Self-employment: More may not be better

David G. Blanchflower[*]

Summary

■ I present information on self-employment from eighty countries. Self-employment rates are generally down across the OECD. The main exceptions are the UK and New Zealand. The probability of being self-employed across the OECD is higher for men and for older workers compared with younger workers. In Europe the probabilities are lower the more educated an individual is, while the opposite is true in the US.

It does seem likely that people have an unrealistically rosy view of what it is like to be running their own business rather than staying with the comparative security of being an employee. A surprisingly high proportion of employees say they would prefer to be self-employed. Despite the fact that very high proportions of employees say they would like to set up their own business the reality is something else.

The evidence presented here suggests that people may well be able to judge what is in their own best interests - that is why they remain as employees. The self-employed work under a lot of pressure, report that they find their work stressful and that they come home from work exhausted. Further, they report being constantly under strain, that they lose sleep over worry and place more weight on work than they do on leisure. However, they are especially likely to say they have control over their lives as well as being highly satisfied with their lives.■

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I first started working on self-employment in 1988. I always thought it was an interesting topic, not least because Andrew Oswald and I came up with what we thought was a great title—"What makes an entrepreneur?". Nobody else seemed to care much about understanding the make-up of the elusive entrepreneur despite the fact that he or she is central to the core theories all economists teach. That first paper was extremely difficult to publish at a major journal: it went through numerous revisions and size changes and was rejected summarily. It was eventually published in long form in the *Journal of Labor Economics* in Blanchflower and Oswald (1998). The field was thin then—the only American labor economists to my knowledge who were working in the area were George Borjas and David Evans. I recall the editor Fran Blau saying to us that it was time the paper was published as even in its working paper form it had generated a fairly substantial published literature. There was a ten year time lag from the time we first started working on it to when it was eventually published, which even for economics is unusually long. It is in the top three of my most favourite Blanchflower and Oswald papers—of which there have been many! I am pleased to say though that "What Makes an Entrepreneur" does seem to have been quite influential—according to the Social Science Citations Index, as of August 2004 it had been cited a creditable 83 times. The National Bureau of Economic Research has now even started an Entrepreneurship group led by Josh Lerner. The study of entrepreneurship in general and self-employment in particular appears, at long last, to have come of age.

My remit for this paper is to survey recent trends in self-employment in the OECD countries. I have interpreted these instructions fairly broadly as I didn't want to simply regurgitate the work I first published in *Labour Economics* in 2000. My intent here is to extend

forward that evidence and discuss new work that has been carried out since that time. I will also introduce new evidence of my own on the stresses and strains and pressures that the self-employed face, particularly when they have employees. I present macro-evidence across 30 OECD countries alongside evidence from micro-surveys on these OECD countries as well as from a further 50 non-OECD countries, on several million individuals. The main comparisons I draw, however, are between the United States and European countries in general and the European Union in particular. I make use of data from the Outgoing Rotation Group files of the Current Population Survey (ORG) and the General Social Survey (GSS) for the United States along with multiple country data drawn from the World Values Survey (WVS), the Eurobarometer Surveys (EBS) for Europe and the International Social Survey Programme (ISSP). These latter three survey series have the advantage that they collect individual level data at different points of time across many countries using identical sample designs and questionnaires. For example, the EBS surveys collects data for the European Union in each member country at least twice a year while the ISSP collects data annually: the WVS has now had four sweeps. Details of these data files are provided in Appendix 1.

In the first section I examine trends in self-employment by country using both aggregated and disaggregated data for many countries but with special emphasis on comparisons between the USA and Europe. I present evidence on the determinants of self-employment by country—including by time, sector, age, race, gender, immigrant status and level of education. In Section 3 I examine the role of liquidity constraints in limiting the supply of entrepreneurs especially among minorities and immigrants. I also consider the impact of and affirmative action programs that have been designed to help minority-owned firms primarily in construction. In Section 3 I look at evidence first presented in Blanchflower, Oswald and Stutzer (2001) that there is a huge unfilled demand to be self-employed by those working as employees. Section four examines the reasons why that might be using data from the fifteen member countries of the EU and the United States. I replicate the well-known finding that the self-employed are more satisfied with their jobs than is true of employees. This is true across most OECD countries—the main exceptions are Austria, Finland and Greece. I find that, in comparison with employees, the self-employed are also more satisfied with their pay, the type of work they do and like the fact that they have short commuting times. The

