

## **Entrepreneurial Culture or Institutions? A Twentieth Century Resolution**

*James Foreman-Peck\* and Peng Zhou*

### **Abstract**

This paper tests the strength and persistence of cultural influences on entrepreneurship over the best part of a century. Comparison of marginal self-employment propensities of US immigrant groups in 1910 and 2000 suggests a number of stable customary stimuli, deduced from national origins. In accordance with the 'cultural critique', the English were persistently prone to less entrepreneurship than other US immigrant groups, once controls for entrepreneurship influences are included. The Dutch were consistently about averagely entrepreneurial, not as precocious as might be expected if the predominant Protestant religion encouraged entrepreneurship. Conversely Weber's identification of nineteenth century Catholic culture as inimical to economic development is not born out in the twentieth century by the sustained entrepreneurship of Cubans and Italians in the United States. The strongest entrepreneurial cultures were exhibited by those originating from the Middle East, Greece and Turkey, though some historical interpretation is necessary to establish who these people were. The inference from these patterns is that entrepreneurial culture must be of minor significance for economic development compared with institutional influences.

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Cardiff Business School  
Cardiff University  
Colum Drive, Cardiff CF10 EU

foreman-peckj@cf.ac.uk

## **Entrepreneurial Culture or Institutions? A Twentieth Century Resolution**

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What does a favourable entrepreneurial culture contribute to economic development, compared with other influences, such as appropriate institutions? Business often provided outlets for the energies and enterprise of national and religious minorities who were blocked from rising through the state apparatus. Max Weber (1905/2003 39) instanced Poles in Russia and Eastern Prussia, Huguenots in France under Louis XIV, Nonconformists and Quakers in England, and Jews for two thousand years. For Weber it was the (institutional) barrier, not the culture that explained the economic precocity of these minorities. His most famous supposed positive cultural influence on business and economic development, the Protestant Ethic, was something extra, he maintained.

The cultural critique of British entrepreneurship and capitalism looked instead at how culture constrained economic development. Martin Wiener (1981 111) proposed for the later nineteenth century virtually the converse of Weber's doctrine, with the opposite prediction for entrepreneurial zeal. British later nineteenth century culture allegedly encouraged 'gentrification', exactly what Protestants, or at least Puritans, would never accept, for it entailed enjoying their wealth. A pervasive anti-industrial and anti-business culture especially transmitted through middle class education was supposedly responsible for Britain's 'industrial decline' (Rubinstein 1993 3).

David Landes is more empirical in the grounds for his assertion that culture makes all the difference to economic development, (Landes 1998 516-7). Evidence, he maintains, is expatriate entrepreneurial performance; Jews and Calvinists throughout much of Europe, Chinese in East and South East Asia, and Indians in East Africa, when thwarted by 'bad government' at home, or more generally, by poor institutions. By moving away from the constraining institutions or government, but taking their culture with them, expatriates' cultural inheritances were allowed to flourish.

Landes' first example may be of groups within a country prevented from rising through conventional paths to power and prestige choosing business as an alternative, without necessarily any cultural predisposition to entrepreneurship. Economic migrants are not subject to this objection, but at least two potential problems remain with Landes' analysis.

The first is that culture is not necessarily autonomous or exogenous to economic activity or to institutions. As Landes points out, for instance Thai culture has responded to economic growth, in the allocation of time away from monastic apprenticeship towards making money. Perhaps because of obvious cultural changes in Britain over the quarter century from 1980, the 'cultural critique' is now less popular. British culture, and entrepreneurial culture in particular, on one interpretation proved malleable with changes in institutions, and the economy responded accordingly. Conversely, when institutions are inimical to entrepreneurship, a nation's culture may be moulded into the same form. If culture is very pliable, how can it explain the contribution of entrepreneurial behaviour to economic development, which must necessarily be a long drawn out process?

The second problem is whether expatriate entrepreneurs are a random selection from their culture. Emigrants may be those with more drive or dissatisfaction than the average of their community. If so, their entrepreneurship abroad may give an upward biased indication of the entrepreneurial orientation of the country of origin. Those that get out may be those who choose not to adjust their expectations and behaviour to the dominant national institutions.

The present paper offers a resolution of these two difficulties. To address the first, entrepreneurial cultures are measured over the twentieth century independently of institutional influences. Given the great institutional changes of the period, persistence of culture must imply a form of autonomous existence. For the second, migrant entrepreneurs in their adopted country are compared with a large number of other immigrant nationalities, of which they are perhaps no more atypical than the majority of

their country of origin. This approach excludes non-immigrants on the grounds that they have not been selected in the same way as migrants.

Having constructed a cross-national index of entrepreneurial culture and a measure of entrepreneurial cultural persistence or autonomy, from comparative national performance it is possible to offer a more convincing assessment of culture's contribution to economic development. Section 1 explains the measures of entrepreneurial culture chosen, section 2 describes the data, section 3 sets out the statistical model of entrepreneurship and culture, and section 4 presents the results of the analysis.

### **1. Measuring Entrepreneurial Culture**

Occupational choices of individuals with exceptional energy, restlessness or ambition depend upon both the institutions and culture of their society, as well as their position in it. The decision to become an entrepreneur, identifying and taking advantage of new or unexploited opportunities, is a high level one that can take a variety of forms. In some circumstances many entrepreneurial types choose crime, terrorism, politics or even lobbying, as careers (Baumol 1990).

