

**THE STIGMA OF FAILURE:  
AN INTERNATIONAL COMPARISON OF FAILURE TOLERANCE  
AND SECOND CHANCING**

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## **Abstract**

It is commonly asserted that high rates of entrepreneurship and superior economic performance in the United States is linked to a higher cultural tolerance of business failure. After reviewing cross country patterns of entrepreneurship we develop in this paper a measure of cultural attitudes towards failure which has two components. We term these *failure tolerance* which captures attitudes towards the risk of a business failing and *second chancing* which measures the degree of agreement with the proposition that those who have failed should be given a second chance. Using a unique dataset on attitudes to failure for a sample of 9,500 individuals drawn from 19 economies for the year 2002 we show that respondents in the USA appear to have relatively high levels of failure tolerance. However, they are less willing to grant a second chance to those who have tried and failed. We find that having relatively high levels of failure tolerance is not positively correlated with GDP growth. Having a relatively positive attitude towards second chancing across countries is positively related to GDP growth. Taken together these results suggest there is a link between attitudes to failure and economic growth, but it is not the one conventionally assumed in current policy rhetoric which argues that relatively favourable attitudes towards second chancing in the USA explains its more entrepreneurial activity.

**JEL Codes:** L26, Z1

**Keywords:** Attitudes to failure, Entrepreneurship, Cross-country comparisons

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## 1. Introduction

It has become a commonplace amongst policy makers to blame cultural attitudes to failure for what are seen to be lower rates of entrepreneurial behaviour in Europe and elsewhere compared to the USA. It is in particular often claimed that there is a stigma attached to failure which inhibits individuals from taking the risks associated with starting new businesses, and from starting a second if the first has failed. Low start ups and a lower opportunity to learn from failure are claimed to be associated with lower rates of innovation and growth in those economies (e.g. European Commission 2000, Small and Medium Enterprise Agency 1999). The idea that there is a relatively higher stigma attached to business failure in the EU compared to the USA has led to comparisons of, and proposed changes to the legal framework surrounding corporate and personal insolvency and bankruptcy to align it with what are perceived to be more risk promoting legislation in the USA (e.g. European Commission 2002, DTI 2001).<sup>i</sup>

The idea that cultural factors per se may influence rates of entrepreneurship has generated a number of recent papers. Cultural constructs drawn from the work of Hofstede (1980 2001) and Inglehart (1997) have been used to attempt to predict proxies for entrepreneurship such as levels of self-employment or innovative activity. These studies include cultural traits such as uncertainty avoidance which might be expected to bear on attitudes to failure. (Shane 1993, Hunt and Levie 2003, Gianetti and Simonov 2003, Johansson 2004, Kreiser Marino and Weaver 2003, Hofstede et al 2002) These studies produce mixed results. Shane, for example finds low uncertainty avoidance to be associated with higher rates of innovation whilst Hunt and Levie find weak and inconsistent effects for cultural variables on cross country variations in self-employment using constructs drawn from Hofstede and Inglehart. These cultural factors are greatly outweighed by economic factors especially population growth. Hofstede et al., (2004) include cultural values in a cross country comparison of rates of entrepreneurship and find them dominated by levels of dissatisfaction with the status quo<sup>ii</sup>. Hayton George and Zahra (2002), and Licht and Siegel (2006) provide good reviews of the 'culture' literature, the latter provides a helpful review of methodological difficulties with some of the current literature. None of the literature reviewed is, however, concerned with establishing whether attitudes to failure themselves differ systematically across countries, or affect economic performance. More recently Eurobarometer survey data on attitudes to failure has been developed. Some of this appears to show a higher willingness to ignore the risks from start up in the USA but little variation between the EU and the USA on other attitudes (see e.g. Eurobarometer 2004). For instance on a scale of 0-100 the index of agreement

with the statement that failed entrepreneurs should be given a second chance was 74 for the EU and 73 for the USA (van Houdt 2002).

In this paper we use the Eurobarometer data on attitudes to failure for a sample of 9500 individuals drawn from 19 economies for the year 2002 to explore attitudes to failure in more detail. We distinguish between two aspects of attitudes to business failure. We term the first of these ‘failure tolerance’. It captures attitudes towards the risk of a business failing and its consequences for the reputation of those who fail. A high rate of failure acceptance means a greater willingness to accept the implications of failure. The other aspect we term ‘second chancing’ and it measures the degree of agreement with the proposition that those who have failed should be given a second chance. We analyse how these component parts of attitudes to failure vary by country. We also consider variations by individual respondent characteristics such as occupational group and gender and consider the impact that variations in these factors across our country samples might have on our country comparisons.

Our principle findings are that respondents in the USA appear to have relatively high levels of failure tolerance. However they are relatively less willing to grant a second chance to those who have tried and failed. We find that the attitude towards second chancing across countries is positively related to GDP growth whilst failure tolerance is not. Taken together these results suggest that there is a link between attitudes to failure and economic growth but it is not that conventionally assumed in current policy second chancing rhetoric. In particular the USA does not appear to be more willing to give those who have failed a second chance; the factor which is most relevant from the point of view of a positive correlation with growth of GDP. Our results are consistent with those policy changes associated with supporting a second chance such as legal reforms associated with insolvency and bankruptcy.

The next section of this paper provides a brief review of policy statements giving weight to the argument that growth is inhibited by cultural attitudes to failure. It then provides a review of evidence on rates of business ownership, and entrepreneurial activity across industrial countries. It also considers rates of business exit and entry across countries. The purpose of this section is to see what the long-run entrepreneurial traits across countries are to which cultural factors may be claimed to contribute. This discussion is followed by sections which provide in turn: a description of our data sources and the construction of our attitudinal variables: a cross-country analysis of attitudes to failure; an analysis of the impact of selected individual respondent characteristics on attitudes to failure; a correlation analysis of our attitudinal variables with various indices of business ownership, entrepreneurial activity and GDP

growth. A final section summarises our conclusions and ways of taking the research forward.

## **2. Culture, Entrepreneurship and Business Failure**

As the following quotations show the view that cultural attitudes to failure outside the USA have inhibited enterprise and economic performance relative to that country is widespread in the policy making community.

‘two of the factors behind the high start-up rate in the US are a cultural environment that allows people a second chance and bankruptcy legislation that puts rational limits on risk in the event of business failure’ (1999 White Paper on Small and Medium Sized Enterprises in Japan. Small and Medium Enterprise Agency. Tokyo, 1999)

‘Entrepreneurship is the key to the new economy. Enterprise Europe requires a revolution in our culture and attitudes towards entrepreneurship. Europe must re-examine its attitude to risk, reward and failure. Thus, enterprise policy must encourage policy initiatives that reward those who take risks. Europe is often reluctant to give another chance to entrepreneurs who failed. Enterprise policy will examine the conditions under which failure could acquire a less negative connotation and it could be acceptable to try again. It will encourage Member States to review bankruptcy legislation to encourage risk-taking.’

(Challenges for enterprise policy in the knowledge-driven economy European Commission COM (2000) 256 final/2 2000/0107 (CNS) Brussels, 11.5.2000 p. 3.)

‘Fear of failure can act as a powerful disincentive to potential entrepreneurs and the actual cost of failure can deter many whose first failure was honest from trying again. Therefore, the Government intends to legislate for a major package of reforms to personal bankruptcy, to modernise the framework and to encourage entrepreneurship and responsible risk taking, which will contribute to the creation of wealth and employment.’

(Productivity and Enterprise: Insolvency – A Second Chance. Cm 5234 July 2001 London, DTI)

Behind these views lies a perception that the recent superior growth performance of the USA relative to Japan and the European community lies in the superior entrepreneurial performance of that country. Entrepreneurial performance in turn is seen to reflect a culture of risk taking and learning from failure. Before turning to attitudes to failure per se it is worth examining the

extent to which the evidence supports the view that there are substantive long run differences between countries in entrepreneurial activity and business births and failures. A clear implication of the emphasis on cultural differences as a force affecting economic performance characteristics is that there should be discernible long -run patterns which reflect these deep rooted cultural attitudes. Is it in fact the case that the USA has persistent relatively high rates of business formation and failure relative to other countries, and is this reflected in higher rates of entrepreneurial business ownership and economic performance? There is some evidence bearing on each of these issues. None is without its shortcomings. We discuss each in turn and see if we can identify persistent indications of cross country differences in entrepreneurial start up.

One approach to measuring entrepreneurial business activity has been to estimate the degree of self employment across countries relative to the total labour force. This is not entirely satisfactory because it measures the stock of businesses rather than the flow into, and out of, business. It is also difficult to measure on a comparable basis across countries. This is because of variations across countries in the definition of self employment, including in particular the way in which business owners of incorporated smaller businesses are counted<sup>iii</sup>. Selected years from the results of the most recent attempt to harmonise the data (Van Stel 2003) are shown in Table 1.