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paper distinguishes a number of less desirable aspects of being self-employed which do not appear to have been quantified previously. The results help to explain why so many of those who express a desire to become self-employed are thwarted in that desire, not least of which is the difficulty in obtaining capital. The self-employed work exceptionally long hours. The self-employed in general, and the most successful ones with employees—the job makers—in particular, report that, in comparison with those who do wage work they are *less* satisfied with the long hours they have to work. The self-employed are especially likely to report that they find their work stressful; they come home from work exhausted; that their job limits their family time; that they felt too tired after work to enjoy the things they would like to do in the home; that their partner/family gets fed up with the pressure of their job; that they had lost sleep over worry; felt unhappy and depressed; were constantly under strain and worked under a great deal of pressure. However, they appear to be satisfied in their lives, prefer work over leisure and feel they have free choice and control over their lives. The availability of new European data means that I am able to distinguish between the satisfaction levels of the most successful self-employed who have *one or more employees*—the *job makers*—self-employed who have one or more employees--the job makers--and the self-employed without any employees who have created a job only for themselves. The size of any effects for the self-employed with employees are generally more pronounced than for the self-employed with no employees. The patterns are very similar across countries. In Section 5 I present my conclusions. More does not appear to be better!

1. Self-employment rates by country

Self-employment rates tend to vary a great deal across both countries and time.[1] It is difficult to obtain comparable estimates by country because of differences in the way self-employment is measured (for a discussion see Blanchflower, 2000). The most definitive source of data is that provided by the OECD—for details see the data appendix. I do have some concerns about the reliability of these data: especially worrying are the unexplained big jumps between successive years for several countries—Germany, Finland, Portugal and Norway are the most obvious examples. At this time we have no better source:

[1] For a discussion of the literature on self-employment see Blanchflower (2000).

in subsequent sections I turn to using more consistent micro-data obtained from comparable surveys taken across multiple countries. For ease of reference Table 1 provides estimates of the self-employment rates for selected years from 1956-2002 for the non-agricultural sector. We exclude agriculture here as it is different—self-employment rates have generally been high there and declining in most countries. A number of facts stand out from the table.

- There is considerable variation in self-employment (SE) rates across countries. The latest rates available, mostly in 2002, vary from a low of 5.9 percent in Luxembourg to a high of 37.8 percent in Greece.

- SE rates are generally higher in poorer countries such as Greece, Turkey, Mexico, Korea and Portugal.

- SE rates appear to have declined over time in most countries. The major exception is the UK which has experienced growth from 7.7 percent in 1956 to 11.5 percent in 2002. The Czech Republic has seen an increase over the short time frame since the fall of the Berlin wall.

Non-agricultural rates of SE are everywhere lower than the overall rates due to the high levels of SE in agriculture. Non-agricultural rates have increased in Australia, Belgium, the Czech Republic, Iceland, Ireland, Mexico, New Zealand, Poland, Portugal, Slovak Republic, Sweden and the UK.

Table 2 reports pooled cross-country regression: there are approximately 1000 observations for each of 30 countries over the period 1956-2002 using these OECD data. Results are provided overall and for non-agriculture; equations include a time trend with and without a lagged dependent variable alongside a full set of country dummies. The dependent variable in the first two columns is the overall self employment rate (mean=.191) and in the last two the non-agricultural rate (mean=.123). Overall the trend is down in the first two columns, whether or not a lagged dependent variable is included. When the lag is in there, and it seems it should be given the very high t-statistics, as might be expected, the magnitude of the country effects declines. There is a negative sign on the time trend in column 3 for the non-agricultural rate but it becomes insignificant when the lag is added. In comparable equations for agriculture the trend term is everywhere negative with or without the lag (results not reported); declining agricultural self-employment drives down the time trend in the overall equation. Looking at column 4, where Australia is the ex-

cluded country, Greece, Italy, Korea, Mexico, New Zealand, Portugal and Turkey have significant *positive* coefficients; Denmark, Luxembourg, Norway, Sweden and the USA have the largest *negative* coefficients.

