particular, a piece by Darroch and Ornstein (1980) has been the empirical backbone for much of the recent commentary on occupation and ethnicity in late 19th century Canada. Much of the focus of this work is on distinctions between native-born Canadians and immigrants of British or Irish origin. In a sample of ten thousand households from the 1871 Census of Canada, Darroch and Ornstein found that French Canadians and Irish Catholics were more present in semi-skilled and labouring occupations than other ethnic groups. Scottish Canadians were the most likely to be farming, while Canadians of English origin were the most concentrated in artisan occupations (Darroch and Ornstein, 1980, Table 2). However, no difference was found in the proportions of Irish Catholics and Irish Protestants in “bourgeois” occupations (Akenson, 1988, p. 95), of which a large proportion would be entrepreneurial in nature.

A more recent paper by Green and MacKinnon (2001) offers further

indirect evidence on immigrant entrepreneurship. In 1901 Census samples of the cities of Montreal and Toronto, Green and MacKinnon find that the assimilation of European immigrants was at least as rapid as that of the British. British immigrants appear to have been adept employees in blue-collar occupations, but were under-represented as employers. Green and MacKinnon also report that English-mother tongue immigrants were less likely than the native born to become employers over the life-cycle (Green and MacKinnon 2001, Table 5 and p. 335).

New evidence of self employment in Canada, 1901

The Canadian Families Project (CFP) at the University of Victoria has recently prepared a 5 percent sample of the 1901 Census of Canada. This sample is used in the analysis that follows in this paper. The CFP sample contains most of the standard demographic characteristics available in recent samples of the Canadian census and in IPUMS samples of historical US censuses. Respondents provide information such as age, marital status, place of birth, place of residence (province, city, census district, and subdistrict), and year of arrival in Canada for the foreign-born. The 1901 Canadian census also has information on human capital characteristics relevant to self-employment and other labour market achievement. This census recorded individuals' ability to speak English, and whether they could read and write.³ As is in early 20th century US Census samples, school attendance among children and young adults was recorded, but completed educational attainment was not surveyed.

What distinguishes the 1901 Canadian census from other historical micro-data is the wealth of information on individual economic achievement. The

³ Respondents were also asked whether they could speak French, but there appear to be many missing entries for French language ability.

CFP sample includes detailed responses on occupation, as do US Census data of similar vintage. Canadian census-takers were well ahead of their American colleagues in that individual earnings were recorded as early as 1901. This information is far from perfect, as there is substantial non-response among farmers, servants, and the self-employed, but most wage and salary workers did report their earnings.⁴ Therefore, it is possible to describe the regional structure of earnings for wage employees in early 20th century Canada. The 1901 Census also recorded whether individuals were employed on their own account. The 1910 US Census does have a similar question relating to self-employment, but as wage or salary earnings are unknown, it is considerably more difficult to link self-employment to local labour market opportunities in other occupations. Finally, the CFP sample of the Canadian census has detailed information about religious affiliation.

The sample we use consists of male household heads aged 16 to 65 who were active in the Canadian labour market. The small number of households reporting a female head are excluded from the sample. We use household heads as the unit of analysis, rather than a sample of all adults or all adult men active in the labour market, as we suspect that decisions regarding entrepreneurship and self-employment were dependent on assets and endowments controlled at the household level. This approach is similar to that adopted in studies of self-employment and entrepreneurship in early stages of economic development, or during the transition from a planned to market economy (for example, Blau 1986; Rizov 2003), but differs from studies of self-employment in recent US Census data by labour economists such as Borjas (1986), Yuengert (1994) and Fairlie and Meyer (1996; 2000), who analyze self-employment among all adult men active in the labour market. The sample used

⁴ Forty-four percent of the total sample of adult men reported earnings. Sixty-seven percent of wage and salary earners reported earnings, compared to only 17 percent of the self-employed.

also excludes all farmers and agricultural workers, self-employed or otherwise. This restriction is common in the self-employment literature, and will allow us to make comparisons to Borjas (1986), Fairlie and Meyer (1996), and others. We feel that the decision to become self-employed outside of an agricultural setting is quite different from the decision to become a farmer. This second occupational choice would often require substantial migration, as urban Canadians (or immigrants arriving in Canadian ports of entry such as Montreal, Quebec, or Saint John) would have to relocate to a rural area to take up farming. In addition, many of the theories of self-employment adopted from the sociological literature have been proposed for a non-agricultural setting. Finally, the sample excludes adult men who were recorded as boarding or lodging within a household, due to the difficulties in determining familial relationships among borders.⁵

Table 1 is a snapshot of self-employment patterns from the CFP sample. About 28 percent of household heads in the sample were self-employed. In an alternative sample of all employed adult men, 19 percent report being self-employed. This second self-employment rate are considerably larger than the 16 percent reported by Fairlie and Meyer (1999) from a similar sample of 1910 US Census.⁶ It is difficult to draw direct comparisons of self-employment rates between the two countries, as our sample for Canada is drawn from a Census collected almost a decade earlier, but a higher rate of self-employment for Canada is consistent with what is known about labour market opportunities in both countries. A recent comparison of labour market opportunities between early 20th century Canada and the United States suggests that earnings for similar occupations were about 10 to 15 percent higher on the American side of the border (Green, MacKinnon, and Minns 2002). If, other things equal, the

5 Boarders and lodgers are about 5 percent of the sample.

6 Note that the Fairlie and Meyer sample also excludes farmers and is limited to white adult men.

likelihood of self-employment increases when opportunities in other forms of employment are less attractive, one would expect higher self-employment rates in early 20th century Canada.

The figures for regional self-employment across Canada are also consistent with self-employment being partially a response to poor alternative opportunities in the labour market. Self-employment rates were particularly high in the Maritime provinces on the Atlantic coast, then and now the poorest region in Canada. The recently settled Prairie provinces and territories also featured high levels of self-employment.