Culture can be defined as:

'those customary beliefs and values that ethnic, religious, and social groups transmit fairly unchanged from generation to generation' (Guiso et al 2006).

The basic idea of an entrepreneurial culture is that shared belief systems, similar ways of earning a living, and common educational arrangements could combine to create 'cultures' more or less favourable to entrepreneurship. Translated into individualistic economic concepts, the hypothesis is that cultures can influence time preference, work-leisure trade-offs and risk attitudes. With beliefs that generate lower time preference, a culture will encourage more saving, which could increase the opportunity to start new businesses. Cultures with lower values of leisure are likely to create more entrepreneurs, because successful enterprise requires a great deal of sustained effort. Similar outcomes can be expected in cultures that are less cautious - for start-ups are risky.

A beneficial culture often supposedly induces hard work, high savings and honesty, yielding economic growth. Alternatively the right institutions may have this effect; appropriate tax regimes, secure and clearly defined property rights and an impartial judiciary may encourage effort, thrift and integrity, with the concomitant economic payoff. Evidence of the importance of institutions for entrepreneurship is that the legal environment and costs of setting up a firm strongly influence differences in business start-up rates between countries (Klapper, Laeven and Rajan 2006; Ciccone and Papaioannou 2007).

A strong and persistent entrepreneurial culture does not guarantee successful entrepreneurship, nor does it carry implications for the sectors in which enterprise will be exercised. These depend upon governance institutions, human capital, industrial experience in country of origin, technology and entry barriers, among other considerations. Individuals inheriting a highly entrepreneurial culture are simply more likely to exercise their initiative and ingenuity; how they do this, and with what outcomes, will be determined by institutions and history.

Recent research has begun the attempt to quantify culture's impact upon the contemporary economy in general and upon entrepreneurship in particular. Economies in which more people claim religious convictions tend to grow faster, other things being equal, whereas those with higher proportions of church attendance expand more slowly (Barro and McCleary 2003). An explanation for this association is that Church attendance consumes resources, whereas religious convictions motivate. A second cross-country study found that general labour force participation and especially female labour force participation is higher in 'Protestant tradition' countries (including the UK, the USA, Denmark, Sweden and Norway) when other influences have been controlled (Feldmann 2007); the 'Ethnic' apparently still possesses explanatory power.

Another dimension of culture is trust. Religious beliefs are systematically related to how much individuals trust others (in the United States). The chance that a person will found their own firm, self-employment, is also significantly linked to the trust of the individual

(again in the US). Trusting others increases the likelihood of self-employment by 1.3 percentage points (14 percent of the overall self-employment chance) (Guiso et al 2006).

How should we measure entrepreneurship that is encouraged or discouraged by culture? Rubinstein's (1981) pioneering studies used non-landed wealth at death. This has the advantage of distinguishing between more and less successful entrepreneurs, but does not control for inheritance or opportunity. It may give undue prominence to the thrifty - and to the successful if the concern is with entrepreneurs as a whole. In any case the most widely used indicator of entrepreneurship is starting a firm. This is not identical to self-employment (the measure used by Guiso et al above), for some self-employed may inherit their businesses. Others may simply work on their own account without being in anyway innovative, little different from wage labour but without the contractual security. So the practical definition of entrepreneurship adopted is creating a firm that employs people. The contention here is that becoming an employer (in an incorporated business) is an entrepreneurial act in the sense that it involves taking on risk. It also involves being innovative to the extent that setting up any business requires looking for a gap in the market, however narrowly defined. Obviously individuals will show varying degrees of innovativeness and risk bearing but these need not be considered for the collective concept of culture.

To measure the impact of culture on the firm start-up rate we need to know how those brought up in one country perform in a social and economic environment where institutions and market opportunities are different. Moreover to calibrate the measure we require the performance of persons from a range of different cultures in the same environment. The United States provides a convenient laboratory both to test the persistence of distinctive entrepreneurial cultures over the twentieth century and to compare their performance. We can contrast the propensities of immigrants from different countries to start firms there. This avoids the bias of comparing immigrants with indigenous entrepreneurs. Even though migrants may be exceptional in their originating country, each immigrant group will be exceptional to the same extent unless there are historically unusual 'push' factors that must be identified qualitatively

We construct two measures of enterprise. The first is simply the chances of a member of the immigrant group being an employer – relative to other groups. The second is the chance of becoming an employer, holding constant a range of other influences on the outcome. To allow for the objection that experience influences opportunities we control for different sectors in which employment or self-employment takes place. Property ownership influences availability of collateral needed to raise finance for start-up firms, while age, gender, marital status, years of residence in US, education and naturalisation all may determine the likelihood of entrepreneurship. So these are included in the model that estimates the chances of entrepreneurship, other things being equal<sup>1</sup>.

## **2. The US Immigrant Samples**

During the twentieth as well as the nineteenth centuries immigrants from a wide range of cultures arrived in the common environment of the United States and some of them started their own businesses. Their different chances of entrepreneurship provide information about the contribution of their origins.