Table 1. Self-employment as a percent of all non-agricultural employment

	1956	1966	1976	1986	1996	2002
Australia		10.2	11.1	12.8	11.9	12.1
Austria		13.6[a]	9.5	6.3	7.0	7.8[b]
Belgium	13.0	14.4	11.4	13.1	14.5	14.1[c]
Canada	9.6	7.7	6.1	7.2	9.2	8.7
Czech Republic					11.8	15.6
Denmark	15.5[d]	14.3[f]	9.6	7.1	7.2	7.2
Finland	11.2[d]		8.0	6.8	10.3	9.3
France	19.5	14.2	10.9	9.8	7.7	6.7
Germany	10.1[e]	8.7	8.8	8.7	9.0	9.5
Greece	30.9[d]		30.9[l]	29.0	29.1	26.4
Hungary					16.6	11.8
Iceland		9.9	8.5	9.5	15.0	13.8
Ireland		9.8	10.6	11.1	12.9	12.7
Italy	27.6[k]	26.1	22.5	22.6	24.3	23.2
Japan	22.8	15.6	14.7	13.6	10.1	9.1
Korea				27.1	25.1	26.0
Luxembourg	16.1[d]	13.4	9.9	8.2	6.4	5.1
Mexico		19.0[h]	21.6[i]	20.7[m]	27.4	27.2
Netherlands	16.6	14.7[j]	8.9	8.2	9.9	9.9
New Zealand	9.3[l]	8.3	9.5	13.5	16.6	15.8
Norway	10.9	9.5	7.1	6.6	5.5	4.9
Poland	3.2[d]	2.7	2.0	5.1	11.5	12.1
Portugal	16.7	15.0	11.8	16.9	19.9	17.7
Slovak Republic					6.6	8.6
Spain				16.0	18.4	15.7
Sweden		6.9[o]	4.4	4.2	9.1	8.5
Turkey	33.9[p]				25.8	24.0[b]
UK	6.4	5.6	7.0	10.8	12.0	11.0
US	10.3	8.7	6.8	7.4	7.3	6.4

Notes: [a] 1968; [b] 2001; [c] 1999; [d] 1960; [e] 1957; [f] 1965; [g] 1959; [h] 1970; [i] 1977; [j] 1961; [k] 1958; [l] 1980; [m] 1990; [n] 1988; [o] 1967 [p] 1955.
Source: OECD Labour Force Statistics (www1.oecd.org/scripts/cde/members/ LFSDATAAuthenticate.asp).

Table 2. Trends in self-employment by country (1955-2002)

	ALL		Non-agricultural sector	
	(1)	**(2)**	**(3)**	**(4)**
Time	-.0024	-.0001	-.0002	.0001
	(26.91)	(2.32)	(2.53)	(1.83)
Self Employment$_{t-1}$		.9088		.8943
		(86.74)		(69.77)
Austria	.0141	-.0036	-.0305	-.0053
	(1.62)	(1.35)	(5.06)	(2.23)
Belgium	-.0011	.0000	.0163	.0021
	(0.14)	(0.02)	(2.88)	(0.94)
Canada	-.0427	-.0050	-.0383	-.0043
	(5.30)	(1.99)	(6.86)	(1.91)
Czech Republic	.0152	.0068	.0132	.0067
	(1.15)	(1.64)	(1.44)	(1.83)
Denmark	-.0261	-.0052	-.0301	-.0053
	(3.02)	(1.90)	(5.01)	(2.21)
Eire	.0891	.0056	-.0006	.0005
	(10.59)	(2.06)	(0.11)	(0.21)
Finland	.0358	-.0013	-.0349	-.0035
	(4.38)	(0.53)	(5.74)	(1.43)
France	.0275	-.0017	-.0031	-.0029
	(3.41)	(0.69)	(0.56)	(1.37)
Germany	-.0379	-.0034	-.0281	-.0032
	(4.69)	(1.36)	(5.01)	(1.42)
Greece	.2846	.0185	.1771	.0171
	(30.89)	(4.45)	(27.75)	(5.03)
Hungary	.0471	-.0027	.0300	-.0039
	(3.70)	(0.68)	(3.13)	(1.02)
Iceland	.0121	.0015	-.0087	.0001
	(1.44)	(0.59)	(1.50)	(0.04)
Italy	.1430	.0095	.1194	.0116
	(17.58)	(3.28)	(21.20)	(4.33)
Japan	.0426	-.0000	.0270	.0001
	(5.30)	(0.02)	(4.84)	(0.00)
Korea	.2480	.0173	.1455	.0131
	(29.66)	(4.73)	(21.44)	(4.03)
Luxembourg	-.0083	-.0051	-.0209	-.0049
	(1.02)	(2.06)	(3.69)	(2.18)
Mexico	.2026	.0223	.1436	.0203
	(17.88)	(5.09)	(18.31)	(5.31)
Netherlands	-.0141	-.0046	-.0149	-.0039
	(1.63)	(1.73)	(2.47)	(1.65)

Table 2. continued….