Most Canadian residents were Christians. We have sub-divided the Christian population into three groups: Catholics, church Protestants, and Protestant sects. We follow Iannacone (1992) in devising our classification scheme.⁷ It is the experiences of the last group, which were of particular interest to Weber, Porter, and others. Table 1 suggests that those in Protestant sects had self-employment rates only somewhat higher than other Protestants and Catholics. More striking figures are those for Jewish members of the sample, with over 50 percent reporting self-employment in urban Canada in 1901. Among non-white men, about thirty-two percent were self-employed.⁸ While there were relatively few Jews and non-whites present in early 20th century Canada, evidence of high self-employment rates among two minority groups who would be more “visible” than immigrants of British or Irish heritage is intriguing. Higher rates of self-employment for these groups could result

7 In classifying Protestants as church Protestants and Protestant sects, we follow the denominational groups used by Iannacone (1992) where possible. Our Protestant Sect group includes denominations identified by Iannacone as "sects" or "sectlike": the Holiness (Church of God), Evangelical (Gospel), Pentecostal, European Free Church, Fundamentalist, Adventist families, and Latter Day Saints (Mormons). Church Protestants are those denominations considered "most churchlike" or "churchlike" in Iannacone (1992): Anglicans, Lutherans, Presbyterians, Unitarians, Methodists, and Baptists.

8 Non-white Canadians consist of individuals in the sample for whom the answer the census question on “colour” was recorded as “black” (23 percent), “red” (41 percent), or “yellow” (25 percent).

from higher human capital or more intense positive skill-based selection into self-employment, or it might reflect McNaught's (1969) contention that workers who did not conform to Anglo-Canadian standards were crowded out of mainstream Canadian labour markets circa 1900.

Immigrant self-employment rates were only modestly lower than those of the native-born. This pattern is similar to that observed by Fairlie and Meyer (2000) for the US in 1910. Self-employment rates also appear to decrease across successive immigrant arrival cohorts. The final rows of Table 1 list self-employment rates for different immigrant groups. Canadian immigration up to 1900 was dominated by migrants from the British Isles, but some interesting differences do appear for the small number of origin groups listed in Table 1. American and Continental European immigrants had self-employment rates at least as high as the native-born, while English and Irish self-employment rates were 6 to 9 percent lower than the native born.

Age, literacy, and the ability to speak English are the measures of human capital available in the CFP sample. Self-employment was more prevalent among older cohorts, and was positively correlated with literacy and the ability to speak English. Property ownership is strongly correlated with self-employment, although it is unclear from this table to what extent there might be a causal relationship running from ownership to entrepreneurship.

The final set of figures tabulate self-employment by marital status and “working age” household size, where this is defined to be the number of individuals present in the household between the ages of 12 and 65 who report a familial relationship to the household head. This second variable gives an idea of the number of co-residents of the household head that were most likely to supply inexpensive

labour to potential entrepreneurial activities in the household. The tabulations suggest that married men were adverse to self-employment, particularly in urban Canada. This might be interpreted as an indication that family consideration render married men more adverse to the risks of entrepreneurship.⁹ Households of single men have relatively high self-employment rates, but conditional on having a family of size two or greater (which usually is associated with marriage), self-employment rates of household heads appear to have a weak positive correlation with family size.

Explaining immigrant self-employment

What theories of self-employment can explain the patterns seen in Table 1? We begin by noting that our analysis will be based entirely on individual-level estimates of models of self-employment. This approach is similar to that used by Borjas (1986) and Yuengert (1995), but differs from Fairlie and Meyer (1996), who examine group-level relationships between self-employment and relevant group characteristics. The group-level approach is not feasible with the 1901 CFP data, as the sample is considerably smaller than the recent US Census samples used by Fairlie and Meyer, and there are far fewer different immigrant and ethnic groups. We also want to make note of two of the major theories of immigrant self-employment that we do not test. The first is the relationship between home country self-employment and self-employment rates in Canada in 1901. It is not possible to determine early 20th century self-employment rates for the small number of source countries that did send large numbers of immigrants to Canada. The second untested theory is the sectoral

⁹ It is also worth noting that this finding is quite different from the positive relationship between marital status and earnings often seen in wage labour markets. Our finding here suggests that the aversion of married men to the risks of self-employment outweighs the advantages of specialisation in household production that is often offered to explain the positive marriage premium in wage/salary labour markets.

choice model outlined by Fairlie and Meyer (1996). This model postulates that self-employment is positively related to the gap in earnings between self-employment and wage employment. Most working men in the CFP sample who were self-employed did not report their earnings, and it is therefore not possible to fully explore this theory at this point. Fortunately, the data are rich enough to examine many of the other leading theories of self-employment.

Human capital and "disadvantage theory"

One perspective on self-employment is that it is an occupation that engages individuals who are disadvantaged in the wage labour market. If the characteristics of the disadvantaged are such that potential earnings are low in wage employment relative to self-employment, the threshold earnings at which disadvantaged individuals will choose self-employment will be lower. This perspective also implies that there will be negative self-selection on human capital characteristics into self-employment; for example, lower levels of education and language ability will be associated with a greater propensity for self-employment (Borjas and Bronars 1989). This explanation for self-employment decisions, which is often referred to as "disadvantage theory" in the sociological literature, has seen particular application in the analysis of immigrant self-employment (Light 1972). Immigrants have been characterised as a potentially disadvantaged group, as they often arrive lacking host country-specific human capital, such as language ability, and in many cases are migrating from relatively underdeveloped countries where they would be able to acquire relatively little transportable human capital. If these immigrant-specific disadvantages translate into higher self-employment rates, the implication is that immigrants with low levels of human capital are "pushed" into

self-employment by their personal characteristics rather than being “pulled” into self-employment by high potential returns relative to wage employment.

Local labour markets and self-employment

Another set of predictions link individual self-employment decisions to characteristics of the local labour market. The summary statistics presented in Table 1 suggest that self-employment rates varied considerably across early 20th century Canada, with greater self-employment in less developed parts of the country. Immigrant self-employment may be particularly sensitive to local labour market conditions facing the foreign-born. A negative correlation between immigrant self-employment and potential immigrant earnings in the local labour market would reflect discrimination and other factors that reduce the return to activity in the wage labour market, as well as possible access to "ethnic resources" in the form of inexpensive co-ethnic labour (Fairlie and Meyer 1996).

Local conditions may also impact on immigrant self-employment through the existence of “enclave effects”. Some economists and sociologists argue that self-employed immigrants may specialize in the production of ethnic goods, which are in greater demand in areas featuring greater immigrant concentration. Evidence on enclave effects is mixed; Borjas (1986) found that American self-employment rates are higher in geographical enclaves featuring more co-ethnics, perhaps due to the ability of immigrant entrepreneurs to provide special or ethnic goods to their community, while studies by Aldrich and Waldinger (1990) Yuengert (1994), and Razin and Langlois (1996), reveal little evidence of a positive correlation between immigrant concentration and self-employment rates.