Cultural persistence here is the stability of entrepreneurial propensities between the 1910 and 2000 US Censuses<sup>2</sup>. Although migrants may be selectively recruited in their countries of emigration (migrants who are not ‘pushed’ could have more ‘get up and go’), this will be true of those from every country. Economic costs of movement differ by original location, as does the strength of the push factor but normally these will only affect the relative volumes of migrant groups. Persecution may be a reason to migrate for large numbers. Yet only when this or other processes select the more or less entrepreneurial from a country does it affect the present ‘experiment’.

The root problem is the linking of national categories to national, as against minority, culture. Armenian immigrant entrepreneurs were prominent in many countries at

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<sup>1</sup> We have excluded agricultural employment from the sample because migrants are likely to have greater difficulty entering agriculture as entrepreneurs and most agricultural self-employment could not be classified as entrepreneurial. Agriculture provides little experience for urban industrial entrepreneurship.

<sup>2</sup> 5 percent samples from IPUMS (<http://usa.ipums.org/usa/>). 1910 is the first year that the employer/employee question is asked.

different periods of history without an Armenian ‘country of origin’ (Godley 2006)<sup>3</sup>. Again, numbers of Greeks living outside Greece in 1907 were much greater than those within the country and Greek migration from Ottoman-dominated areas, especially for political reasons, was common (Salutos 1964 16, 23, 33)<sup>4</sup>. Consequently, those migrants recording Ottoman countries of origin may well have been ethnic Greeks before 1914. Minority migration from the Middle East and Turkey was exacerbated by the rise of nationalism there after 1945 as well. Orhan Pamuk wrote in 2005 that the cosmopolitan Istanbul he knew as a child had disappeared by the time he reached adulthood. The riots of 1955 seem to have been an especially good reason to leave; ‘More Greeks have left Istanbul over the past fifty years than in the fifty years following 1453’ (Pamuk 2005 157-9). Further north, migrants registering Russian Empire country origins in the 1910 US Census are very likely to have been Jews because of the Pogroms from the 1880s.

Even when culture is genuinely identified with country of origin, it may not persist over the twentieth century, because of changed conditions in the origin country. In this case the concept has poor explanatory power for long term entrepreneurship. But there is a considerable body of evidence that particular groups are more entrepreneurial than others at points in time. Turks in Germany were twice as likely to choose self-employment as any other immigrant group there in 2000 (Constant 2004). This does not seem to reflect a willingness to accept lower rewards because the earnings of self-employed Turks are no different from those of self-employed Southern or East Europeans, including immigrants who have become German citizens. Korean/Chinese entrepreneurs starting firms in the US are distinguished from their non-minority equivalent by their possession of substantially more financial capital (Bates 1996). Controlling for firm and owner traits, comparison groups of non-minority and Asian American non-immigrant self-employed borrowers had greater access to loan sources than Korean and Chinese immigrants. But high equity capital investment from the family household wealth offset this disadvantage. In the UK migrants are more likely to engage in new business activity, although recent

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<sup>3</sup> Fethiye Cetin (2009 p107) reconstructs a traumatic Armenian family history and tracks their migrant entrepreneurs from Turkey to the United States before the First World War.

<sup>7</sup> In the poem *The Waste Land* 1922 T S Eliot introduces a Smyrna current exporter by the name of Eugenides.

ethnic minority migration decreases the odds (Levie 2007). Comparing self-employment by the US-born and immigrants in the 1980 and 1990 US Censuses (and therefore including family firms - inheritance of self-employment) yields a substantial positive ethnic effect for Middle East origin, while Mexican and Caribbean origins strongly reduce self-employment chances (Lofstrom 2002).

In the present study, we do not compare immigrants with those born in US but with each other. The US-born are more likely to inherit a family business, which also takes individuals into the employer category. Migrant self-employment through inheritance by contrast is unlikely and is probably in start-ups. The present sample was further restricted originally to immigrant origins that were quite numerous in 1910 in order to make the comparison over time more consistent<sup>5</sup>. But the highly entrepreneurial Middle East was disaggregated subsequently to examine whether particular sources were driving the result<sup>6</sup>. We exclude ‘working on own account’ in the early period and ‘unincorporated business in the later period’, focussing on employers and incorporated businesses, on the grounds that these categories correspond more closely to the conventional idea of an entrepreneur.

We have excluded agricultural employment from the sample because migrants are likely to experience greater difficulty entering agriculture as entrepreneurs and most agricultural self-employment could not be classified as entrepreneurial. Agriculture provides little understanding of urban industrial entrepreneurship. So with Mexican immigrants for instance, we ask whether they are employers or employees in manufacturing or services; we filter out their propensity to work in agriculture.

Countries of origin of immigrants to the US at different times depended on a variety of mainly ‘push factors’. The ‘hungry forties’ of the nineteenth century sent large numbers of German and Irish migrants across the Atlantic. Persecution of Jews triggered another wave of migrants from Russia and Poland beginning in the 1880s. Population growth

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<sup>5</sup> For instance Koreans were not included because although sufficiently numerous in 2000, in 1910 there were too few working as employers outside agriculture.

<sup>6</sup> The base case in the analysis is ‘other North America’.

coupled with weak economic development encouraged increasing migration from southern and eastern Europe in the 1890s. A buoyant demand for agricultural labour and proximity increased Mexican immigration in the first decade of the twentieth century.