	ALL		Non-agricultural sector	
	(1)	**(2)**	**(3)**	**(4)**
New Zealand	.0434	.0033	.0194	.0057
	(4.56)	(1.02)	(2.94)	(2.01)
Norway	-.0227	-.0045	-.0422	-.0058
	(2.80)	(1.82)	(7.53)	(2.55)
Poland	.1304	.0087	-.0584	-.0043
	(15.86)	(3.04)	(10.26)	(1.85)
Portugal	.1075	.0105	.0418	.0046
	(13.34)	(3.89)	(7.49)	(2.05)
Slovak Republic	-.0395	-.0022	-.0403	-.0030
	(2.86)	(0.51)	(4.21)	(0.75)
Spain	.0975	.0048	.0421	.0025
	(11.86)	(1.79)	(7.39)	(1.10)
Sweden	-.0580	-.0055	-.0511	-.0053
	(6.94)	(2.12)	(8.60)	(2.23)
Switzerland	-.0114	-.0011	n/a	n/a
	(0.93)	(0.31)		
Turkey	.2754	.0229	.1540	.0127
	(25.47)	(4.77)	(19.64)	(3.39)
UK	-.0613	-.0037	-.0302	-.0022
	(7.61)	(1.45)	(5.41)	(1.01)
USA	-.0605	-.0061	-.0378	-.0051
	(7.54)	(2.43)	(6.80)	(2.28)
Constant	.2176	.0156	.1209	.0111
	(33.53)	(5.06)	(26.76)	(4.70)
N	1064	1017	1016	973
Adjusted R^2	.8643	.9867	.8386	.9755
F	226.8	2433.8	182.9	1288.1

Source: OECD Labour Force Statistics.
Notes: excluded category Australia.

Table 3a. Probability of being self-employed—Europe
(probit equation)

	(1)	(2)
Time trend	-.0004	.0000
	(5.65)	(0.03)
Austria	.0264	.0209
	(4.09)	(2.75)
Belgium	.0884	.0825
	(23.94)	(21.38)
Denmark	-.0302	-.0247
	(6.87)	(5.35)
East Germany	-.0104	-.0115
	(2.95)	(3.02)
Eire	.0184	.0131
	(2.82)	(1.96)
Finland	.0048	.0116
	(0.57)	(1.11)
UK	.0009	-.0092
	(0.49)	(4.70)
Greece	.2270	.2093
	(49.17)	(42.68)
Italy	.1544	.1394
	(70.88)	(60.84)
Luxembourg	.0115	.0160
	(0.71)	(0.93)
Netherlands	-.0230	-.0163
	(7.41)	(4.93)
Northern Ireland	-.0195	-.0244
	(2.20)	(2.69)
Portugal	.0997	.0817
	(22.69)	(17.47)
Spain	.1403	.1274
	(49.23)	(41.71)
Sweden	.0060	.0053
	(1.00)	(0.72)
West Germany	.0003	-.0042
	(0.20)	(2.26)
Age		.0063
		(25.27)
Age^2		-.00004
		(14.19)
Male		.0244
		(21.83)

Table 3a. continued….

	(1)	(2)
Age left school 15		-.0144
		(7.50)
Age left school 16		-.0117
		(6.23)
Age left school 17		-.0139
		(6.54)
Age left school 18		-.0149
		(7.92)
Age left school 19		-.0265
		(11.79)
Age left school 20		-.0233
		(9.23)
Age left school 21		-.0335
		(11.69)
Age left school 22 or older		-.0666
		(40.83)
Age left school still studying		-.0632
		(9.74)
N	383,559	333,456
Chi^2	13028.05	19125.6
Log likelihood	-137875.1	-116186.3
Pseudo R^2	.0451	.0760

Notes: The dependent variable is 1 if self-employed and zero if employed. T-statistics are in parentheses. Sample consists of non-agricultural workers only. Estimation procedure is dprobit in STATA. Sample weights are included so that the estimates are representative of the EU.