Liquidity Constraints

A further explanation for self-employment is the hypothesis that liquidity constraints determine who becomes an entrepreneur. This hypothesis is generally attributed to Knight (1921), and has been explored in more recent empirical work by Evans and Jovanovic (1989) and Evans and Leighton (1989). If the self-employed are risk-taking individuals who are able to finance their own entrepreneurial activities, greater wealth should result in a higher probability of being self-employed, other things equal. The CFP sample of the Canadian Census does contain information related to individual wealth. Census respondents report their property ownership, and there is only limited non-response for this variable.¹⁰ While property owners were likely wealthier and more able to finance entrepreneurship, it is difficult to draw a causal link between property ownership and self-employment in a single cross-section. If self-employment offers high returns to (successful) entrepreneurs, they would as a consequence be more likely to accumulate property. Another characteristic that would ease liquidity constraints is family size, or more precisely, the number of family members old enough to supply low-cost labour in the family enterprise. Family labour would be crucial to potential entrepreneurs in environments where there is limited access to outside labour markets. As with wealth, "labouring household size" may be endogenous. Income and substitution effects would motivate entrepreneurs to have larger or smaller families; which effect dominates is an empirical question, but it is clear that a link exists through which entrepreneurial success can feed back into fertility decisions. The immigrant population offers a

¹⁰ The Census also asked more detailed information related to property ownership, such as number of buildings owned, acres of land owned, and silos and factories owned, but there is substantial non-response in all of these questions. An additional Census question inquired as to the number of rooms in the house in which the household was resident, but this information is also absent for a substantial number of households.

simple potential solution to this problem. In a sample limited to recent immigrants, characteristics such as property ownership and family size are much less likely to be endogenous, as immigrants would not have had sufficient time to adapt their behavior in response to occupational outcomes. Therefore, regression coefficients estimates ought to be closer to their “true” causal values than in a sample that includes the native-born and immigrants of greater tenure.

Religion

Economic historians of 19th century Europe have noted long-running differences in economic development between countries and regions of primarily Catholic orientation and those of primarily Protestant orientation (for example, Blum and Dudley 2001). Slower economic development in Catholic areas would result in lower levels of human capital among Catholic Europeans, and religious differences in human capital would be transferred to North America through immigration.

The writings of Weber suggest that religion may have had a direct impact on entrepreneurship in North America. If sect membership in the Protestant community allowed the individual "to acquire a certificate of moral worthiness," with "membership in the sects provid[ing] an outward and visible sign of honesty about prices and credit," (Porter 1965, p. 288) one would expect that conditional on individual human capital, religious affiliation would affect self-employment. One channel through which religion may have a direct impact on self-employment would be through a religious-enclave effect of the type discussed earlier. That is, the credit-worthiness perhaps associated with religious affiliation has greater value in an environment with a substantial number of co-religionists. A second possibility is that religion enhances entrepreneurial reputation regardless of the local environment. In

this case, we would expect to find that religious affiliation has an impact on self-employment after conditioning on individual characteristics and district characteristics.

An implicit assumption in the analysis to follow is that religion is an exogenous characteristic. This may seem a reasonable assumption for mainstream Catholic and Protestant churches, where most individuals are "born" into the church. It is less evident that this is an appropriate assumption for the Protestant sects; Weber's writings on religion in early 20th century America emphasize that entrance into the new Protestant churches was selective, and that continued membership subject to members following an appropriate code of behavior (Weber 1948). Estimates of the impact of religion on self-employment will be biased if unobserved characteristics associated with membership in a Protestant sect also serve as determinants in the self-employment decision. A plausible econometric strategy to deal with the possible endogeneity of religion in the single cross-section of the CFP is unavailable, but we will comment on the possible impact of this type of bias in the discussion of our results.

Estimations and results

The baseline model

In the regression analysis that follows, the dependent variable is an index I_i , which takes a value of 1 if individual i is self-employed and a value of 0 if the individual works for a wage or salary. The decision to become self-employed depends on observable characteristics X_i , which enter the following model for the latent variable I_i' :

$$I_i' = X_i' \beta + \epsilon_i \quad (1),$$

where ε_i is and iid error term, and

$$I_i = \begin{cases} 1 & \text{if } I_i' \geq 0 \\ 0 & \text{if } I_i' < 0 \end{cases} \quad (2).$$

Equations (1) and (2) imply that an individual chooses self-employment ($I_i=1$) when I_i' is positive, and chooses wage or salary work ($I_i=0$) otherwise. The probability of self-employment is estimated with a probit regression model.

Estimates of the baseline model are presented in Table 2, where the reported coefficients represent marginal effects from probit regressions.¹¹ These results indicate determinants of self-employment in the full sample. Comparisons can then be made to immigrant-specific results that follow. The specification in Column I includes basic individual characteristics such as age, the square of age, marital status, literacy, and the ability to speak English as explanatory variables. The relationship between age and self-employment is consistent with a life-cycle model of self-employment; early in life, individuals are more likely to become self-employed as experience increases, while towards the end of the life-cycle the risks of self-employment and shortening of the time horizon deter this form of employment activity. The positive association between literacy and self-employment suggests that the self-employed are positively selected on this basic form of human capital. This is consistent with a "pull" model of self-employment, under which more skilled individuals select themselves into self-employment in response to the rewarding opportunities in this occupation. The ability to speak English, however, does not seem to increase the likelihood of self-employment, and married men appear less likely to be self-employed.

¹¹ For continuous variables, the marginal effects are calculated at the mean values of explanatory variables. For dummy variables, the marginal effects reflect the impact of switching the value of the variable from zero to one.

Column II adds property ownership and the number of working age household members to the regression. These variables are thought to correlate with household assets that would make self-employment more likely in a world where liquidity constraints are an important determinant. The coefficient estimates for these two variables could suffer from bias due to reverse causality. We will return to this issue later, but for now we note that property ownership is positively correlated with self-employment, while working age household size does not appear to correlate with self-employment. The addition of these variables has little effect on the coefficient estimates for the other variables included in the models in both column I and II. This pattern holds across the various specification used in the paper; point estimates on the core variables of age, literacy, English language ability, and marital status remain virtually unchanged across specifications.