Cultural differences between these immigrant waves were widely recognised at the time, and reflected in their wages. Hatton's (2000) measurement of immigrant earning power, translated as 'immigrant quality', shows Jews among the highest earners before 1914, with coefficients identical to those of the Dutch and Finnish. Jewish immigrants were also highly entrepreneurial in both London and New York in the generation before the First World War (Godley 2001). By contrast migrants from Syria and Turkey recorded the largest ethnic handicap in wage earning.

A possible explanation for difference in national self-employment patterns, (and a perhaps an implication of Hatton and Leigh 2007) is that 'pioneer immigrants' are less accepted in the employment market and they more often become self-employed. Once the particular migration stream has formed a community integrated into the culture, or better accepted by the host community, they are more likely to slot into paid employment<sup>7</sup>. Here self-employment is casual or insecure and badly remunerated employment. Whereas the entrepreneurial but low paid migrants from Syria- Lebanon might fit this characterisation in 1910, the higher paid but also entrepreneurial Russian-Polish Jews do not. The category of work for immigrants corresponding to this hypothesis is not that of employer, but working on own account and unincorporated business.

None of these groups was initially 'filtered' for entry by United States legislation. Prior to the First World War, and until the Emergency Quota Act of 1921 the only legally restricted group were the Chinese. The Chinese Exclusion Act of 1882 allowed Congress to suspend Chinese immigration, a prohibition that lasted well over 60 years. The Act refused entry to Chinese skilled and unskilled labourers and Chinese employed in mining for ten years, under penalty of imprisonment and deportation. In 1924 the Immigration Act limited the number of immigrants who could be admitted from any country to two

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<sup>7</sup> Suggested to us by Tim Hatton.

percent of the number of people from that country who were already living in the United States in 1890.

A major policy change came with the Immigration and Nationality Act of 1965 (becoming law in 1968) which abolished the national origin quotas but introduced Western and Eastern hemisphere quotas. Liberalisation continued with the Immigration Act of 1990. After the Act, the United States admitted 700,000 new immigrants annually, an increase of 200,000. The new legislation continued to give preference to immigrants with family members already in the United States. Consequently the past stock of immigrants and quota sizes were extremely influential in determining the country of origin of US immigrants in the years after the Act (Clark, Hatton and Williamson 2007). However in itself this should not bias the degree of entrepreneurship of migrants relative to those in their country of origin.

### **3. The Model of Entrepreneurship and Culture**

Entrepreneurial choice usually involves a comparison on the one hand, of waged employment and rentier income with on the other, uncertain entrepreneurial income. Entry to entrepreneurial employment typically requires commitment of personal capital, which may need accumulating first. In this case the choice is made over time. During the earlier periods the would-be entrepreneur works for wages and saves. In the later periods, when those who continue to opt for wage work or leisure can live off the interest on their savings, the entrepreneur puts the savings into the business (for example Evans and Jovanovic 1989; Xu 1999). Cultures that emphasise deferred gratification, that encourage a low rate of time discount, will encourage savings, and may boost entry to entrepreneurship by bringing forward the date at which the minimum capital for the business start is achieved.

When everybody is risk averse, a person with a higher income is more willing to take a gamble of a given size. The subjective cost of a given uncertain prospect, relative to the expected value of this payoff, is lower the larger is the income at which it is offered. The

rich are more likely to accept a given bet than the poor, and are therefore more probably entrepreneurial. This argument only holds though when the basis for comparison is the same; that is both the rich and the poor in the comparison have equal access to safe incomes as alternatives to self-employment. Risk attitudes may be culturally influenced and the willingness to make risky choices will also depend upon institutional circumstances - such as bankruptcy legislation and family support networks.

Insofar as self-employment is time-consuming, and leisure is a normal good, the rich will be less likely to opt for self-employment. This may particularly apply to the children of self-made business people, who either want nothing to do with the family firm or who do not wish to invest the time in it necessary to be as entrepreneurial as their parents. Family socialization must therefore be distinctive and effective if business dynasties are to survive. The net effect of wealth and income on self-employment then depends on the relative impact of this leisure preference and the personal capital requirement for business starts.

The difference in the uncertain wellbeing from self-employment,  $E(U)$ , and that from paid employment ( $V$ ), is:

$$Y^* = E(U) - V$$

Assuming both RHS terms are linear functions of a characteristics vector  $X$  we have:

$$Y^* = X\mathbf{b} + v$$

where  $\mathbf{b}$  is a vector of parameters and  $v$  is a normally distributed disturbance term with zero mean and unit variance.  $Y^*$  is not observed but the actual occupational choice is. Self-employment is chosen ( $Y = 1$ ) if  $Y^* \geq 0$  and employment ( $Y = 0$ ) if  $Y^* < 0$ , both of which outcomes can be seen. So,

$$\Pr[Y_i = 1] = \Pr[Y_i^* \geq 0] = f(X\mathbf{b})$$

Variables in the  $X$  vector include country of origin, as a measure of immigrant culture, the principal interest of this study. But other influences must also be controlled. The need to acquire savings and work experience means entrepreneurship chances at first increase with age, and perhaps as optimism is tempered by experience, eventually diminishes