**Table 1 Percentage Rates of Self-Employment/Business Ownership in 23 Countries in alternate years 1972-2002**

<b>Country</b>	<b>1972 %</b>	<b>1982 %</b>	<b>1992 %</b>	<b>2002 %</b>	<b>1972 Rank</b>	<b>2002 Rank</b>
<b>Greece</b>	16.1	18.6	20.2	19.3	1	1
<b>Italy</b>	14.3	15.8	17.9	18.3	2	2
<b>Australia</b>	12.6	16.1	16.9	16.4	3	3
<b>Japan</b>	12.5	12.9	11	9.2	4	14
<b>Spain</b>	11.8	10.8	12.9	12.9	5	5
<b>France</b>	11.3	10	9.6	8.1	6	18
<b>Portugal</b>	11.3	11.8	15	13.7	7	4
<b>Iceland</b>	11.1	8.6	11.7	12.3	8	7
<b>Luxembourg</b>	10.7	8.2	6.4	5.4	9	23
<b>New Zealand</b>	10.6	10.1	12.3	12.5	10	6
<b>Belgium</b>	10.5	9.9	11.4	11.3	11	9
<b>Netherlands</b>	10	8.1	8.9	10.8	12	11
<b>Norway</b>	9.7	8.6	7.8	6.5	13	22
<b>Austria</b>	9.3	6.5	6.9	8.3	14	16
<b>Denmark</b>	8.2	7	5.8	6.7	15	21
<b>United States</b>	8	9.9	10.3	9.5	16	13
<b>Canada</b>	7.9	9	10.9	12.2	17	8
<b>United Kingdom</b>	7.8	8.2	10.5	10.7	18	12
<b>Ireland</b>	7.7	8.3	11.1	11.2	19	10
<b>Germany</b>	7.6	6.6	7.3	8.6	20	15
<b>Sweden</b>	7.4	7.4	7.2	8.2	21	17
<b>Finland</b>	6.6	6.2	7.5	7.9	22	19
<b>Switzerland</b>	6.6	6.6	7	7.6	23	20

Source: Derived from Van Stel (2003)

Table 1 reports rates of self-employment/business ownership in the non-agricultural private business sector for 23 OECD countries from 1972-2002<sup>iv</sup>. The data is ordered so that the country with the highest rate in 1972 is in the first row. The final two columns of the table give the rankings in 1972 and 2002 respectively. There are a few notable shifts in rank over the period. Japan declines from fourth to fourteenth in rank mainly due to a decline in rates in the 1990s. Similarly France falls from sixth to sixteenth again due mainly to changes in the nineties. Canada, Ireland and the UK exhibit upward mobility, with rates rising steadily over the period. Over the period as a whole the USA experienced a rise from sixteenth to thirteenth but its rates were lower than those of the UK, the Netherlands, Belgium, Ireland, Spain, Portugal, Italy and Greece. It should be noted, however, that most of the rates are packed quite closely together in the middle ranges so that shifts in ranks can occur with quite

small shifts in actual ownership rates. Over the thirty year period covered by the data there is notable stability at the two extremes and very few countries ranked below twelfth rise above twelfth by the end and vice versa for falls. More formally an analysis of variance shows that the proportion of the variance in rates explained by country is far greater and more statistically significant ( $\eta^2 = .7588$ , d.f.=22,  $p < .05$ ) than is explained by years ( $\eta^2 = .0007$ , d.f.=15, n.s.). If we consider changes in self-employment rates, rather than levels, then, as we might expect given the cyclical nature of self-employment, there are both country and time effects (years  $\eta^2 = .0169$ , d.f.=13,  $p < .05$ , country,  $\eta^2 = .0107$ , d.f.=13,  $p < .05$ ) although the values of  $\eta^2$  for the country effects are significantly lower than in the analysis of levels. Taken as a whole, the evidence suggests that there is a fairly consistent pattern over time of self-employment/business ownership across countries. This is consistent with, but does not necessarily mean that longer run cultural forces are at work. It is noticeable, however, that the USA ranks relatively low on this measure of entrepreneurial activity.

An alternative approach to measuring entrepreneurial activity has been developed by the Global Entrepreneurship Monitor (GEM) group of researchers. Instead of deriving measures from official statistics they use surveys of individuals to assess entrepreneurial activity. The basic metric they have developed is called Total Entrepreneurial Activity (TEA). It is based on the sum of two components both derived from representative surveys of individuals. The first component is those who have taken some action to create a new business in the past year, expect to share ownership in the new activity and where (if formed) the business has been paying salaries for less than three months. This is termed nascent entrepreneurship. To this are added individuals who run new businesses which are less than three and half years old at the time of the survey. The sum of these two is divided by total population to derive the TEA index. This measure has the virtue of relating to potential and actual start ups and is therefore a more appropriate measure of the flow of new entrepreneurial businesses. However, this index, which includes individuals who are taking actions which may be some way from business formation such as exploring market opportunities or preparing a business plan, may be subject to substantial year to year variability since such 'potential' may be susceptible to short run macro-economic fluctuations. This is confirmed by Table 2 and Chart 1 (which confines itself to countries in Table 2 for which TEA is available for a run of at least four successive years).

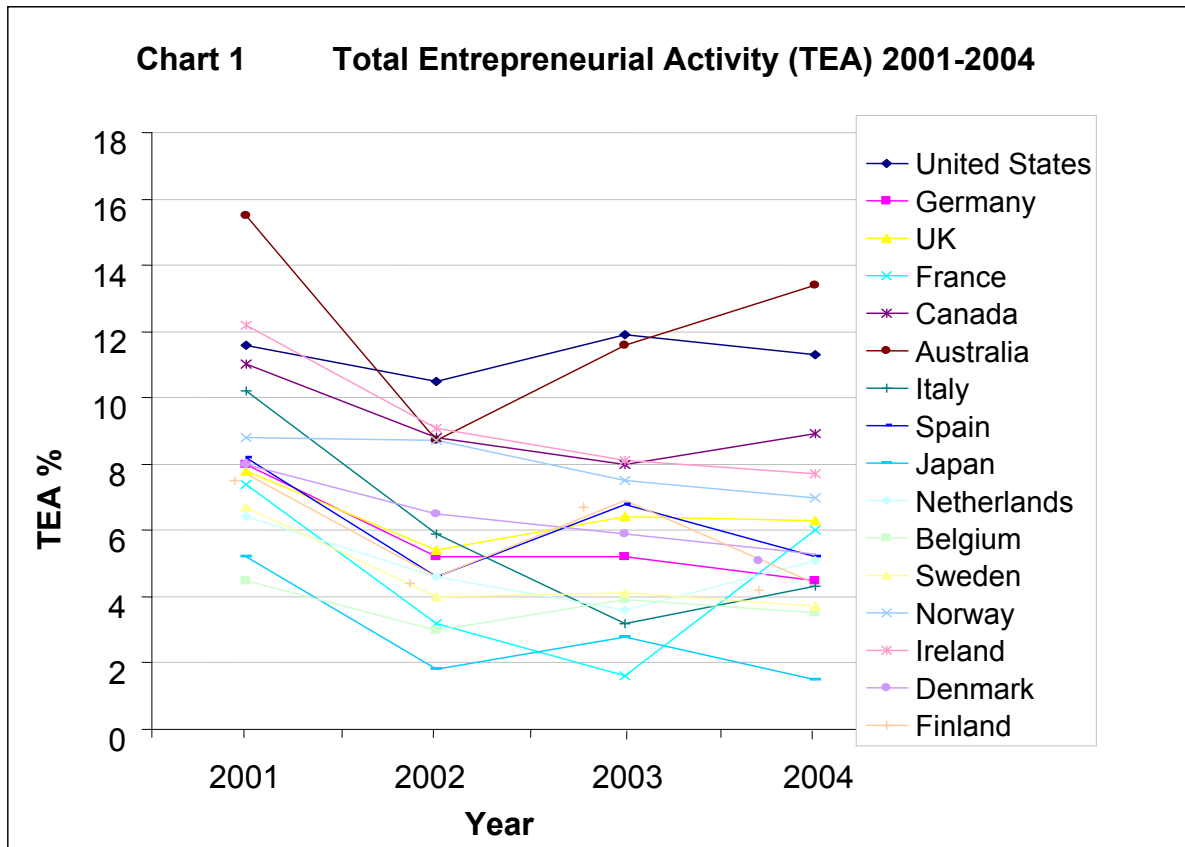


**Table 2 Total Entrepreneurial Activity: Selected OECD Countries 2000-2004**

<b>COUNTRY</b>	<b>2000</b> %	<b>2001</b> %	<b>2002</b> %	<b>2003</b> %	<b>2004</b> %	<b>2000-2004</b> <b>Average</b>
<b>United States</b>	16.6	11.6	10.5	11.9	11.3	12.4
<b>Germany</b>	7.5	8.0	5.2	5.2	4.5	6.1
<b>UK</b>	6.9	7.8	5.4	6.4	6.3	6.6
<b>France</b>	5.6	7.4	3.2	1.6	6.0	4.8
<b>Canada</b>	12.2	11.0	8.8	8.0	8.9	9.8
<b>Australia</b>	15.2	15.5	8.7	11.6	13.4	2.9
<b>Italy</b>	7.3	10.2	5.9	3.2	4.3	6.2
<b>Spain</b>	6.9	8.2	4.6	6.8	5.2	6.3
<b>Portugal</b>	N/A	7.1	N/A	N/A	4.0	5.6
<b>Japan</b>	6.4	5.2	1.8	2.8	1.5	3.5
<b>Netherlands</b>	Na	6.4	4.6	3.6	5.1	4.9
<b>Belgium</b>	4.8	4.5	3.0	3.9	3.5	3.9
<b>Sweden</b>	6.7	6.7	4.0	4.1	3.7	5.0
<b>Norway</b>	11.9	8.8	8.7	7.5	7.0	8.8
<b>Ireland</b>	N/A	12.2	9.1	8.1	7.7	9.3
<b>Denmark</b>	7.2	8.0	6.5	5.9	5.3	6.6
<b>Finland</b>	8.1	7.7	4.6	6.9	4.4	6.3

Source: Derived from GEM (2005)

Table 2 and Chart 1 reveal that there is variation across both time and country. For example between 2001 and 2002 there was a general fall in TEA. This was extreme in some cases. In Australia TEA fell from 15.5% to 8.7%. Italy and Spain also show big falls. An analysis of variance for the period 2000-2004 reveals a substantial proportion of the variance in TEA is accounted for by country ( $\eta^2 = .722$ ,  $p < .05$ ) and a smaller but still significant amount is accounted for by year ( $\eta^2 = .170$ ,  $p < .05$ ). Australia and the USA appear as the most entrepreneurial countries by a substantial margin on the basis of average TEA, but the latter has a much more stable performance. Japan is the least entrepreneurial on this basis and has been declining over the period. Most of the other countries are quite closely bunched. For instance for 6 countries the average TEA over the period 2001-4 lies between 6.0 and 6.6.