Source: Eurobarometer Surveys, 1975-1999. Excluded category France and left school at age 14 or less.

Table 3b. Self-employment private sector dprobits for the US (1979-2002)

	(1)	(2)	(3)	(4)
	1979-1991	**1992-2002**	**1994-2002**	**1994-2002**
				US born
Male	.0466	.0271	.0259	.0235
	(145.36)	(66.35)	(56.79)	(47.40)
Black	-.0459	-.0440	-.0431	-.0433
	(88.62)	(65.57)	(55.40)	(52.68)
Hispanic	-.0291	-.0374	-.0346	-.0342
	(45.37)	(52.93)	(32.35)	(29.23)
Other races	-.0102			
	(12.07)			
Asian		-.0060	-.0167	-.0260
		(5.86)	(9.27)	(11.19)
American Indian		-.0213	-.0229	-.0228
		(11.70)	(11.38)	(10.83)
Age	.0122	.0108	.0103	.0104
	(216.13)	(138.37)	(117.08)	(110.74)
Age^2	-.0001	-.0001	-.0001	-.0001
	(158.38)	(92.49)	(76.26)	(71.81)
Construction	-.0526	-.0481	-.0526	-.0523
	(60.76)	(44.62)	(45.29)	(40.44)
Repair services	-.0188	-.0204	-.0281	-.0271
	(14.60)	(13.50)	(17.48)	(15.20)
Personal services	-.0209	-.0490	-.0524	-.0507
	(17.89)	(43.66)	(43.09)	(36.89)
Years of education	.0100	NO	NO	NO
	(171.52)			
Schooling dummies	NO	YES	YES	YES
Year dummies	YES	YES	YES	YES
Country dummies	NO	NO	YES	NO
Industry dummies	YES	YES	YES	YES
State dummies	YES	YES	YES	YES
N	2,810,390	1,994,519	1,580,392	1,385,978
Pseudo R^2	.2543	.2210	.2167	.2276
Log likelihood	-819,619	-609,176	-483632	-424302

Notes: Probit analysis is performed using the dProbit command in STATA on a sample of workers. The percentages reported here are the coefficients from the Probit analysis and indicate the percentage point differences in self-employment rates between the indicated group and Whites. T-statistics in parentheses. Excluded industry is agricultural services.
Source: Blanchflower and Wainwright (2004).

It is natural to look a little more closely at micro-data at the level of the individual to determine what characteristics the self-employed possess. To set the scene, Table 3a presents the simplest kind of self-employment probit equation across member countries of the European Union. Weights are imposed so that the results are representative of the EU as a whole. The data file used is the Mannheim Euro-barometer Trend File, 1970-1999 (ICPSR No. 3384) which combines seventy different Eurobarometer Surveys into comparable format. Data on self-employment are only available for the years 1975-1999. I report estimated marginal derivatives using the dprobit procedure in STATA from these models that can be interpreted as the effect on the probability of being self-employed of an infinitesimal change in each independent continuous variable and the discrete change in the probability for dummy variables. Here the dependent variable is set to one if the person reports themselves as self-employed and set to zero if they are a worker: agricultural workers are excluded. The sample size is approximately 385,000 people from each of the member countries of the EU: separate results are also reported for Northern Ireland and East and West Germany. The omitted base category is France. The first equation includes country dummies and no personal controls along with a time trend that has a significant negative coefficient as it did in column 3 of Table 2 above. When personal controls are included the significance of the time trend disappears. Self-employment is higher for men and for those with less education. The probability of being self-employed in the EU rises with age and reaches a maximum at age 76. The country dummies provide a snap-shot view of the international pattern of self-employment. Greece and Italy are at the top of the rankings, for instance, while the Netherlands and Denmark are at the bottom. The probability of being self-employed is *lower* among highly educated workers. The t-statistic on years of schooling is well-determined at 8.99 in the first column of Table 3a.