The specification in column III includes a measure of local labour market conditions. This variable is the mean of the log of monthly earnings in the individual's district of residence.¹² The coefficient estimate indicates that lower earnings in the local labour market promote self-employment; a doubling of wages (above the mean wage) would result in a thirteen percent fall in the probability of self-employment. Further controls are for region of residence and residence in an urban area. Rural residents were more likely to be self-employed, and after controlling for local earnings, self-employment rates were significantly lower in Ontario and Quebec than in the Maritimes, the Prairies, or British Columbia. This regional pattern also appears quite sensible; after controlling for district earnings, the central Canadian provinces with larger cities and a wider range of potential

¹² The 206 districts in the 1901 CFP sample correspond to federal election ridings.

occupations and industries featured more wage employment.

Column IV adds a last set of variables to our base specification. The first three variables indicate whether the individual was associated with one of three major religious groups: Catholic, sect Protestant, and Jewish.¹³ The final variable is an indicator whether the individual was foreign-born. Three of the four additional variables are statistically significant; Canadian Jews continue to appear highly entrepreneurial, while Catholics and the foreign-born were less-likely to be in self-employment, conditional on other characteristics.

Immigrant self-employment

In Table 3 we augment the baseline regression specification from column III of Table 2 to examine the relative self-employment of immigrants. The table lists coefficient estimates on immigrant-specific variables that are added to the earlier regression specification; estimates from regressors in Table 2 column III are virtually unchanged and are not reported in Table 3. When cohort dummies are added to the specification, we find that more recent immigrant arrivals 1865 were significantly less likely to be self-employed. This is consistent with the pattern seen in the summary statistics in Table 1, and offers evidence against the view that self-employment among immigrant was primarily an occupation of the disadvantaged.

Column II replaces arrival cohort dummies with birthplace dummies for the major sources of Canadian immigrants. This second set of results suggests that immigrants from the Britain, Ireland, and Scandinavia were substantially less likely to be self-employed than the native-born, while continental Europeans exhibited high rates of self-employment. This also fits with the pattern from Table 1; while these

¹³ Church Protestants are the reference group in this regression.

immigrant groups are relatively homogeneous by present-day standards, the variation in self-employment rates by source country or region cannot be fully explained by variation in human capital and other characteristics. This result is also consistent with Green and MacKinnon's (2001) finding that English mother-tongue immigrants were relatively under-represented in this class of occupation, though we will show below that there was convergence in self-employment between (predominantly British) immigrants and the native-born over the life-cycle.

Column III introduces a variable indicating the concentration of immigrants in the local district, and an interaction term between district immigrant concentration and immigrant status. The coefficient estimates on this second variable can be taken as an indicator whether immigrant self-employment arises as a response to immigrants' comparative advantage in the provision of ethnic goods for the local market. The results offer some support for the ethnic goods hypothesis. Self-employment rates are significantly higher in districts with a higher proportion of foreign-born, and while it just fails to be statistically significant at the 5 percent level, an additional positive self-employment premium accrues to immigrants in districts with more foreign-born residents. When district concentrations of the three largest immigrant groups are included (Column IV), the results suggest that enclave effects may have played a role in enhancing self-employment among specific ethnic groups. The interaction of nationality and ethnic concentration variables are positive, though statistically significant only for the English and Welsh immigrant group. However, the economic significance implied by these coefficients is limited. For example, a Scottish proportion of almost six percent would be required before Scottish immigrant would be predicted to have self-employment rates at a par with the native-born, other things equal. As the mean Scottish district proportion is only 1.6 percent, with a

standard deviation of 1.3, this would require a district to have a Scottish proportion well over three standard deviations above the mean. This calculation suggests that ethnic concentration effects were too small to overturn the more substantial negative impact of place of origin.

In Table 4 we explore self-employment in a more restricted sample which includes only the foreign-born present in our Census sample. Control variables for place of residence are included in the regression, though the coefficients are not reported in Table 4. Column I replicates the base specification from Column III of Table 2 for the immigrant sub-sample. Most of the coefficient estimates in Column I of Table 4 are of a similar order of magnitude to the baseline results from the full regression sample listed in Table 3. These results strengthen the evidence from Table 3 in favour of the view that skilled immigrants in early 20th century Canada were "pulled" into self-employment, rather than it being a fall-back option for those lacking the human capital necessary to succeed in wage employment. Mean district earnings do not appear to affect immigrant self-employment probabilities (column I), but a strong negative impact on self-employment appears when this variable is replaced with the immigrant-specific district wage (column II). This is consistent with their being a certain degree of labour market segmentation between immigrants and the native-born in Canada; what mattered for immigrants were not overall conditions in the locale, but conditions specific to the immigrant subset of the labour market.

The addition of cohort dummy variables in (column III) supports the view that immigrants assimilate into self-employment with increasing time spent in Canada. One might argue that the existence of this relationship in a single cross-section is due to "cohort effects" resulting from changes in employment aptitudes across successive immigrant cohorts (Borjas 1985). Controlling for place of origin

should help redress any difficulties created by the presence of cohort effects; difference in labour market “quality” between successive immigrant cohorts are usually attributed to the changing source country composition of immigrant flows. When both cohort indicators and place of origin controls are included (column V), the pattern of assimilation in self-employment seen in column III is confirmed, with coefficient estimates for cohort indicator variables virtually unchanged. Immigrant self-employment in early 20th century is clearly associated with greater familiarity with the Canadian economy.

A more restrictive version of the sample adopted in Table 4 can be used to better examine the hypothesis that liquidity constraints partially determine self-employment decisions. Column VI of Table 4 limits the sample to immigrants who arrived in Canada in the five years preceding the taking of the 1901 Census. Standard errors are considerably larger, as one would expect in a sample that is less than 10 percent the size of the full immigrant sample. Turning to point estimates, there is little change on the coefficient for property ownership, despite our concerns about potential endogeneity. Potential family labour, which might be expected to be an important determinant of self-employment in an environment where access to labour markets might be limited, does not appear to correlate with self-employment in a meaningful way. Greater wealth, as measured through property ownership, does appear to encourage self-employment. This suggests that while potential immigrant entrepreneurs may not have been limited in their access to labour outside of the family or household, credit constraints were an important factor in determining who became self-employed circa 1900.