Source Derived from GEM (2005)

Unfortunately this data does not have a long enough run of data to establish longer term differences across countries. Moreover it appears to weight intentions very heavily compared to actual business creation. The TEA index is calculated by dividing the grossed up numbers of individuals who are nascent or actual new business starters by total population. The index implies very large numbers of individuals are running new businesses, or are in the process of setting up new businesses in most of the countries. In the USA the TEA value for 2004 implies that 20.7 million were so engaged GEM 2005 Table 1 p.17). This may be compared to the estimated stock of US self-employed business owners in 2000 which was 14.2 million<sup>v</sup> (Van Stel 2003). In the UK the estimated numbers of those engaged in entrepreneurial activity based on TEA is 2.3 million compared to the estimated business stock of 4.1 million (of which 3.1 million had no employees (SBS 2005)). These discrepancies suggest that there is an enormous gap between thinking about starting a business and actually doing it, especially in the USA. This seems to be borne out by the results of a separate series of surveys of entrepreneurial activity carried out for the European Commission. These show much higher rates of thinking about starting in the USA than Europe but very small differences in actual rates of

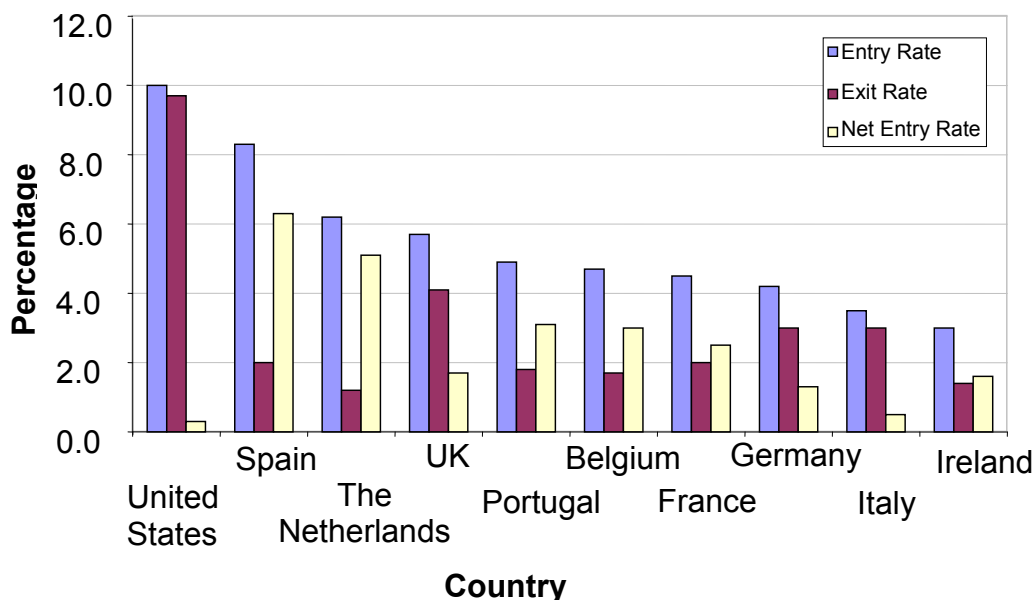
starting or buying a business. Thus in 2004 28% of US respondents said they were thinking about starting business but only 15% of EU respondents claimed to be. The respective proportions for actually taking steps to start a business were 8% in the USA and 3% in the EU, and for actually having started a business in the last three years were 4% and 2% respectively. Perhaps more striking is the fact that whereas 5% of European respondents reported they were still running a business they had started over three years ago this was true for only 3% of the US respondents. This pattern held for surveys in 2002 and 2003 (Eurobarometer 2004 p.26). This suggests higher business formation rates and higher failure rates in the USA with much greater instability at the small scale end of the business population.

A third approach to measuring entrepreneurial activity is to use estimations of actual entry rates based on analyses of business registers. This approach also yields comparable data on exits through insolvency closure or acquisitions, and on net entry as the difference between exit and entry. Extensive work on this basis has been carried out by the OECD, the World Bank and the European Commission. (OECD 2003, Cincera and Galgau 2005, Brandt 2004, Bartelsman, Haltiwanger and Scarpetta 2004).

Chart 2 provides entry, exit, and net entry data for ten OECD countries on this basis for the years 1997-2003. The countries are ordered from left to right in decreasing rank order in terms of rate of entry.<sup>vi</sup> The USA appears as clearly the most entrepreneurial country on this basis. This is consistent with its ranking on the basis of TEA. However there is no general correlation between the rankings on these two measures taking this sample of companies as a whole (Pearson  $\sigma = .466$ ,  $n=10$ , n.s., Kendalls  $\tau = .045$ ,  $n=10$ , n.s.)<sup>vii</sup>. The finding that the USA has higher entry rates than other advanced economies is confirmed by studies covering earlier periods and different country samples (OECD 2003 OECD 2003, Bartelsman, Haltiwanger and Scarpetta 2004). It appears to be a robust result even if the rankings by TEA and new entry do not reveal a consistent pattern more generally across countries.

This approach to measuring entry also yields consistent estimates of business exit. This includes insolvency and business closures and so gives an approximate estimate of failure rates. It is an estimate which is, however, subject to some restrictions in usefulness in that respect. This is because it can also include exit by acquisition, and takeover rates are typically higher in the UK and the USA than elsewhere.

**Chart 2 Entry, Exit and Net Entry of businesses into Manufacturing and Services in ten OECD countries (Averages 1997-2003)**



Source Brandt (2004)

Chart 2 reveals that exit rates are even higher in the USA compared to other countries than are entry rates. In the USA the exit rate is almost the same as the entry rate so that the USA has the smallest rate of net entry in the sample. The implications for differences in attitudes towards failure in the face of the persistence of differences in exit rates between the USA and other countries are discussed further below when we discuss our findings on attitudinal differences in relation to business failure.

This review of measures of entrepreneurial activity shows that business ownership rates are not especially high in the United States. There is, however, evidence that intentions to found new businesses are relatively high in the United States, but their rate of conversion into actual businesses seems relatively low. Notwithstanding that actual entry rates into industrial activity are higher in the USA than elsewhere. This is combined with internationally very high exit rates. It also appears that these relatively high entry and exit rates in the USA have persisted over at least two decades (OECD, 2003). We now turn to see if this may be related to differences in cultural attitudes to failure between the USA and other countries and in turn to overall economics performance in terms of GDP growth.

### 3. Data

The Eurobarometer survey number 134 conducted in November 2002 included representative samples of the European Union Member States as well as certain other European states and the USA. A stratified sample of approximately 500 persons from each nation was interviewed<sup>viii</sup>, regardless of its population (the data were weighted proportionate to the population of each country when the data were combined to create a European group).

#### 3.1 Variables

The 2002 Eurobarometer ‘Entrepreneurship’ study (number 134) contains four relevant attitudinal items concerning business failure. In the English version of the questionnaire, they are presented thus.

3. Do you strongly agree, agree, disagree or strongly disagree with the following opinion?
  - d. People who have started their own business and have failed should be given a second chance.
  - e. I would be less inclined to order goods from someone who has already failed in business.
  - f. I would never invest money in a business managed by somebody who has already failed in the past.
  - g. One should not start a business if there is a risk it might fail.

Respondents were asked to respond on a four-point scale from *strongly agree* to *strongly disagree*.

The survey also contains information about the region of habitation, population size of the locality, gender, age, occupation of respondents from nineteen different countries. Whether or not a respondent has ever started a business was also asked. Occupational group was also used in the analysis, because this gives an indication of the likely potential of a new business growing; less skilled manual workers who start their own business are more likely to remain as sole traders, whereas higher skilled occupations are more likely to start businesses with potential for growth.

For the purposes of the study we are interested principally in the general attitudes elicited by the four statements and especially their relation to a person’s country of residence.

### **3.2 Modification of the attitudinal variables**

In this study, we treat as interval the variables whose values accord with responses to the four referred-to statements of questionnaire item 3, as follows:

- 1 =agree strongly
- 2 =agree
- 3=disagree
- 4=strongly disagree

To reduce the accumulation of missing cases, particularly in the factor composed of responses to statements e, f and g, *Don't Know* responses and non-responses have been given the value 2.5. In order to conduct valid parametric tests on these four variables, their distributions must be approximately Gaussian. Of the responses to statement d, the few strongly disagree responses were outliers. Those responses have been assigned the same value (3) as the disagree responses.

Exploratory factor analysis was used as an indication of the similarity of the attitudes addressed by the four statements. Two factors emerged from this process, the first one representing e, f and g, the second representing just d.. These factors are summarised in Table 3. Variables e, f and g were found to be moderately correlated with each other (Pearson's  $r$  between .17 and .35,  $d f = 9508$ ,  $p < .0005$ ). Each correlated much less strongly, though still significantly, with variable d ( $r$  between -.04 and -.12,  $d f = 9508$ ,  $p < .0005$ ). For simplicity, variable d, alone, forms the first of our two new attitudinal variables (hereafter referred to as "second chancing") and the mean of the values of variables e, f and g for each respondent are the values of the second attitudinal variable. This second attitudinal variable, referred to as failure tolerance (the inverse of failure aversion), is virtually identical to the variable produced by a combination of their standardised forms (Pearson's  $r = .995$ ,  $d f = 9508$ ,  $p < .0005$ ).