(Parker 2004). Experience acquired by residence in the US, is likely to be an essential component of entrepreneurs' information gathering. The ability to speak English probably facilitates this process, and possibly so also would formal education. Entrepreneur's personal wealth, either as a result of savings or inherited, is typically necessary to provide the equity in the new business - for start up capital. (Formal education may be correlated with wealth or income, as an income-elastic consumption good). In the nineteenth century sometimes a motive for founding a firm was to find employment for the progeny of the founder's marriage. More generally families are expensive and self-employment may be perceived as a better way of providing more income than wage employment. If so then marriage boosts entrepreneurship chances<sup>8</sup>. Some migrants intend to return to their country of origin and these are less likely to make the commitment to start a business. To control for this effect we include a 'naturalisation' dummy variable. Finally on the entrepreneurial supply side, greater expected rewards of entrepreneurship may increase the likelihood of an individual becoming an entrepreneur.

The opportunities for entrepreneurship depend on industry entry barriers or their absence. At the beginning of the twentieth century the transport sector was dominated by railways and shipping, both of which were capital-intensive. Capital requirements reduced entrepreneurial opportunity. But at the beginning of the subsequent century changing technology, in particular motor road transport had transformed entrepreneurial opportunities. These possibilities were related to returns to entrepreneurship.

Consequently the probability that an individual will become an entrepreneur can be expressed by a reduced form equation of entrepreneurial supply and 'demand' or opportunities, with expected returns substituted out, as below:

$$\Pr[Y = 1] = f(\textit{gender, marital status, residence duration, formal human capital, English speaking, sector, age, wealth, culture})$$

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<sup>8</sup> Siqueria's (2007) analysis of the US 2000 census for Brazilian immigrants find that being married increases the chances of owning their own business.

## 4. Results

### *Average Entrepreneurial Chances*

We first consider simple entrepreneurial chances as a measure of entrepreneurial culture. As predicted by Max Weber, US immigrants from the Catholic group of countries (table I) in 1910 are near the bottom of the ranking of probabilities, though Wales is lower than Ireland and Italy (as well as China). The highest chances in 1910 are those of the very small Syria and Lebanon group (not shown), then China and Greece, followed by the Russian empire. In 1910 the Greece and Turkey entrepreneurial ratios are quite similar ( $t = 1.5853$ ) which could be interpreted as consistent with common ethnicity.

TABLE I ABOUT HERE

In the year 2000, the top four entrepreneurial groups are those originating from Israel, Syria and Lebanon, Greece and Italy, similar to Australia in 1996 (Collins 2003). Judged by the criterion of similar entrepreneurial proportions at both dates<sup>9</sup>, Mexico, Cuba, Wales, Netherlands, Turkey and Japan show stability, or persistence of entrepreneurial culture. Greece and Italy increase entrepreneurship probabilities. Overall the chances of entrepreneurship decline from 5.1% in the 1910 sample to 3.2% in the 2000 sample.

The simple ratio test does not take into account differences among the migrant samples in characteristics that might influence entrepreneurship. So for example those from some countries of migration were more likely than others to be literate and to own their own house, both characteristics that were conducive to entrepreneurship. Consequently such migrants could show relatively high entrepreneurship because of these attributes, whereas purely for cultural reasons they might be less entrepreneurial than those who were poorer or more illiterate.

Much depends on what is assumed culturally determined. It could be contended that education and literacy, like entrepreneurship, depend upon culture. They are not independent variables in the occupational choice model that includes culture. But

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<sup>9</sup> According to t-tests.

historical accident and path dependence could nonetheless ensure that the independence from culture of the values of variables influencing entrepreneurship at any point in time,

### *Determinants of Entrepreneurship*

Before interpreting the country of origin parameters in the estimates of the above equation, we consider the model controls in Table II. In 1910 a person owning their own property was more likely to be an employer by the same amount as being male; 1.8 percentage points. Residence in the US longer than 10 years is even more important, adding 2.1-2.4 percentage points, though there is not much evidence of increasing effects beyond a decade. Age increases the chances of becoming an employer up to 59 years old. The rise in probability between the ages of 30 and 60 is also about 1.8 percentage points. Literacy and the ability to speak English add respectively 1.2 and 1.4 percentage points.

#### TABLE II ABOUT HERE

The foregoing variables influence the supply of entrepreneurs. Turning to the demand or opportunities, the sector with the lowest entry barrier for entrepreneurship was the wholesale and retail trade - adding 8.7 percentage points to the probability of entrepreneurship, relative to the base case of mining, construction and manufacturing<sup>10</sup>. Transport, communication and other utilities reduced entrepreneurship chances by almost one percentage point relative to the base case. Finance, real estate and personal and professional services added about 4 percentage points.