Religion and self-employment

The relationship between religion and individual self-employment is explored in detail in Table 5. We will return to the remarkable self-employment experiences of Jewish Canadians a bit later; in Table 5 the sample is limited to Christians who can be classified as part of one of three groups: Catholics, church Protestant, and sect Protestants. It is the last of these three groups that drew particular interest from sociologists such as Weber (1948) and Porter (1965), who argued that the entrepreneurial classes in both Canada and the United States drew heavily from Protestant sects. In column I of Table 5 we extend the baseline specification with dummy variables for Catholic or Protestant sect (PS), as well as interactions between foreign birth and religious group. This most simple specification supports the interpretation one would make based on the summary statistics in Table 1. Conditional on individual characteristics, differences in self-employment among Christian denominations were small; Catholics were only somewhat less likely to be self-employed than church Protestants, and no meaningful difference is apparent between mainstream Protestants and members of sects. We noted earlier that a reader might question the exogeneity of membership in a Protestant sect. If sect membership was positively correlated with unobservables that also determined self-employment, we would expect this coefficient to suffer an upward bias. We do not have data at hand that will allow us to rule out the possibility of an upward bias, but if such a bias exists, the implication is that the "true" effect of sect membership is negative, or at least less positive than reported here.¹⁴

¹⁴ It should be noted that sect membership may not necessarily draw upon individuals with high levels of observed or unobserved human capital characteristics. Murray (1995) illustrates how in the case of the Shaker community, it was the relatively unskilled who were attracted to the communal nature of Shaker life.

Interaction terms for immigrant status and religious group indicate that self-employment patterns by religion are broadly similar in the native-born and foreign-born populations. Column II explores religious differences among immigrants from Britain and Ireland.¹⁵ Self-employment rates among British and Irish immigrants were lower than other Canadian residents, and Catholic Scottish and Irish immigrants in Canada did have notably lower self-employment propensities than did church Protestants.

The results listed in Columns I and II of Table 5 indicate that religion had only a weak effect on self-employment patterns, with modestly lower self-employment among Catholics than among Protestants of varying denomination. In column III, controls are introduced for self-employment differences between French Canadians and the rest of the sample. The magnitude of the (negative) Catholic coefficient is doubled in this specification, as self-employment rates were relatively high among (predominantly Catholic) French Canadians. Column IV examines whether access to co-religionists affected self-employment outcomes. This specification could partially rehabilitate the views of Weber and Porter if, for example, membership in a Protestant sect was a positive determinant of self-employment in regions with more like-minded individuals. The results suggest that membership in a Protestant sect had little role in determining self-employment, regardless of the composition of the local population. For Catholics the result is rather different; increasing Catholic concentration tended to lower self-employment rates among non-Catholics, but had little effect on Catholic self-employment.¹⁶ This

15 This specification also includes controls for origins in Europe and the United States, though we do not report these coefficients.

16 The sum of coefficients on the Catholic district proportion variable (-.131) and the interaction between Catholic district proportion and Catholic status (.136) is not significantly different from zero. Therefore, self-employment rates among non-Catholics decline as Catholic concentration

result is robust to the exclusion of the province of Quebec from the sample, which had a largely French Canadian and Catholic population.

The self-employment of distinct minorities

The findings presented in Tables 3 to 5 suggest that ethnicity did not play a large role in the determination of self-employment in early 20th century Canada. Both the native-born and immigrants were “pulled” into self-employment along skill lines, and religion does not appear to have had substantial direct effects on self-employment. This might reflect the homogeneity of the immigrant population, and its similarity to native-born Canadians. Over 80 percent of the immigrants in our sample were from countries where English is the mother tongue, and would likely have a similar cultural background to native-born anglophone Canadians.¹⁷ In this section, we consider the self-employment experiences of two distinct minorities who would share little common ethnic affiliation with the majority of the population in any region: Jewish Canadians, and non-white Canadians. Many scholars have examined entrepreneurial and occupational outcomes in these two groups. Godley (2001) finds strong propensities for self-employment among late 19th century Jewish communities in London and New York. Consistent with the assimilation perspective, he finds high rates of occupational mobility into entrepreneurial employment. This direct evidence on Jewish entrepreneurship is complemented by earlier findings of rapid occupational progress among Jewish immigrants to the United States in the early 20th century (for example, Chiswick 1991). For black Americans and other visible minorities, the stylised facts are rather different. Recent work on the United States suggests that

increases, while Catholic self-employment is unaffected.

17 French Canadians also would have a quite different cultural background to most anglophone Canadians. In the work that follows we limit our attention to minority groups who would not form a majority anywhere in Canada; French Canadians were the dominant ethnic group in the province of Quebec.

black, Hispanic, and Asian Americans are not positively self-selected into entrepreneurial occupations to the same degree as are white Americans (Borjas and Bronars 1989).

In Table 1 we saw that both of these groups had high self-employment rates. Table 6 lists the key determinants of self-employment for Jewish and Non-white Canadians in 1901. The relatively small samples lead to imprecise estimates, with many coefficients failing to be statistically significant at conventional levels. Nonetheless, the results strongly suggest different patterns of selection into self-employment in these two groups. Among Jewish Canadians the econometric results support the “pull” model of entrepreneurship; age and literacy have large (though not significant) marginal effects on self-employment. Credit constraints appear less important for this group, and Jewish self-employment appears highly sensitive to wages in the local labour market. The coefficient estimates on arrival cohort variables suggest the possibility of assimilation into self-employment for this group. Non-white Canadians do not appear to have been positively selected into self-employment. None of the key human capital variables have substantial marginal effects. Our wealth measure is highly correlated with self-employment for the non-white sample. While some caution is necessary in interpreting this coefficient, this result is consistent with non-whites being more constrained in their ability to finance entrepreneurship through sources other than personal assets and wealth. Finally, a strong positive relationship emerges between self-employment and local wages. This fits with the view that the visible non-white minority was locked out of wage employment in more prosperous labour markets, and as a consequence “pushed” into self-employment. Column III estimates the same set of determinants used for Jewish immigrants in column I for a sample of non-white immigrants. For non-white

immigrants, the ability to speak English was an important determinant of self-employment. Other marginal effects are consistent with the findings in column II, and the addition of arrival cohort dummies indicate little evidence of rising self-employment with increased experience in the Canadian labour market.