**Table 3 Correlations between the components of the principal dependent variables and the dependent variable failure tolerance**

<b>N=9509, all sig at p&lt;0.0005</b>	<b>Give second chance to failed</b>	<b>Inclined to order goods from failed</b>	<b>Would never invest in failed</b>	<b>Should not start if risk of failure</b>	<b>Mean of responses to e, f and g</b>
<b>Give second chance to failed</b>	1	-.122	-.085	-.037	-.112
<b>Inclined to order goods from failed</b>	-.122	1	.349	.168	.689
<b>Would never invest in failed</b>	-.085	.349	1	.253	.751
<b>Should not start if risk of failure</b>	-.037	.168	.253	1	.690
<b>Mean of responses to e, f and g (failure tolerance)</b>	-.112	.689	.751	.690	1

To simplify matters, the values of variable d are reversed to form the first attitudinal variable, second chancing, so that high values have a similar meaning to high values of failure tolerance: an attitude that we would think of as encouraging entrepreneurship.

Whatever the precise nature of the distinction between the two attitudinal variables, second chancing (variable d) and failure tolerance (variables e, f and g evenly combined), we can be satisfied about their general meaning and that they have independent utility in this study, given the weak correlation between them at an individual respondent level (Pearson's  $r = .12$ ). Nor is there any significant correlation of the two attitudinal variables (second chancing and failure tolerance) at the national level (Spearman's  $\rho = 0.009$ ,  $N=19$ ,  $p=0.86$ ).

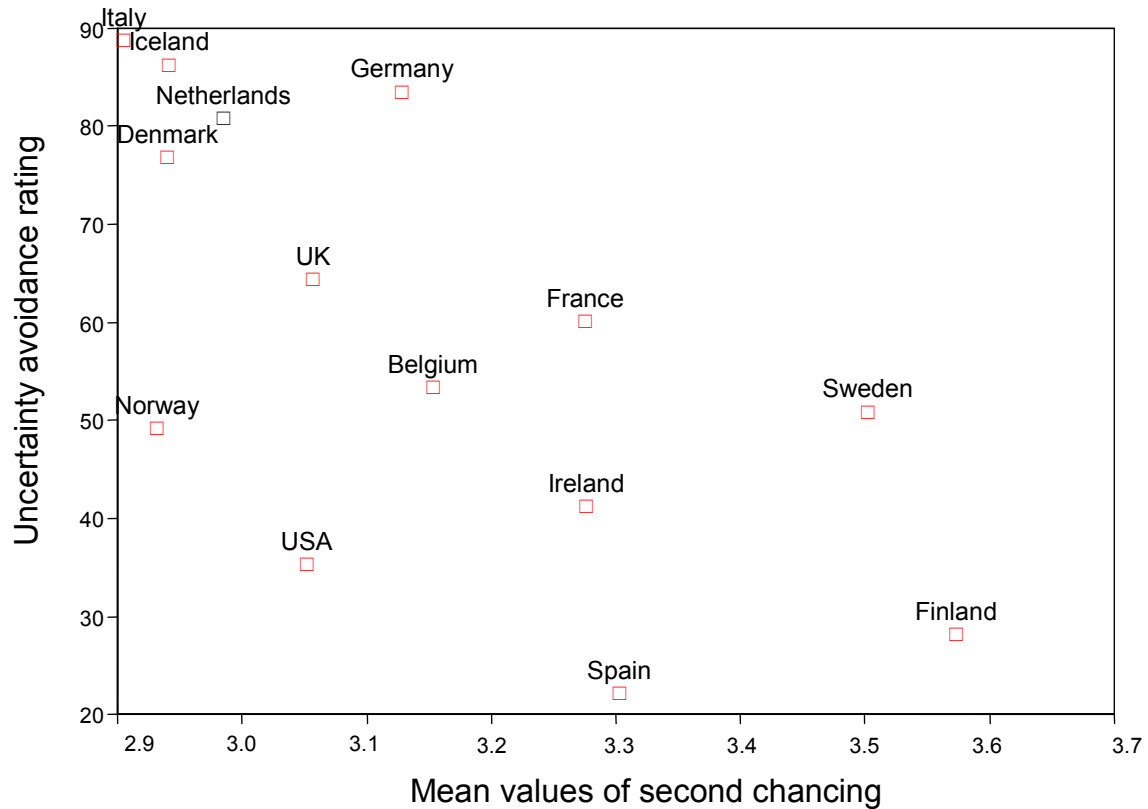
#### **4. National attitudes to Failure and Hofstede's Index of Uncertainty Avoidance**

As a check on the extent to which our two attitudinal variables were consistent with wider cultural attitudes to risk and uncertainty we compared them with Hofstede's well known uncertainty avoidance construct. Hofstede's uncertainty avoidance cultural construct has the following definition: 'Uncertainty avoidance: the extent to which people feel threatened by uncertainty, i.e. unquantifiable hazards, and try to avoid such situations' (Hofstede 2001 and 1991, Hofstede and Bond 1998). Hofstede's construct has its origin in surveys conducted on IBM employees in 1968 and 1972. He makes it clear that uncertainty is not to be identified with risk in the Knightian sense where possible outcomes can be represented by well defined probability distributions. His measure is concerned with outcomes where the properties of the distribution of outcomes are not known or even unknowable. We might expect a negative correlation between this construct and our second chancing and failure tolerance. As Chart 3 suggests nations in which people in general tend to be more willing to grant a second chance are indeed those with a low uncertainty avoidance rating. (Spearman's  $Rho = -.59$ ,  $N = 14$ ,  $p = .025$ ). Failure tolerance has a weaker (and non-significant) relation to uncertainty avoidance, between nations (Spearman's  $Rho = -.31$ ,  $N = 14$ ,  $p = .28$ ).

Thus it does seem as if there is some overlap between our two specific attitudinal items relating to business failure and Hofstede's more general cultural dimension of uncertainty avoidance, although they are clearly not synonymous.



**Chart 3 Significant negative correlation of mean values of second chancing (2002) and uncertainty avoidance for fourteen nations**



### 5. Between nations comparisons of attitudes to failure

In Charts 4 and 5 we show the cross country pattern of our two attitudinal variables. Chart 4 reveals that Finland and Sweden have the highest willingness to grant a second chance followed by Ireland Greece and Spain. The other countries are more similar to each other. In Chart 5 the countries are more closely bunched with the USA and Ireland leading the way. On this basis we might conclude that in terms of attitudes to failure Ireland was the most propitious place to start a business. An analysis of variance showed that country was significantly related to second chancing (One-way analysis of variance  $F=54$ ,  $df=18$ ,  $9490$ ,  $p < .0005$ ) and to failure tolerance (One-way analysis of variance,  $F=45$ ,  $df=18$ ,  $9490$ ,  $p < .0005$ ). The differences between the US and all the European countries considered together were also highly significant, though not very great. Respondents in the US had a **greater** tendency to disagree with the statement *people who have started their own business and*

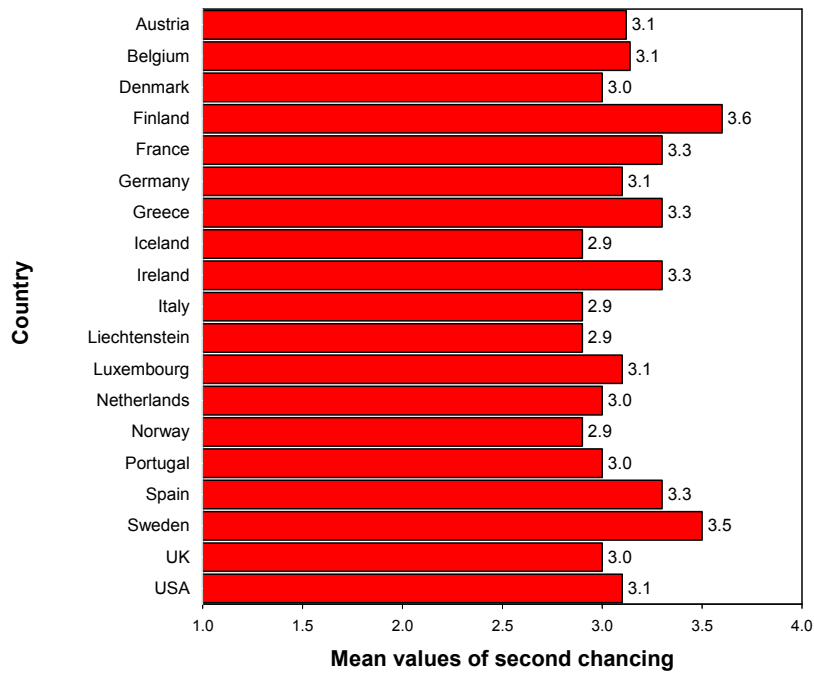
*have failed should be given a second chance* than did respondents in Europe ( $t = 2.5$ ,  $df = 573.0$ ,  $p = .001$ ,  $r^2 = .001$ ). This result is the opposite of what might be expected on the basis of the argument linking higher entrepreneurship in that country to a more tolerant attitude to failure.

The difference in mean values of failure tolerance does, however, indicate a greater tolerance of business failure in the US than in Europe ( $t = 7.5$ ,  $df = 583.7$ ,  $p < .0005$ ,  $r^2 = .004$ ). T-tests for the three components of failure tolerance show that the US Europe difference is strongly driven by the component capturing attitudes to starting a business if there is a risk it may fail ( $t = 10.7$ ,  $df = 587.1$ ,  $p < .0005$ ,  $r^2 = .008$ ). The other components are individually less significantly different.