Ninety years later the marginal effects of the entrepreneurial supply variables are rather smaller on average in 2000 than in 1910. In part this is because the general propensity for self-employment had fallen and perhaps also because of the greater abundance of human capital. Table II shows that being male increases entrepreneurial chances by 1.1 percent in 2000, 0.7 percentage points less than in 1910, and marriage boosts self-employment chances by a similar magnitude (in 2000), much less than the 1.6 percentage points at the earlier date. Age at which probability of entrepreneurship is maximised has risen to

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<sup>10</sup> Adam Smith's implication that the 'First Industrial Nation' was also 'a nation of shopkeepers' was perhaps therefore no chance association.

almost 63, perhaps reflecting greater life expectation. Length of residence in the US for maximum probability of self employment increased to 16-20 years in 2000. Property ownership raises entrepreneurship chances by 1.1 percentage points in the later year compared with 1.9 percentage points 90 years earlier possibly because credit arrangements may have become easier. Education variables at the later date replace 'literacy' in 2000 and so are not directly comparable, but college education increases entrepreneurial chances. Changes in technology boost the attractiveness of the transport, communication and other utilities sector for self-employment. But perhaps organisational changes were responsible for the opposite effect in Personal, Entertainment and Recreation Services.

Table III collects the country of origin logit estimates at the two dates. The highest marginal effects in the relatively free immigration period were those from Syria and Lebanon, and Greece. Although migrants from Turkey were on average less likely to be self-employed than those from England, controlling for other influences, the positive marginal effect was higher. As noted above, a substantial proportion of these Middle Eastern immigrants were likely to be Greek or Armenian by language and religion. Migrants from Russia and Poland were less likely to be self-employed than those from the Netherlands, but again controlling for other influence the marginal coefficient was positive and substantial (a two percent effect). As indicated earlier these people from the Russian Empire will have been largely Jewish by religion.

#### TABLE III ABOUT HERE

Unlike Jews and Greeks, migrants from the Netherlands, the archetypal Protestant country, show no greater propensity for or against self-employment as measured by the marginal effect. However the average propensity for self-employment was high and it may therefore be that the estimate of the Protestant Ethic impact is muted by factoring out education and wealth effects which themselves could be influenced by the Ethic. Similar remarks apply to English migrants, judged by percentage of self employed, but the marginal effect is significantly negative, in accordance with Wiener's (1981) prediction. In 1910 the Scots are more entrepreneurial than the English according to the

logit coefficients, consistent with their disproportionate representation in the British business and other elite (Foreman-Peck and Smith 2004). However the coefficients are not significantly different.

Some Catholic countries in the sample yield a surprise for Weber's thesis. First Mexican migrants outside agriculture were rather few in 1910 which may account for the statistically insignificant marginal effect. But the lowest proportion of self-employment of the sample is consistent with Weber's thesis. Ireland in 1910 (despite including some Protestants in the group) has a strongly negative marginal effect and a low proportion. Insofar as Italy could be said to have a Roman Catholic culture, Italian migrants apparently contradict the Protestant Ethic. The marginal effect is strongly positive, (even though the average proportion of self-employed is slightly less than Ireland's). Cuba also becomes significantly entrepreneurial by 2000 (the absence of significant entrepreneurial effect in the earlier year may be due to the small sample).

As the only group discriminated against by US immigration legislation in 1910, more than half (52.6 percent) of the Chinese sample had been in the country for 20 years or more, yet almost half (49.1 percent) could not speak English. A high proportion of the sample was self-employed (11.25 percent) but part of this can be accounted for by age and residence, in turn a consequence of the 1882 Act. Controlling for these factors the marginal effect of country of origin is positive and significant (one percent level) and adds 2.5 percentage points to entrepreneurship chances, rather more than the predominantly Jewish immigrants from the Russian Empire and Poland. Despite the high proportion of non-English speakers there was no significant effect on entrepreneurship of being both Chinese and English speaking. Entrepreneurship was apparently therefore not a response to inability to speak English, and presumably therefore to integrate. But the costs of becoming an entrepreneur might be lower with a larger number of Chinese speakers in a captive labour market, and therefore with lower wages, because of their linguistic deficiencies or discrimination.

Japanese migrants were not subject to US legal discrimination, although at times emigration from Japan was controlled or prohibited. The proportion of self-employed was the second lowest in the sample (whereas China's was the third highest) and the marginal effect was not significantly different from zero.

### *Persistence of Entrepreneurial Culture*

A major interest is in the persistence of these entrepreneurial effects which is assessed by considering a similar specification ninety years later. A statistical test of persistence shows that strictly only Cuba, Italy, England, and the Netherlands have similar entrepreneurial coefficients over time<sup>11</sup>. Scotland is stable only at the 10 percent significance level. Among other things, this means that Ireland and Wales improved entrepreneurial cultures relative to England. By the end of the century Wales and England had apparently acquired similar entrepreneurial cultures<sup>12</sup>. The Scots moved in the opposite direction, becoming significantly less entrepreneurial and the Irish, like the Welsh, were significantly more prone to self-employment in the US. This is a remarkable shift over the twentieth century; with Scotland most acutely losing primacy, not significantly different from England in 1910, perhaps directing entrepreneurship into politics, and England falling to third place out of the four.

The 'Catholic' entrepreneurial countries, Italy and Cuba, display stability in different ways; the proportion of self-employed is stable in Cuba and the marginal effect is stable in Italy (comparing Tables III and I). Marginal effects do not change over the century in the 'Protestant' countries of England and Netherlands, apparently relatively lacking in entrepreneurship.