Conclusions

This paper offers a first look at the determinants of self-employment and its role in immigrant adjustment in early 20th century North America. We find that entrepreneurship was an important avenue for economic advance among Canadian immigrants over one hundred years ago. Skilled immigrants appear to have been “pulled” to the high potential returns from self-employment, rather than being “pushed” out of wage/salary employment due to disadvantageous characteristics. We also find evidence of immigrant assimilation in self-employment, with reported rates of self-employment rising with time spent in the Canadian labour market. These findings reinforce the importance of examining late 19th and early 20th century immigrant outcomes outside of the much-studied manufacturing and industrial occupations. The immigrant sample provides important evidence in favour of the liquidity constraints hypothesis of individual entrepreneurship. Recent immigrants who held sufficient wealth to acquire property shortly after arrival in Canada were considerably more likely to become self-employed. We find only limited evidence of the existence of enclave effects, with the impact of local immigrant concentration having considerably less weight than that of other key covariates.

Christian affiliation does not appear to have led to differences in self-employment among otherwise similar Canadians, but sharper differences in the selection into self-employment are apparent in the small number of distinctive

minorities present in early 20th century Canada. Jewish Canadians were positively selected into self-employment on skills, and were highly responsive to opportunities in the wage labour market. Results for non-white Canadians are more consistent with the “push” model of self-employment: there is no evidence of the more skilled being drawn to entrepreneurship, and high wages in the local labour market do not appear to have pulled this group out of self-employment.

Most Canadian immigrants in the early 20th century were of British or Irish origin, and flows dominated by these “invisible immigrants” appear to have fitted into self-employment in much the same way as their native-born counterparts. Whether self-employment patterns were similar in the United States, where immigrant inflows were much more diverse through the later 19th century, is an important question for future research.

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Table 1: Self-employment by region, ethnic, and demographic group

| | | | |
|---------------------------|------------|------------------------------|------------|
| Full sample | 28[21409] | <i>by birthplace:</i> | |
| | | USA | 28 [589] |
| Urban areas | 24 [12910] | England and Wales | 22 [1865] |
| Rural areas | 33 [8499] | Scotland | 26 [575] |
| | | Ireland | 19 [657] |
| British Columbia | 29 [1166] | Scandinavia | 24 [199] |
| Prairie | 34 [1192] | Continental Europe | 32 [602] |
| Ontario | 26 [8832] | | |
| Quebec | 24 [6730] | Born 1850s | 33 [4804] |
| Maritimes | 36 [3489] | Born 1860s | 31 [5760] |
| | | Born 1870s | 26 [6766] |
| White | 28 [20922] | Born 1880s | 20 [3657] |
| Non-white | 32 [487] | Born 1890s | 16 [82] |
| Catholic | 25 [8523] | | |
| Church Protestant | 29 [12046] | Married | 27 [19529] |
| Protestant sect | 31 [381] | Not married | 34 [1880] |
| Jewish | 52 [141] | Literate | 29 [18882] |
| French Canadian | 25 [6172] | Not literate | 19 [2527] |
| Other | 29 [15237] | Speaks English | 28 [19315] |
| | | Can't speak English | 24 [2094] |
| Native-born | 28 [16700] | Property owner | 28 [19913] |
| Immigrant | 25 [4709] | Not property owner | 20 [1496] |
| <i>by arrival cohort:</i> | | | |
| pre-1866 | 32 [840] | Size of household aged 12-65 | |
| 1866-1875 | 26 [974] | One | 33 [1252] |
| 1876-1885 | 22 [1201] | Two | 26 [3431] |
| 1886-1895 | 22 [1191] | Three | 26 [3620] |
| 1896-1901 | 22 [503] | Four | 28 [3572] |
| | | Five | 27 [3011] |
| | | Six or more | 29 [6523] |

Notes: The first figure indicates the proportion in self-employment for each group. The number in square brackets is the size of each group. See text for sample details.

Table 2 Base specification

| Variables | I | II | III | IV |
|---------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| Age | 0.018 (8.11) | 0.017 (7.42) | 0.019 (7.98) | 0.019 (7.96) |
| Age ² /100 | -0.016 (6.03) | -0.015 (5.53) | -0.016 (6.07) | -0.016 (5.84) |
| Literate | 0.109 (10.05) | 0.108 (9.97) | 0.127 (11.80) | 0.127 (11.58) |
| Speaks English | 0.002 (0.13) | 0.002 (0.16) | 0.009 (0.59) | 0.004 (0.27) |
| Married | -0.070 (6.02) | -0.074 (6.09) | -0.050 (4.05) | -0.053 (4.28) |
| Property owner | - | 0.058 (4.47) | 0.078 (5.69) | 0.079 (5.81) |
| Household size, age 12-65 | - | 0.000 (0.09) | -0.002 (1.35) | -0.002 (1.25) |
| District wage | - | - | -0.131 (7.12) | -0.128 (6.92) |
| Rural | - | - | 0.080 (11.32) | 0.078 (11.06) |
| British Columbia | - | - | -0.017 (0.81) | -0.004 (0.21) |
| Ontario | - | - | -0.090 (5.96) | -0.103 (6.77) |
| Quebec | - | - | -0.087 (5.58) | -0.093 (5.57) |
| Maritimes | - | - | -0.004 (0.30) | -0.028 (1.71) |
| Catholic | - | - | - | -0.031 (3.59) |
| Protestant sect | - | - | - | 0.033 (1.36) |
| Jewish | - | - | - | 0.431 (10.02) |
| Foreign-born | - | - | - | -0.076 (9.18) |
| Log-likelihood | -11673 | -11663 | -11340 | -11253 |
| N | 20064 | 20064 | 19904 | 19904 |

Notes: The dependent variable is self-employment status. Coefficients in **bold** are significant at the 5% level, and z-values are in parentheses.