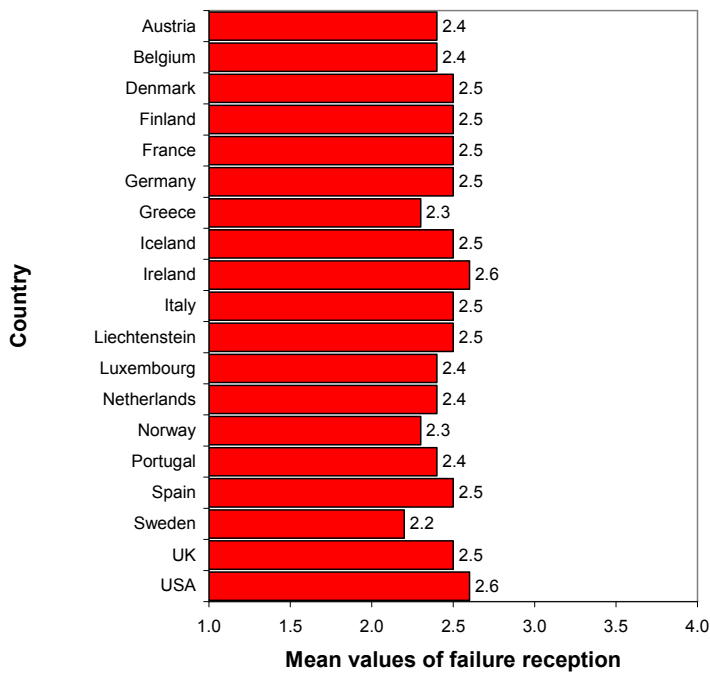
Comparison of the US with the two other Anglophone nations (the United Kingdom and Ireland) showed significant differences between their mean values of second chancing and failure tolerance, less than the differences between US and continental Europe. (second chancing:  $t = 3.1$ ,  $df = 991.9$ ,  $p = .002$ ,  $r^2 = .006$ ; failure tolerance:  $t = 2.8$ ,  $df = 1498$ ,  $p = .005$ ,  $r^2 = .005$ ). Thus these countries tend to be more like the USA than other European countries on these measures<sup>ix</sup>.

Taken as a whole these results suggest that the willingness in the USA to take the risk of starting a business is **despite** and not because of attitudes towards granting a second chance in that country.

**Chart 4 Mean values of second chancing by country**



**Chart 5 Mean values of failure tolerance by country**



## **6. Other factors affecting Attitudes to Failure: Urban/Rural; Gender, Age; educational Profile; Self-Employment Desire; Occupation and Previous experience of failure**

Inhabitants of towns and cities, rather than rural areas, were slightly more positive to giving second chances than inhabitants of rural areas. Otherwise, there were no statistically significant correlates of second chancing with demographic variables.

The following characteristics, besides country, were associated with positive attitudes toward failure, based on differences in mean values of failure tolerance.

- 1 Inhabitation of towns and cities
- 2 Sex male
- 3 Age young
- 4 Highly educated
- 5 Preference for self-employment over being an employee
- 6 Having previously started a business
- 7 Having failed in business or given up a business
- 8 Professional or managerial occupations

Some of these factors were distributed differently across nations. To ensure that the national differences were not spurious, multivariate analysis of variance models were computed. This had little effect on the previously reported differences between countries. (Second chancing: two-way analysis of variance,  $F = 12.0$ ,  $df = 1$ , 9505,  $p = .001$ ; failure tolerance: nine-way analysis of variance,  $F = 19.0$ ,  $df = 1$ , 7641,  $p < .0005$ .)

The attitudes of people in professional or managerial occupations, and in particular people who are self-employed in these occupations, might be particularly important. Firstly, businesses started by the more highly skilled professions are more likely to grow. Secondly, a recurrent finding in the sociology of occupations is that people are much more likely to mix socially with others at a similar level in the occupational hierarchy to themselves. Therefore it is more likely to be the sympathy or stigma of others in these occupations that might influence their entrepreneurial behaviour, rather than the attitudes in society at large. In order to test for this, the attitudes of just those occupations were analysed for country differences, and also interactions of occupation and nation on attitudes were explored. No evidence was found of differential country differences amongst those occupations.

## **7. Attitudes to failure and past experience of starting a business**

In the Eurobarometer 2002 survey, people were asked about their experiences of starting their own businesses. They were asked to choose one only of a set of responses to the following question:

‘Have you started a business recently or are you taking steps to start one?’

The set of possible responses was:

- It never came to your mind
- You are thinking about it
- You thought about it or had already taken steps to start a business but gave up
- You are currently taking steps to start a new business
- In the last three years, you’ve started or taken over a business that is still active
- You started or took over a business more than three years ago and it’s still active
- You once started a business, but currently you are no longer an entrepreneur (business has failed, business was sold or the interviewee has retired)
- Don’t know or not applicable

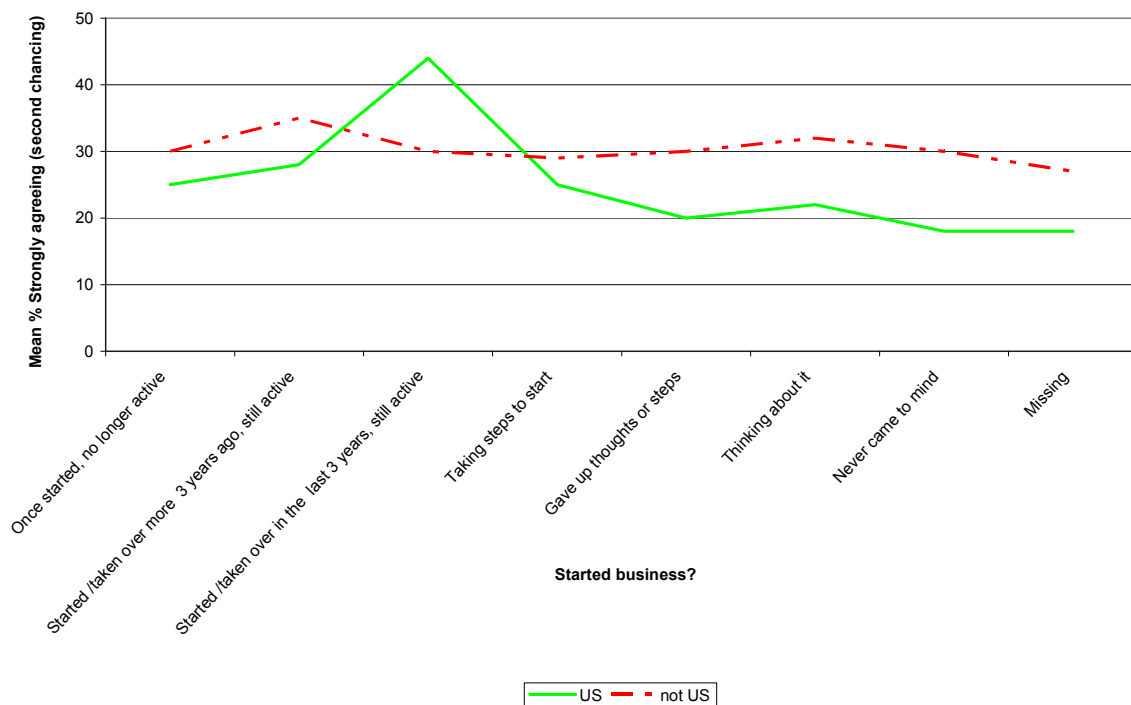
As table 4 shows, in the U S, a lower proportion of respondents have never thought about starting a business and much greater proportions claim to be taking steps to start a business or to be thinking about starting one, than in Europe. However, this does not appear to translate into significant differences in actually setting up a business. In this dataset, actual rates of running an enterprise and having given up running an enterprise are similar in Europe and the US, with a slightly greater proportion of US respondents having only reached the setting-up phase.