Table 3b provides comparable evidence from the United States using data from the Outgoing Rotation Group (ORG) files of the Current Population Survey. This Table is taken from Blanchflower and Wainwright (2004). Sample size is large: there are a total of over 4 million data points. Separate equations are reported for the period 1979-1991 and for 1992-2002. The reason for this is there was a sample redesign in 1992 and a number of the variables were changed—in particular the questions on schooling. Controls include a full set of

state, year and industry dummies along with controls for gender, age, schooling and race. A full set of industry dummies are included but the three largest industry dummies are reported—Construction, Repair Services and Personal Services. The coefficients that are reported are in relation to the excluded category Agricultural Services which is the industry with the highest rate of self-employment; hence all of the other industry dummies have larger negative coefficients. Column 3 includes controls for country of origin if the individual was not born in the US: column 4 is restricted to the US born. The sample for the final two columns is for 1994-2002 as these are the only years where immigration status information is available. The main findings are.

- Self-employment is higher among men than women.
- The gender gap has narrowed over time from 4.7 percent in the first period to 2.7 percent in the second.
- Minorities have lower self-employment rates than whites—blacks for example have rates 4.5 percentage points lower than whites in the second period while Hispanics are 3.7 percentage points lower.
- The gap between black and white rates have remained constant whereas the gap for Hispanics has widened from 2.9 percent to 3.7 percent.
- The race effects are broadly similar when the sample excludes individuals born outside the United States in column 4.
- As in the EU the probability of being self-employed rises with age to a maximum and then declines. In the first period it reaches a maximum at age 61 and at age 54 in the later period, which is a lot lower than was found for the EU.
- Self-employment is especially prevalent in Construction, Repair Services, Personal Services and Agriculture.
- In contrast to the EU, the probability of being self-employed is related positively to an individual's schooling. In column 1 of Table 3b years of schooling enters positively. In the second column years of schooling is replaced with a set of fifteen levels of education dummies, which also show the same result. The excluded category is "Less than first grade". Table 4 reports the coefficients on the various schooling dummies. In the United States the probability of being self-employed *increases* with schooling which contrast with the EU where the probability *declines* with schooling (Table 3a above).

- There is a downward trend in self-employment (non-agricultural plus agricultural self-employment) in the USA. This can be seen from the two sets of year dummies included in both equation 1 and 2 that are shown below. Year dummies are included rather than a time trend simply because of the size of the data files concerned and the fact that there are not consistent education controls available through time. The left side of Table 5 takes the year dummies from column 1 of Table 3b and the right side takes the year dummies from column 2 of the Table. In both cases there is a steady decline in the coefficients. The effect is more pronounced in the later period. Of course, the two sets of data should be considered as cumulative; 1992 is simply rescaled to zero and then later years compared to it. 1992 itself is likely more than three percentage points lower than the 1979 rate.

Table 4. Coefficients on education dummies from self-employment equation, USA

Less than 1st grade	.0000
1st—4th grade	.0076
5th or 6th	.0499
7th or 8th	.1041
9th	.1016
10th	.1045
11th	.0981
12th grade no diploma	.1034
High school graduate, diploma or GED	.1002
Some college but no degree	.1386
Associate degree—occupational/vocational	.1498
Associate degree—academic program	.1596
Bachelor's degree	.1959
Master's degree	.2250
Professional school degree	.5292
Doctorate degree	.4195

Source: Table 3b.

Table 5. Coefficients on year dummies from self-employment equation, USA

Year	Coefficient	T-statistic	Year	Coefficient	T-statistic
1979	.0000		1992	.0000	
1980	.0010	1.39	1993	-.0007	0.94
1981	.0013	1.76	1994	.0044	5.43
1982	.0010	1.40	1995	.0003	0.41
1983	.0026	3.57	1996	-.0065	7.97
1984	.0029	3.91	1997	-.0059	7.31
1985	.0003	0.48	1998	-.0095	11.88
1986	-.0009	1.23	1999	-.0125	15.68
1987	-.0005	0.74	2000	-.0156	19.85
1988	-.0007	1.06	2001	-.0191	25.03
1989	-.0023	3.22	2002	-.0201	27.07
1990	-.0024	3.36			
1991	-.0033	4.61			

Source: Table 3b.