Greece and the Middle East continue to dominate the positive entrepreneurial effects, although with smaller coefficients and proportions than in 1910. Second generation immigrant Greeks were close behind the equivalent Jews in income and above in

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<sup>11</sup> The two samples are 'stacked' and the variables for each year multiplied by the appropriate year dummy in a single equation estimate to allow the significance of difference between pairs of coefficients to be tested.

<sup>12</sup> The relevant percentages in Table 1 are not significantly different according to a two-sample t test with equal variances.

education, according to the US censuses of 1960 and 1970. Both migrant groups improved their economic status relative to those born in the United States (Moskos 1989 111).

Comparing migrants from Russia and Poland in 2000 with those in 1910 is probably less appropriate than using Israel for the recent benchmark. The marginal effects turn out similar. As expected if the Jewish element was diluted in the 1910 Russian and Polish numbers, the average entrepreneurial proportion is smaller than that for Israel in 2000.

Judged by the marginal effects in 2000, both Japan- and China-originating migrants changed their entrepreneurial cultures over the twentieth century. After 90 years of rapid economic growth and a variety of immigration legislation, there is a significant and positive effect on entrepreneurship of the interaction between English speaking and Chinese origin (not reported in the table). At 1.3 percentage points this more than offsets the 0.8 percentage point negative impact of Chinese origin per se (not shown in accompanying table). The pure English-speaking effect is 0.4 percentage points. A person born in China who did not speak English was 1.2 percentage points less likely to be entrepreneurial than the sample average, whereas one from China who did speak English had about 0.9 percentage point greater chance of entrepreneurship. With no interaction term for Japanese origin, the negative Japanese effect is exactly equal and opposite to the impact of English-speaking. The substantial ‘linguistic distance’ between China and Japan on the one hand and the US on the other, then may account for the apparent cultural change over 90 years. Taking into account language skills, Chinese entrepreneurialism persists, as does Japanese indifference to self-employment.

## **5. Conclusion**

In accordance with one aspect of the ‘cultural critique’, the English were persistently prone to less entrepreneurship than US immigrant groups in the present sample, once controls for other entrepreneurship influences are included. The Dutch were consistently about averagely entrepreneurial, not as precocious as might be expected if a predominant

Protestant religious culture encouraged entrepreneurship. In view of the levels of GDP per head attained in 1910 and in 2000, another conclusion must be that entrepreneurial culture was not a fundamental determinant of economic performance. For England was the wealthiest immigrant origin country considered in 1910 and the Netherlands was the runner-up.

Comparison of marginal self-employment propensities of immigrant groups between 1910 and 2000 suggests a number of stable cultural influences. Jews and those from Greece, Turkey and the Middle East were generally more entrepreneurial (defined as being both self-employed and employing other people) over 90 years than other groups. This finding is consistent with the business precocity of Jews and Greeks in 19th century Britain. But again entrepreneurial culture fades into insignificance for economic development when the low Greek GDP per head in 1910 is compared with, for instance, the greater average income per capita of Italy.

Apparently less in harmony with historiography is the evidence for Catholic cultures. On the basis of the nineteenth century, we should look for a 'Catholic ethic' in northern Europe that diverts attention from economic advance. But whereas the Mexican result matches this conclusion, the US evidence indicates that Irish culture apparently changed over the twentieth century, while Italians and Cubans were abnormally entrepreneurial at both reference dates. This last accords with stable Italian and Cuban cultures independent of, or inconsistent with, supposedly anti-entrepreneurial Catholicism.

The Japanese along with the Chinese became less willing to start businesses, perhaps because of the filter of immigration legislation. The Chinese in 1910 were unusually entrepreneurial, probably a consequence of the unique legislative constraints on Chinese migration and naturalization. Language effects may have been particularly important for these two groups and measuring the impact of their cultures on their entrepreneurship propensities. Japanese higher incomes in 1910 and 2000 and lower entrepreneurial index once more confirms the small importance of entrepreneurial culture for economic growth.

That English culture was as 'deficient' in entrepreneurship in 2000 as it was in 1910 and the Dutch also showed no change; is perhaps a contradiction with the Protestant Ethic. Alternatively the desire to become an employer, rather than a wage worker, might be interpreted as Weber's 'Adventurer's Capitalism', not a reflection of the Protestant Ethic. Consider for instance Samuel Zemurray, a Jewish Russian-born entrepreneur in New Orleans, who established the Hubbard-Zemurray Fruit Company in 1910 with plantations in Honduras. Zemurray financed and organised a successful military coup against the Honduran president Miguel Davila in order to obtain tax concessions and grants from his replacement (Bucheli 2005 48). Had Zemurray stayed in Russia, he was unlikely to have found comparable opportunities for his entrepreneurial talents, and in the US, business was an obvious occupation for an immigrant. But Zemurray does not show the 'greater economic rationality' of the 'Protestant tradition'.

'Protestant tradition' countries perhaps were less keen on self-employment and on entrepreneurship than on social and political organisation. The conclusion that the English in the twentieth century did not have an entrepreneurial culture by comparison with other countries providing immigrants to the US could be entirely consistent with a strong English entrepreneurial performance in England. All that is required is that other English conditions - organisations and institutions - for beneficial business entrepreneurship were very favourable, as the GDP figures in fact indicate. Conversely, an entrepreneurial culture without such conditions could be positively harmful for economic development, by failing to channel entrepreneurial energies appropriately.