**Table 4 Thinking about, starting, and exiting business start ups in the EU and the USA**

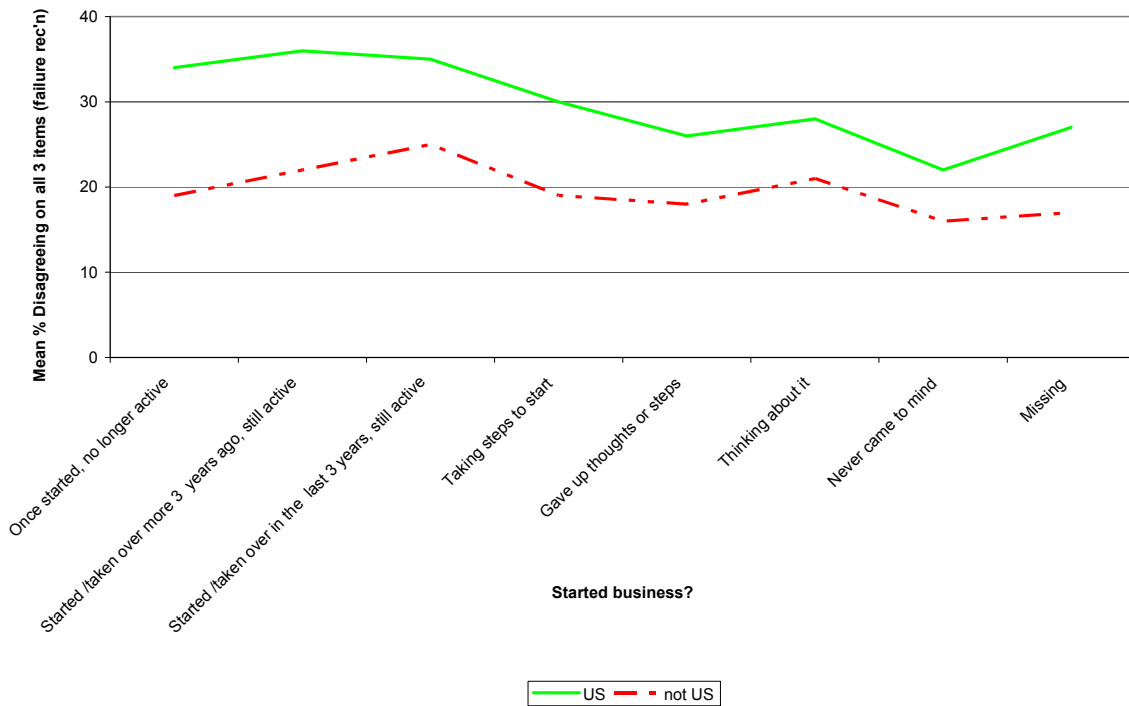
<b>Stage of Starting a Business</b>		<b>Country</b>		<b>Total</b>
		<b>Not US</b>	<b>US</b>	
<b>Never came to mind</b>	Count	5220	215	5435
	% within Country	<b>60%</b>	<b>47%</b>	59%
<b>Thinking about it</b>	Count	973	96	1069
	% within Country	<b>11%</b>	<b>21%</b>	12%
<b>Gave up thoughts or steps</b>	Count	797	19	816
	% within Country	9.1%	4.2%	8.9%
<b>Taking steps to start</b>	Count	161	51	212
	% within Country	<b>1.8%</b>	<b>11.2%</b>	2.3%
<b>Started /taken over in the last 3 years, still active</b>	Count	288	17	305
	% within Country	3.3%	3.7%	3.3%
<b>Started /taken over more 3 years ago, still active</b>	Count	650	25	675
	% within Country	7.4%	5.5%	7.3%
<b>Once started, no longer active</b>	Count	662	32	694
	% within Country	7.6%	7.0%	7.5%
<b>Total</b>	Count	8751	455	9206
	% within Country	100%	100%	100%

Charts 6 and 7 show that the differences of attitudes between the US and other countries are much greater than the differences between groups of people identifying themselves with particular experiences of business. Atypically, people who had started or taken over still-active businesses in the past three years showed greater willingness to give people a second chance in the U S than elsewhere. But within this one group, the difference in the attitudinal variable is not statistically significant. A statistically significant interaction, with strong agreement with giving a second chance as the dependent variable, is implied by this data, though (Two-way full factorial anova, error d f =9505; interaction of country (US or not) and whether or not started a business within the past three years, mean square =11510, d f=.019, p =.019).

**Chart 6** Proportions of strong agreement with giving a second chance to people who have failed in business, for groups with different levels of involvement and success in business, in the U S and elsewhere



**Chart 7 Proportions of disagreement with three statements about rejecting business partnership with, or approval of, people who have failed in business, for groups with different levels of involvement and success in business, in the U S and elsewhere**



By considering collectively some of the groups defined by responses to item 2 of the questionnaire, the relation of business experience to attitudes in the U S and elsewhere can be investigated more fruitfully.

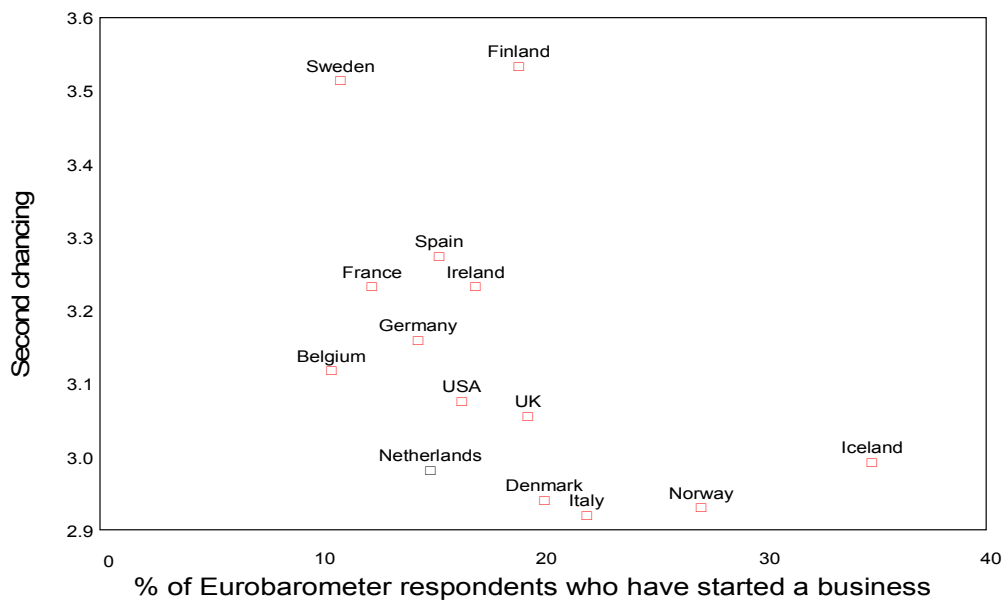
Individuals who had, at some time, started a business tended to have failure tolerance scores that were more positive to entrepreneurship than those of people who had never started a business or were only taking steps to (  $t = 4.7$ ,  $df = 2383.9$ ,  $p < .0005$ ,  $r^2 = .0026$ ). But amongst those who had started businesses, the ones who had also failed or given up (42%) had less positive attitudes to failure tolerance (  $t = 2.6$ ,  $df = 9204$ ,  $p = .009$ ,  $R^2 = .0007$ ). This may be because many of them had been let down by the failure of other businesses. Respondents who had thought about starting a business or taken steps to do so, but had then given up had higher (more positive) failure tolerance scores than others. Second chancing scores were unrelated to these aspects of business experience.

Mean values of these derived business-experience variables vary between nations, as do attitudes. Between individuals, failure tolerance is unrelated to the percentage of persons who have started a business and to the percentage that have failed or given up in a business venture. But between nations, as Chart 8. suggests **low** rates of persons starting businesses tend to go with a **greater**



inclination to give people who have failed in business a second chance (Spearman's  $\rho = -.631$ ,  $N = 14$ ,  $p = .016$ ,  $R^2 = .40$ ). The fact that this effect is significant for countries but not for individuals shows that it is cultural rather than purely personal: the people who have set up businesses aren't necessarily the one's who are unwilling to give people a second chance. But, more interestingly, the correlation is in the opposite direction to the predicted one; "anti-entrepreneurial" attitudes are higher in countries with a high proportion of the population who have started businesses!

**Chart 8** Scatterplot indicating a negative correlation between starting businesses and giving people a second chance



## **8. Implications of the differences in attitudes**

One might suppose that attitudes toward entrepreneurship might have a national economic influence. Indeed, this is one of the principal reasons for considering those attitudes to be important. Prospects of business success might depend particularly on the attitudes of potential investors. For the second part of this study, we collated the mean values of the two attitudinal variables (derived from the Eurobarometer survey) for each nation, with measures of economic growth and entrepreneurial activity within those nations. We wished to investigate whether any of these measures would be correlated with our indicators of entrepreneurship, (a) amongst the general population and (b) amongst the professional and managerial classes of nations.

We used the following data about as many of the countries in the Eurobarometer survey as it could be obtained for.

Three measures of GDP growth over three time periods: 1990 to 2000, 1990 to 1996 and 1996 to 2000:

- Actual growth
- Actual growth per capita
- Trend growth per capita

Percentages of adults of working age (18 to 64 years) who are or have been involved with a business in the following ways:

- Currently trying to start a new business, including any self-employment or selling any goods or services to others (Independent business start-up)
- Currently trying to start a new business or a new venture for own employer as part of normal work (Corporate business start-up)
- Currently the owner of a company and helping to manage it (Owner manager established)
- In the past three years personally provided funds for a new business started by someone else, excluding any purchases of stocks or mutual funds (Business Angels /informal investors)
- In the past twelve months shut down, discontinued or quit a business owned and managed by self, or any form of self-employment, or selling of goods and services to anyone, not counting a business that was sold (Shut down an enterprise in the past twelve months) (Hunt and Levie, 2002))

GDP data was available all of the nations in the Eurobarometer study, except Liechtenstein. The uncertainty avoidance rating and the other variables were available for fourteen of the nineteen nations in the Eurobarometer study. Those for which the data were not available are Greece, Luxembourg, Austria, Portugal and Liechtenstein.