There is a good deal of evidence that the trend in self-employment is downward in many OECD countries. Evidence from a series of GDP growth equations presented in Blanchflower (2000) did not suggest that the self-employment rate increased the real growth rate of the economy; in fact there was even evidence of the opposite. I have seen no convincing evidence of any kind in the literature that either increasing the proportion of the workforce that is self-employed, or having a high level of self-employment produces any positive macroeconomic benefits. Such evidence that does exist suggests quite the reverse. More is not better.

Governments on the other hand frequently see self-employment as a route out of poverty and disadvantage and for this reason offer aid and assistance for small businesses. The justification for these actions are usually that this will help promote invention and innovation and thus create new jobs; new firms may also raise the degree of competition in the product market bringing gains to consumers; greater self-employment may also go along with increased self-reliance and well being. Unfortunately economists have little evidence on whether these hypothetical benefits exist in practice. Even the widely held view, best expressed in Birch (1979), that small firms disproportionately are the creators of jobs has been challenged by Davis, Haltiwanger and Schuh (1996a,b) who have undertaken the most careful empirical analysis of

the job creation process to date. They argue, persuasively that "conventional wisdom about the job creating powers of small businesses rests on statistical fallacies and misleading interpretations of the data" (1996a, p. 57). Indeed, they go on to conclude the following.

"It is true that small businesses create jobs in disproportionate numbers. That is gross job creation rates are substantially higher for smaller plants and firms. But because gross job destruction rates are also substantially higher for smaller plants and firms, they destroy jobs in disproportionate numbers. We found no strong systematic relationship between employer size and net job growth rates….Finally, and in contrast to the lack of a clear-cut relationship between employer size and job growth,…(we found)..clear evidence that large employers offer greater job durability" (1996a, p. 170).

Despite the lack of evidence of the benefits of having a larger small business sector and/or having a higher proportion of the workforce self-employed many governments around the world provide subsidies to individuals set-up and to remain in business. In Australia, Britain and France, for example, government programs provide transfer payments to the unemployed while they attempt to start businesses. Many countries, including the UK and the United States, have government programs to provide loans to small businesses, and even exempt small businesses from certain regulations and taxes. In the US similar programs are being started for unemployment insurance and welfare recipients.

Kosanovich and Fleck (2001) report that programs to help the unemployed move into self-employment are highly effective in raising the self-employment rate of participants, although it remains unclear how cost effective the programs are. Between 1995 and 1999 seven states - Delaware, Maine, Maryland, New Jersey, New York, Oregon, and Pennsylvania participated in a Self-Employment Assistance Program (SEA). To participate in an SEA program, Unemployment Insurance (UI) claimants must pass through a profiling process that was designed to assess the likelihood of their reemployment within the 26 weeks of benefit eligibility or, conversely, the likelihood of their exhaustion of benefits prior to reemployment. By statute, SEA programs may not serve more than 5 percent of a state's UI claimants. Only New York has ever included more than 1 percent of its UI claimants in its SEA program. Kosanovich and Fleck (2001) whose study was undertaken on behalf of the US Department of Labor Office of Workforce Security, surveyed 1176 participants in the SEA

programs in the states of Maine, New Jersey and New York and found that the respondents achieved high rates of self-employment. Compared to eligible non-participants, individuals who participated in the SEA program in these states were 19 times more likely to have been self-employed at any time post-unemployment. For participants 25-36 months from initial program enrollment, 58 percent in New York and 60 percent in New Jersey were either self-employed or both self-employed and wage/salary employed. In Maine, over 40 percent of participants were either self-employed or both self-employed and wage/salary employed at 25-36 months since their program enroll-ment. higher rates of reemployment in any position, whether self-employed or wage/salary employed, than non-participants. The study found that program participants were four times more likely than non-participants to have obtained employment of any kind (either wage/salary or self-employment). These programs appear to be effec-tive in helping the unemployed move into self-employment and stay there; but there is no evidence that suggests they have any impact on macroeconomic performance.