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**Table I : US Immigrant Entrepreneurship Percentages**

Migrants' Predominant Religion/Culture	Country of Birth	Percentages	
		1910	2000
Protestantism	England	5.80%	4.04%
	Scotland	5.65%	3.32%
	Wales	3.43%	4.39%
	Netherland	6.75%	5.34%
Catholicism	Ireland	3.97%	5.11%
	Italy	3.60%	7.82%
	Mexico	1.73%	1.61%
	Cuba	6.02%	5.75%
Confucianism (?)	China	11.57%	4.77%
	Japan	2.99%	3.49%
?Greek ?Armenian ?Orthodox ?Muslim	Syria and Lebanon	-	9.45%
	Greece	7.89%	12.02%
	Turkey	5.62%	6.27%
?Jewish	Israel	-	10.72%
	Russia and Poland	6.14%	4.33%
Total All Immigrant Sample		5.36%	3.38%

Note : Calculated from IPUMSusa 5 percent sample

**Table II: US Immigrant Entrepreneurship Model: Controls**

(Logit Marginal Effects of Control Variables)

<b>Variable</b>	<b>Year</b>	<b>Marginal Effect</b>	<b>Std Error</b>	<b>z</b>
Gender (male = 1)	1910	0.0145	0.0017	8.56
	2000	0.0152	0.0004	39.99
Marital Status (married = 1)	1910	0.0164	0.0016	10.01
	2000	0.0067	0.0004	16.18
6~10 years in US	1910	0.0087	0.0028	3.06
	2000	0.0058	0.0009	6.49
11~15 years in US	1910	0.0165	0.0041	4.04
	2000	0.0097	0.0010	9.81
16~20 years in US	1910	0.0120	0.0035	3.44
	2000	0.0111	0.0011	10.28
21+ years in US	1910	0.0145	0.0033	4.46
	2000	0.0079	0.0008	9.53
Naturalization	1910	0.0150	0.0021	7.03
	2000	0.0025	0.0004	5.85
Literacy (literate = 1)	1910	0.0112	0.0016	7.08
Grade 1~12	2000	-0.0004	0.0010	-0.46
1 to 3 years of college	2000	0.0024	0.0011	2.16
4+ years of college	2000	0.0046	0.0012	3.98
English Speaking	1910	0.0130	0.0017	7.79
	2000	0.0049	0.0007	7.03
Transportation, Communication, and Other Utilities	1910	-0.0102	0.0019	-5.50
	2000	0.0010	0.0009	1.16
Wholesale and Retail Trade	1910	0.0899	0.0052	17.17
	2000	0.0167	0.0007	25.05
Finance, Insurance, Real Estate, Business and Repair Services	1910	0.0360	0.0070	5.12
	2000	0.0143	0.0008	17.76
Personal, Entertainment and Recreation Services	1910	0.0437	0.0043	10.27
	2000	-0.0020	0.0005	-3.58
Age	1910	0.0023	0.0003	8.19
	2000	0.0020	0.0001	24.38
Age Squared	1910	-1.9E-05	0.0000	-6.31
	2000	-1.6E-05	0.0000	-19.66
Own Property	1910	0.0190	0.0019	10.12
	2000	0.0108	0.0004	24.74
Country of Origin variables in Table III				
<b>Properties of Regressions</b>	<b>Year</b>	<b>Pseudo R<sup>2</sup></b>	<b>Number of Obs.</b>	
	1910	0.2478	34,035	
	2000	0.1091	453,198	

**Table III: US Immigrant Entrepreneurship Model: Culture**

(Logit Marginal Effects of Country of Origin Variables)

<b>Migrants' Predominant Religion/Culture</b>	<b>Country of Birth</b>	<b>Year</b>	<b>Marginal Effect</b>	<b>Std Error</b>
Protestantism	England	1910	-0.0055	0.0017
		2000	-0.0040	0.0009
	Scotland	1910	-0.0038	0.0026
		2000	-0.0081	0.0015
	Wales	1910	-0.0139	0.0027
		2000	-0.0018	0.0014
	Netherland	1910	-0.0031	0.0043
		2000	-0.0003	0.0018
Catholicism	Ireland	1910	-0.0110	0.0015
		2000	0.0014	0.0016
	Italy	1910	0.0113	0.0028
		2000	0.0072	0.0012
	Mexico	1910	0.0020	0.0070
		2000	-0.0171	0.0009
	Cuba	1910	0.0214	0.0216
		2000	0.0030	0.0010
Confucianism (?)	China	1910	0.0309	0.0087
		2000	-0.0018	0.0007
	Japan	1910	0.0145	0.0093
		2000	-0.0035	0.0010
?Greek ?Armenian ?Orthodox ?Muslim	Syria and Lebanon	1910	-	-
		2000	0.0181	0.0022
	Greece	1910	0.1140	0.0202
		2000	0.0222	0.0021
	Turkey	1910	0.0520	0.0156
		2000	0.0105	0.0026
?Jewish	Israel	1910	-	-
		2000	0.0270	0.0029
	Russia and Poland	1910	0.0215	0.0030
		2000	0.0005	0.0009