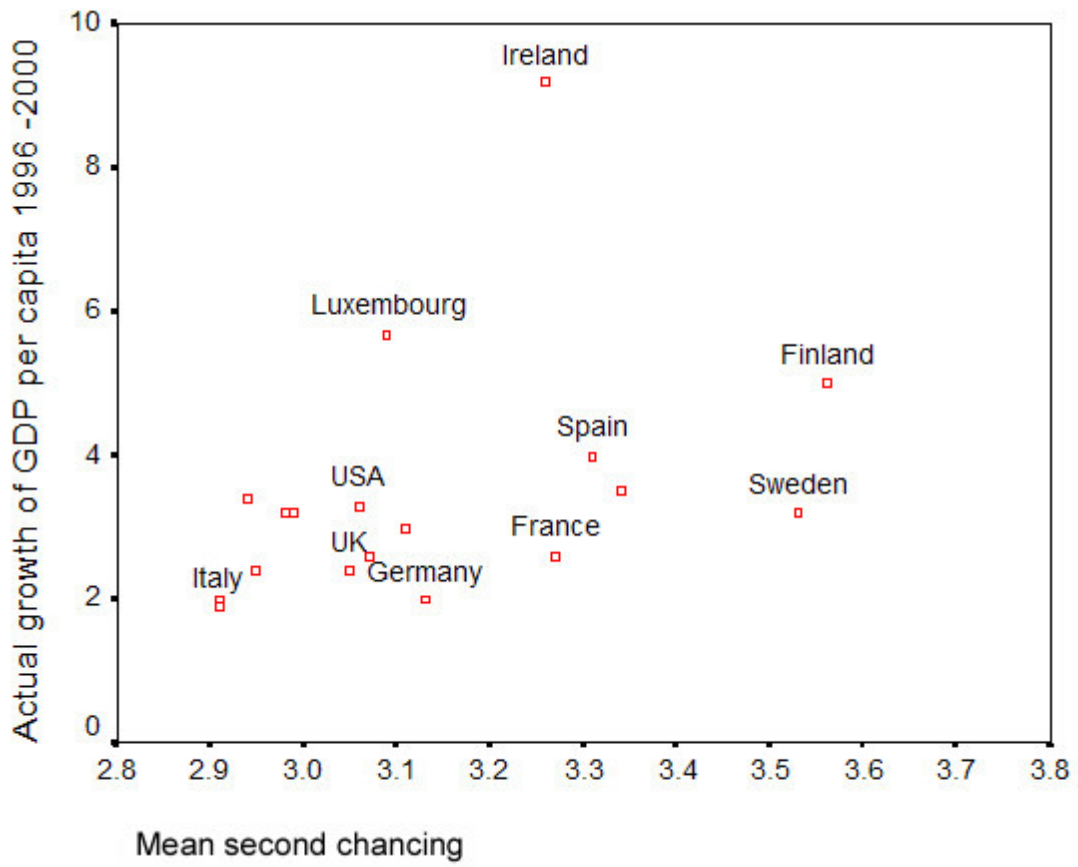
The measures of entrepreneurial activity are obtained from survey research conducted in 2002 (Hunt, Levie 2002). The Eurobarometer 134 survey, on which the variables second chancing and failure tolerance are based, was conducted in November 2002.

The highest correlations with the attitudinal variables occurred for actual growth in GDP per capita. Correlations were also found in other measures of GDP growth (see Table 5). They indicate that in nations with higher GDP growth over the past four years, both people in general or members of the professional and managerial occupational classes tend to believe that people who have failed in business should be given a second chance (See Charts 9 and 10; All respondents: Spearman's  $Rho = .53$ ,  $N = 18$ ,  $p = .025$ ; Respondents in professional or managerial occupations: Spearman's  $Rho = .52$ ,  $N = 18$ ,  $p = .026$ ). But no significant correlations were found between economic variables and the aggregate levels of failure tolerance.

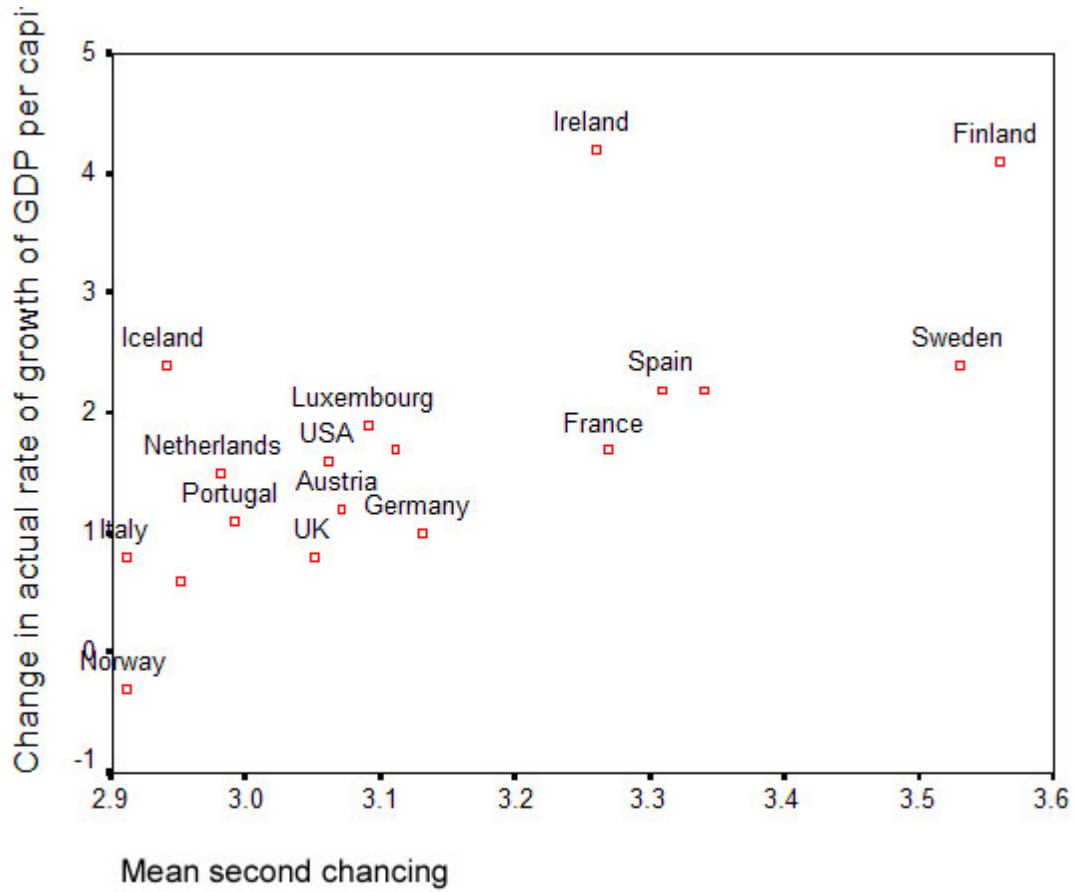
We also compared attitudes to entrepreneurship with the change in the trend rate of growth in the past four years compared with the preceding six. Countries with rates of growth that had increased tended to have a relatively high second chancing. In countries with a declining or more slowly increasing rate of growth, attitudes to second chancing were less tolerant (See Chart 10; All respondents: Spearman's  $Rho = .70$ ,  $N = 18$ ,  $p = .001$ ; Respondents in professional or managerial occupations: Spearman's  $Rho = .66$ ,  $N = 18$ ,  $p = .003$ .) In summary, a high tolerance of failure tends to exist in countries with high or increasing rates of growth. But GDP growth is unrelated to the tolerance of people who have failed in business.

Although none of the correlations between either of the attitudinal measures and Hunt and Levie's measures of entrepreneurial activity were significant, the failure tolerance measure did tend to be weakly positively correlated with those items.

**Chart 9** Significant positive correlation, for eighteen nations, of mean values of second chancing (2002) with annual percentage rates of actual growth of GDP per capita from 1996 to 2002



**Chart 10** Significant positive correlation, for eighteen nations, of mean values of second chancing (2002) with changes in annual percentage rates of actual growth of GDP per capita (1996 to 2000 compared with 1990 to 1996)



**Table 5 Correlations of indicators of economic growth, cultural attitude and entrepreneurial activity with mean national values of second chancing and failure tolerance**

Source	Variable	Dates	Units	Number of the 20 countries of the Eurobarometer study (November 2001) for which data is available												
				Correlations with mean national values of variables derived from the Eurobarometer survey												
				All respondents						Professionals and managers only						
				Second chancing			Failure tolerance			Second chancing			Failure tolerance			
Rho	N	p	Rho	N	p	Rho	N	p	Rho	N	p					
World Bank	Actual growth of GDP	1990 -2000	Annual %	18	-.24	18	.34	+.16	18	.54	-.09	18	.71	+.16	18	.52
World Bank	Actual growth of GDP	1990 -1996	Annual %	18	-.42	18	.087	+.04	18	.88	-.26	18	.30	+.03	18	.90
World Bank	Actual growth of GDP	1996 -2000	Annual %	18	+.35	18	.16	+.38	18	.12	+.39	18	.11	+.30	18	.22
World Bank	Change in actual growth of GDP	90 -96 /96-00	An % p an	18	<b>+.61</b>	18	.008	+.36	18	.14	<b>+.56</b>	18	.016	.28	18	.25
World Bank	Actual growth of GDP per capita	1990 -2000	Annual %	18	-.11	18	.66	+.07	18	.77	-.06	18	.83	+.05	18	.84
World Bank	Actual growth of GDP per capita	1990 -1996	Annual %	18	-.36	18	.14	-.01	18	.96	-.29	18	.25	-.04	18	.87
World Bank	Actual growth of GDP per capita	1996 -2000	Annual %	18	<b>+.53</b>	18	.025	+.26	18	.29	<b>+.52</b>	18	.026	+.18	18	.49
World Bank	Change in actual growth of GDP per cap	90 -96 /96-00	An % p an	18	<b>+.70</b>	18	.001	+.27	18	.28	<b>+.66</b>	18	.003	.16	18	.52
World Bank	Trend growth of GDP per capita	1990 -2000	Annual %	18	.00	18	.99	+.17	18	.49	+.07	18	.78	+.07	18	.80
World Bank	Trend growth of GDP per capita	1990 -1996	Annual %	18	-.16	18	.53	-.11	18	.67	-.10	18	.69	-.02	18	.95
World Bank	Trend growth of GDP per capita	1996 -2000	Annual %	18	+.39	18	.11	+.23	18	.36	+.43	18	.072	+.20	18	.42
World Bank	Change in trend growth of GDP per cap	90 -96 /96-00	An % p an	18	<b>+.61</b>	18	.007	+.36	18	.14	<b>+.61</b>	18	.007	+.42	18	.079
Hunt, Levie	Independent Business Start Up	2002	% work age	14	-.28	14	.34	+.36	14	.21	-.12	14	.68	+.19	14	.52
Hunt, Levie	Corporate Business Start Up	2002	% work age	14	-.26	14	.37	+.36	14	.21	-.14	14	.63	+.44	14	.12
Hunt, Levie	Owner manager established	2002	% work age	14	-.13	14	.66	+.23	14	.43	+.06	14	.85	+.23	14	.42
Hunt, Levie	Business Angels /informal investors	2002	% work age	14	-.08	14	.78	+.14	14	.63	+.05	14	.86	+.34	14	.24
Hunt, Levie	Shut Down an Enterprise in past 12 mths	2002	% work age	14	-.22	14	.45	-.01	14	.99	-.17	14	.57	+.18	14	.55

## 9. Summary of results

Analysis of the 2002 Eurobarometer attitudinal data on business failure suggest that there are two separate dimensions relevant to entrepreneurial activity, and we have labelled them failure tolerance and second chancing.