Table 3: Extended specification - immigration

| Variables | I | II | III | IV |
|---------------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| Immigrant, pre-1866 | -0.015 (0.91) | - | - | - |
| Immigrant, 1866-1875 | -0.043 (2.90) | - | - | - |
| Immigrant, 1876-1885 | -0.070 (4.83) | - | - | - |
| Immigrant, 1886-1895 | -0.079 (5.79) | - | - | - |
| Immigrant, 1896-1901 | -0.096 (3.84) | - | - | - |
| Born US | - | -0.009 (0.44) | -0.028 (1.20) | -0.003 (0.14) |
| Born Scandinavia | - | -0.084 (2.55) | -0.104 (2.98) | -0.079 (2.41) |
| Born Continental Europe | - | 0.050 (2.52) | 0.052 (3.07) | 0.059 (2.88) |
| Born England and Wales | - | -0.082 (7.40) | -0.102 (6.50) | -0.126 (5.85) |
| Born Scotland | - | -0.050 (2.67) | -0.070 (3.25) | -0.091 (2.43) |
| Born Ireland | - | -0.118 (6.82) | -0.134 (6.89) | -0.136 (4.42) |
| District proportion (DP) immigrant | - | - | 0.139 (2.02) | - |
| Immigrant*(DP immigrant) | - | - | 0.102 (1.48) | - |
| DP England and Wales | - | - | - | -0.110 (0.69) |
| DP Scotland | - | - | - | 1.428 (3.42) |
| DP Ireland | - | - | - | -0.878 (2.75) |
| (England and Wales)* | - | - | - | 0.717 (2.48) |
| (DP England and Wales) | - | - | - | 1.612 (1.19) |
| Scotland*(DP Scotland) | - | - | - | 0.974 (1.00) |
| Ireland*(DP Ireland) | - | - | - | |
| Log-likelihood | -11307 | -11283 | -11262 | -10093 |
| N | 19904 | 19904 | 19904 | 19904 |

Notes: The dependent variable is self-employment status. All variables in the baseline specification in table 3, column III are included in as explanatory, though their coefficients are not reported. A dummy variable for immigrants born outside of the six main source regions is included in the regression, but the coefficient is omitted here. Coefficients in **Bold** are significant at the 5% level, and z-values are in parentheses.

Table 4: Immigrant sub-sample

| Variables | I | II | III | IV | V | VI |
|---------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|------------------------|
| age | 0.016 (3.17) | 0.017 (3.35) | 0.018 (3.40) | 0.018 (3.54) | 0.018 (3.41) | 0.016 (1.07) |
| Age ² /100 | -0.013 (2.34) | -0.014 (2.52) | -0.016 (2.84) | -0.015 (2.57) | -0.016 (2.75) | -0.015 (.80) |
| Literate | 0.107 (3.58) | 0.108 (3.64) | 0.105 (3.49) | 0.137 (4.77) | 0.133 (4.58) | -0.038 (.50) |
| Speaks English | 0.033 (0.58) | 0.031 (0.55) | 0.018 (0.32) | 0.067 (1.08) | 0.064 (0.98) | 0.180 (2.23) |
| Married | -0.048 (1.98) | -0.051 (2.08) | -0.049 (1.99) | -0.054 (2.19) | -0.052 (2.10) | -0.065 (1.07) |
| Property owner | 0.075 (2.43) | 0.072 (2.32) | 0.068 (2.20) | 0.085 (2.80) | 0.080 (2.59) | 0.082 (1.26) |
| Household size, age 12-65 | 0.003 (0.86) | 0.002 (0.81) | 0.002 (0.72) | 0.001 (0.40) | 0.001 (0.22) | -0.006 (.49) |
| District wage | 0.003 (0.08) | - | - | - | - | - |
| District immigrant wage | - | -0.069 (2.37) | -0.061 (2.10) | -0.069 (2.39) | -0.059 (2.02) | -0.086 (1.11) |
| Immigrant, 1866-1875 | - | - | -0.029 (1.45) | - | -0.032 (1.56) | - |
| Immigrant, 1876-1885 | - | - | -0.061 (2.69) | - | -0.076 (3.00) | - |
| Immigrant, 1886-1895 | - | - | -0.074 (3.58) | - | -0.077 (3.39) | - |
| Immigrant, 1896-1901 | - | - | -0.080 (2.65) | - | -0.109 (3.77) | - |
| Born Scandinavia | - | - | - | -0.069 (1.96) | -0.060 (1.68) | - |
| Born Continental Europe | - | - | - | 0.070 (2.53) | 0.076 (2.74) | - |
| Born England and Wales | - | - | - | -0.082 (3.94) | -0.083 (3.91) | - |
| Born Scotland | - | - | - | -0.049 (2.02) | -0.053 (2.18) | - |
| Born Ireland | - | - | - | -0.110 (4.80) | -0.118 (5.11) | - |
| Log-likelihood | -2298 | -2279 | -2271 | -2243 | -2232 | -188 |
| N | 4281 | 4259 | 4259 | 4259 | 4259 | 396 |

Notes: Controls for province of residence and residence in a rural area are included in all specifications, but their coefficients are not reported. US-born immigrants are the birthplace reference group. Coefficients in **Bold** are significant at the 5% level, and z-values are in parentheses.

Table 5: Extended specification - religion

| Variables | I | II | III | IV |
|------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| Catholic | -0.028 (3.02) | -0.028 (3.05) | -0.052 (4.77) | -0.067 (4.35) |
| Protestant sect (PS) | 0.034 (1.15) | 0.026 (0.99) | 0.009 (0.91) | 0.006 (.62) |
| Foreign-born | -0.073 (7.87) | - | - | - |
| Catholic*Foreign-born | -0.017 (.80) | - | - | - |
| PS*Foreign-born | -0.003 (0.06) | - | - | - |
| English and Wales | - | -0.088 (7.60) | - | - |
| Scotland | - | -0.052 (2.73) | - | - |
| Ireland | - | -0.095 (4.29) | - | - |
| Catholic*(England and Wales) | - | 0.021 (.36) | - | - |
| PS*(England and Wales) | - | -0.025 (0.34) | - | - |
| Catholic*Scotland | - | -0.129 (1.39) | - | - |
| PS*Scotland | - | 0.0002 (0.01) | - | - |
| Catholic*Ireland | - | -.0070 (1.84) | - | - |
| PS*Ireland | - | 0.234 (1.08) | - | - |
| French Canadian | - | - | 0.272 (1.30) | - |
| Catholic*(French Canadian) | - | - | -0.172 (0.97) | - |
| PS*(French Canadian) | - | - | -0.190 (1.29) | - |
| District proportion (DP) | - | - | - | -0.131 (4.72) |
| Catholic DP PS | - | - | - | -0.033 (0.76) |
| Catholic*(DP Catholic) | - | - | - | 0.136 (4.46) |
| NP*(DP PS) | - | - | - | -0.246 (1.24) |
| Log-likelihood | -11048 | -11033 | -11079 | -10408 |
| N | 19582 | 19582 | 19582 | 18455 |

Notes: The dependent variable is self-employment status. All variables from the baseline specification in table 3, column III are included in as explanatory variables, though their coefficients are not reported. The sample is restricted to Christians, with church Protestants the reference category for religion. The specification in column II also includes (unreported) controls for birth in the US, Scandinavia, or Continental Europe. Coefficients in **bold** are significant at the 5% level, and z-values are in parentheses.