The USA respondents were more tolerant of failure than any of the European countries, but was slightly below the European average in their willingness to allow business failures a second chance.

There were minor differences between demographic groups in these attitudes. But even individuals' own entrepreneurial activities in the past seemed to have little influence on their current attitudes.

There were higher levels of some entrepreneurial activities in the USA than in Europe. But these were for individuals thinking about starting a business, or taking steps to start a business, rather than actually starting businesses. These behaviours were not associated with more tolerant attitudes to failure or to second chancing.

Paradoxically, countries that are more **intolerant** of giving second chances after business failures are associated with **higher** proportion of the population having been involved in business start-ups.

Favourable attitudes to giving a second chance to business failures were highly correlated with recent GDP growth, and accelerating growth rates. But tolerance of failure seems unrelated to GDP growth or to levels of other entrepreneurial activity.

Throughout the analyses we tested the possibility that the attitudes of those in higher occupations were more influential than of the total population. We did not find any evidence of this differential effect.

## 10. Discussion

Overall we find little evidence that the differences in entrepreneurial behaviour between the USA and Europe can be explained by different levels of tolerance to business failure and to second chancing. Where we have found correlations between these attitudes and behaviours, they tend to be very weak. And the one attitudinal variable that is associated with economic growth (second chancing) is, if anything, lower in the USA than Europe.

The one highest correlation between attitudes and entrepreneurial behaviour was the negative relationship between second chancing and the proportion of the population who had started businesses. Being unexpected, we can only speculate as to the reason for this correlation.

One possible explanation is that, instead of these attitudinal variables promoting behaviour, it is economic experiences that cause differences in attitudes. When a business fails, this is typically associated with losses for many stakeholders in that business, and for many people, their only direct experience of business failure is associated with personal economic losses. For instance:

- They may have lost value from their investments if they owned shares in a business that failed.
- As customers, they may have paid for goods that they did not receive because the business became insolvent, or warranties for large purchases may have become worthless because the supplier ceased to trade.
- As employees, they may have lost their jobs when their employer's business failed.
- If they were in business themselves, they may have had unpaid debts when businesses that they supplied with goods and services went bankrupt.

There is evidence from economic psychology that economic losses have a longer-lasting and more profound effect on individual's attitudes than economic gains. So, if this is the case, that attitudes are the result of, rather than the cause of, entrepreneurial behaviour, this can explain some of our findings. It would explain why, when there are higher levels of entrepreneurial activity in a country, then more individuals who have experienced losses as an indirect effect of a business failure, individuals become more intolerant of those involved in business failures.

Furthermore, this alternative view of the relationship between entrepreneurship and attitudes can explain why people become more tolerant of failure in times of economic growth; during these times, rates of business failure are lower, and so individuals are less likely to have experienced indirect economic losses and thus will be less antagonistic in their attitudes to those who have failed.

But before we develop this argument further, several notes of caution need to be sounded. Firstly, as no longitudinal data are available that would permit time-series analyses of entrepreneurial attitudes and entrepreneurial behaviour (either



at the individual or aggregate level) we are in a weak position to make any inferences about the causal directions of the correlations presented in this paper. Secondly, another disadvantage of using only cross-sectional data is that we could have collected our survey at an atypical point in time. It is not unusual for public opinion to be influenced markedly by vivid news stories, such as the collapse of Enron. But often those shifts in public opinion are short-lived. Again, to guard against these sorts of fluctuations influencing the analyses, longitudinal data would provide much more conclusive evidence.

Thirdly, we should be mindful of the fact that the inter-country differences observed here are very small, accounting for only a very small proportion of the variance. It is thus unlikely that these small differences could be responsible for large international differences in economic or entrepreneurial performance.

Fourthly, it may well be that, the four attitudinal items that we have used in this paper have failed to capture important nuances in attitudes to business failure. For instance, recent exploratory research has suggested that people make sharp distinctions between ‘honest’ and ‘corrupt’ business failures (Grange & Burchell, 2006). It is also possible that, in translating these questionnaire items into all of the different European languages, subtle meanings have been changed. Even with the most careful translation procedures (such as back-translation checks) it is often the case that the meanings or associations of words and phrases in different languages cannot be matched exactly.

Fifthly, we need to be aware of the limitations of explaining national differences in terms of individual attitudes and values. Even if value differences are found to systematically predict differences in entrepreneurship between countries, this is still far from a satisfactory explanation either sociologically or economically. To say ‘Americans take risks because that’s the sort of people Americans are’ leaves us no wiser about the nature of values and the causes of value differences. If we are to draw upon international differences in attitudes or values to explain differences in entrepreneurship, then one needs to have a plausible theoretical account concerning the origins of distinctive values for countries or continents. There have been attempts to do this by sociologists and political scientists. For instance Therborn (1995) has linked distinctive European value systems to the combined influences of the Enlightenment, Christianity, the development of nation-states and citizenship, and an acceptance of hierarchies (for instance, class differences). Similarly, Inglehart (2000) has claimed that value differences along his materialist-postmaterialist dimension can be understood in terms of recent economic development, with the values of individuals being dependent upon the level of fear of scarcity during their socio-economic socialisation. Unfortunately for the concerns of this

paper, these historically-informed theories of value differences between societies do not extend to any theoretical account of the origin of differences in attitudes towards entrepreneurship.

Looking at the predictors of which individuals in a society become self-employed also supports the notion that values may be at least partially responsible for differences in entrepreneurship. Studies have consistently found that the single most powerful predictor of the entry of an employee into self-employment is having a self-employed father; the second most powerful predictor is a mother who has been self-employed (e.g. Rubery, Earnshaw, & Burchell, 1993). Several mediating variables have been assumed to account for this inter-generational transmission of self-employment, including the provision of start-up capital, business knowledge, social capital and inherited businesses. But the socialisation of children into values and norms supportive of entrepreneurship are also assumed to be important. This is an example whereby values might predict entrepreneurship, but this relationship can only be usefully understood if we also take into account the processes which give rise to those values. In other words, values are important to understand processes, but the values are (at least in part) endogenous to the system.

Finally we would note that encouraging a ‘culture’ that promotes business start-ups *per se* may not be an appropriate policy response even if it could be shown that at present start ups were inhibited. Most businesses fail because of management incompetence often at considerable cost to the business owners themselves, and their customers and suppliers. (ABRP 2002, Insolvency Services 2005, De Meza 2002). Encouraging more start ups that simply lead to more failures should not be high on anyone’s policy agenda.

## Notes

<sup>i</sup> A separate literature has addressed the question of whether the legal framework surrounding insolvency and bankruptcy can affect entrepreneurship. A recent cross-country comparison suggests that legal frameworks which reduce the costs of bankruptcy have a positive link with changes in self-employment (Armour and Cumming 2005). This study suggests substantial and quick responses to legal change. This is not consistent with long run underlying cultural attitudes to failure but suggests a more straightforward response of economic behaviour to changing economic incentives.

<sup>ii</sup> This is consistent with the role of push factors influencing self-employment rates. Thus Blanchflower (2000) reports a negative relationship between self-employment and GDP growth for 23 countries in the period 1966-96.

<sup>iii</sup> For a discussion of this and the possible solutions see Van Stel (2003)

<sup>iv</sup> This data is available on a bi-annual basis, but using 10-year periods illustrates the nature of change more parsimoniously.

<sup>v</sup> Van Stel's estimate is midway between other estimates based on either labour force or business numbers surveys. For a full discussion of the US data see Van Stel 2003.

<sup>vi</sup> Although the value for the US entry rate seems comparable to the value of the TEA index for the USA it is not. The entry rate percentage is expressed in relation to the total number of businesses on the relevant register which is an order of magnitude smaller than the total population of people.

<sup>vii</sup> The high but insignificant value of the Pearson correlation coefficient is driven by the US which is an outlier. Excluding the US produces an insignificantly negative correlation. (Pearson  $\sigma = -.309$ ,  $n=9$ , n.s., Kendall's  $\tau = -.197$ ,  $n=9$ , n.s.)

<sup>viii</sup> Each respondent was interviewed in their own language. The consequent multilingual form of the survey can make comparison of responses between nations with different languages problematic. Partly for this reason, we have analysed responses from Anglophone countries only, as well as analysing responses from all of the surveyed countries. One could argue that the interpretation of the questions even varies significantly between national cultures with the same language. However, such differences might well be considered part of the effect we seek to measure, rather than as error.

<sup>ix</sup> These results were all checked by using alternative aggregates of the data to the mean – for instance, the proportion of the sample holding attitudes at each extreme end of the spectrum. But in all cases, the general pattern of the results was unchanged.

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