Table 6: The self-employment of distinct minorities

| Variables | Jewish, immigrant | Non- white | Non- white, immigrant |
|---------------------------|----------------------|-------------------------|-----------------------------|
| | I | II | III |
| Age | 0.044 (0.92) | -0.001 (0.04) | -0.017 (0.57) |
| Age ² /100 | -0.060 (1.00) | 0.003 (0.20) | 0.015 (0.42) |
| Literate | 0.108 (0.87) | 0.040 (0.76) | 0.034 (0.34) |
| Speaks English | -0.243 (1.00) | -0.034 (0.41) | 0.266 (1.95) |
| Married | - | -0.119 (2.12) | -0.109 (1.02) |
| Property owner | -0.031 (0.21) | 0.164 (2.12) | 0.329 (2.04) |
| Household size, age 12-65 | 0.038 (1.46) | -0.011 (0.97) | -0.061 (1.95) |
| District wage | -0.967 (1.83) | 0.342 (2.96) | 0.721 (3.27) |
| Foreign-born | - | 1.06 (1.45) | - |
| Immigrant, 1866-1875 | -0.006 (0.01) | - | -0.076 (-0.34) |
| Immigrant, 1876-1885 | -0.346 (0.91) | - | 0.119 (0.51) |
| Immigrant, 1886-1895 | -0.320 (0.81) | - | 0.116 (0.49) |
| Immigrant, 1896-1901 | -0.445 (1.21) | - | -0.045 (0.16) |
| Log-likelihood | -76 | -253 | -88 |
| N | 124 | 436 | 153 |

Notes: Regressions also include controls for place of residence. The regression specification in column II includes controls for religious affiliation. See text for sample details. Coefficients in **bold** are significant at the 5 percent level. As the entire sample of Jewish men were married, this variable is excluded from the regression in column I.

Table A: Summary statistics

| Variables | Total sample | Self-employed | Self-employed immigrants |
|---------------------------|------------------|------------------|--------------------------|
| age | 40.90 (10.85) | 42.75 (10.62) | 45.32 (10.62) |
| Age ² /100 | 17.91 (9.30) | 19.40 (9.36) | 21.66 (9.72) |
| Married | 0.92 (0.28) | 0.90 (0.30) | 0.86 (0.34) |
| Literate | 0.89 (0.31) | 0.92 (0.26) | 0.97 (0.18) |
| Speaks English | 0.94 (0.23) | 0.95 (0.22) | 0.99 (0.10) |
| Property Owner | 0.93 (0.25) | 0.95 (0.22) | 0.93 (0.26) |
| Household size, age 12-65 | 4.57 (2.39) | 4.64 (2.48) | 4.40 (2.49) |
| District wage | 3.28 (0.23) | 3.26 (0.25) | 3.40 (0.26) |
| Rural | 0.39 (0.49) | 0.48 (0.50) | 0.35 (0.48) |
| British Columbia | 0.05 (0.22) | 0.05 (0.21) | 0.14 (0.35) |
| Prairies | 0.02 (0.13) | 0.02 (0.14) | 0.03 (0.18) |
| Ontario | 0.42 (0.49) | 0.39 (0.49) | 0.50 (0.50) |
| Quebec | 0.32 (0.46) | 0.28 (0.45) | 0.12 (0.33) |
| Maritimes | 0.16 (0.37) | 0.21 (0.41) | 0.06 (0.23) |
| Catholic | 0.40 (0.49) | 0.35 (0.48) | 0.14 (0.34) |
| Church Protestant | 0.50 (0.50) | 0.53 (0.50) | 0.69 (0.46) |
| Protestant sect | 0.05 (0.23) | 0.07 (0.25) | 0.17 (0.38) |
| Jewish | 0.01 (0.08) | 0.01 (0.11) | 0.07 (0.25) |
| Foreign-born | 0.216 (0.42) | 0.188 (0.39) | 1 |
| French Canadian | 0.292 (0.45) | 0.27 (0.44) | - |
| N | 20064 | 5792 | 1098 |

Table A (continued): Summary statistics

| Variables | Total sample | Self-employed | Self-employed immigrants |
|---------------------------------------|------------------|------------------|--------------------------|
| Immigrant, pre-1866 | 0.040 (0.20) | 0.046 (0.21) | 0.242 (0.43) |
| Immigrant 1866-1875 | 0.046 (0.21) | 0.043 (0.20) | 0.228 (0.42) |
| Immigrant 1876-1885 | 0.055 (0.23) | 0.043 (0.20) | 0.225 (0.42) |
| Immigrant 1886-1895 | 0.053 (0.22) | 0.040 (0.20) | 0.213 (0.41) |
| Immigrant 1896-1901 | 0.022 (0.15) | 0.017 (0.13) | 0.092 (0.29) |
| District immigrant wage | 3.42 (0.35) | 3.41 (0.37) | 3.45 (0.28) |
| Born US | 0.03 (0.16) | 0.03 (0.16) | 0.15 (0.35) |
| Born Scandinavia | 0.01 (0.10) | 0.01 (0.09) | 0.04 (0.20) |
| Born Continental Europe | 0.03 (0.17) | 0.03 (0.18) | 0.17 (0.38) |
| Born England and Wales | 0.09 (0.28) | 0.07 (0.26) | 0.37 (0.48) |
| Born Scotland | 0.03 (0.16) | 0.03 (0.16) | 0.14 (0.35) |
| Born Ireland | 0.03 (0.17) | 0.02 (0.14) | 0.11 (0.31) |
| District proportion Immigrant | 12.17 (11.16) | 11.83 (11.35) | 0.22 (0.13) |
| District proportion England and Wales | 4.19 (3.84) | 3.98 (3.76) | 0.07 (0.04) |
| District proportion Scottish | 1.60 (1.30) | 1.60 (1.34) | 0.02 (0.01) |
| District proportion Irish | 1.86 (1.55) | 1.73 (1.45) | 0.03 (0.02) |
| District proportion Catholic | 0.41 (0.33) | 0.38 (0.33) | 0.24 (0.21) |
| District proportion Protestant sect | 0.09 (0.10) | 0.10 (0.11) | 0.08 (0.07) |
| N | 20064 | 5792 | 1098 |

Notes: Standard errors are in parentheses.



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