2. Liquidity constraints, race, immigration, discrimina-tion and affirmative action

One possible impediment to entrepreneurship is lack of capital and there is a burgeoning literature suggesting that this is an important phenomenon constraining the supply of entrepreneurs in many coun-tries and in the US especially women, African-Americans and Hispan-ics. In work based on US micro data at the level of the individual, Ev-ans and Leighton (1989), and Evans and Jovanovic (1989), have ar-gued formally that entrepreneurs face liquidity constraints. The au-thors use the National Longitudinal Survey of Young Men for 1966-1981, and the Current Population Surveys for 1968-1987. The key test shows that, all else remaining equal, people with greater family assets are more likely to switch to self-employment from employment. This asset variable enters probit equations significantly and with a quad-ratic form. Although Evans and his collaborators draw the conclusion that capital and liquidity constraints bind, this claim is open to the objection that other interpretations of their correlation are feasible. One possibility, for example, is that inherently acquisitive individuals both start their own businesses and forego leisure to build up family assets. In this case, there would be a correlation between family assets

and movement into self-employment even if capital constraints did not exist. A second possibility is that the correlation between family assets and the movement to self-employment arises because children tend to inherit family firms. Parker (2002) provides some much needed theory on whether banks ration enterprises.

Blanchflower and Oswald (1998), find that the probability of self-employment depends positively upon whether the individual ever received an inheritance or gift. This emerges from British data, the National Child Development Study; a birth cohort of children born in March 1958 who have been followed for the whole of their lives. Second, when directly questioned in interview surveys, potential entrepreneurs say that raising capital is their principal problem. Third, the self-employed report higher levels of job and life satisfaction than employees. Fourth, psychological test scores play only a small role. Burke et al. (2000, 2002) replicate the findings using the same data source. Work by Holtz-Eakin, Joulfaian and Rosen (1994a, 1994b), drew similar conclusions using different methods on US data. The work of Black et al. (1996) for the UK, discovers an apparently powerful role for house prices (through its impact on equity withdrawal) in affecting the supply of small new firms. Cowling and Mitchell (1997), find a similar result. Again this is suggestive of capital constraints. Lindh and Ohlsson (1996) adopt the Blanchflower-Oswald procedure and provide complementary evidence for Sweden. Finally, Bernhardt (1994), in a study for Canada, using data from the 1981 Social Change in Canada Project also found evidence that capital constraints appear to bind.

Using the 1991 French Household Survey of Financial Assets, Laferrère and McEntee (1995), examined the determinants of self-employment using data on intergenerational transfers of wealth, education, informal human capital and a range of demographic variables. They also find evidence of the importance played by the family in the decision to enter self-employment. Intergenerational transfers of wealth, familial transfers of human capital and the structure of the family were found to be determining factors in the decision to move from wage work into entrepreneurship. Broussard et al. (2003) found that the self-employed in the USA have between .2 and .4 more children compared to the non-self-employed. The authors argue that having more children can increase the likelihood that an inside family member will be a good match at running the business. One might also think that the existence of family businesses, which are particularly

prevalent in farming, is a further way to overcome the existence of capital constraints. Transfers of firms within families will help to preserve the status quo and will work against the interests of blacks in particular who do not have as strong a history of business ownership as indigenous whites. Analogously, Hout and Rosen (2000) found that the offspring of self-employed fathers are more likely than others to become self-employed and argued that the historically low rates of self-employment among African-Americans and Latinos may contribute to their low contemporary rates. A study undertaken for the Canadian labor market by Kidd (1993) also reported that the availability of capital is a significant barrier to self-employment. Johansson (2000a,b) in a study for Finland used a unique data file drawn from the Longitudinal Employment Statistics, compiled by Statistics Finland. It covers the years 1987-1995 and includes, in principle, every individual who has had a job in Finland during the period—it is the *population*. A sample of just over 100,000 workers aged 18-65 was randomly selected and they were followed from 1987-1994. Johansson's empirical strategy was to model the probability of an individual entering self-employment. The main result from the study was that a higher level of wealth significantly increased the probability that an individual made a transition from wage-employment to self-employment.

A continuing puzzle in the literature has been why the self-employment rate of black males is one third of that of white males and has remained roughly constant since 1910. Fairlie and Meyer (2000), rule out a number of explanations for the difference. They found that trends in demographic factors, including the Great Migration and the racial convergence in education levels "did not have large effects on the trend in the racial gap in self-employment" (p. 662). They also found that an initial lack of business experience "cannot explain the current low levels of black self-employment". Further they found that "the lack of traditions in business enterprise among blacks that resulted from slavery cannot explain a substantial part of the current racial gap in self-employment" (p. 664). Fairlie (1999) in a recent paper has shown that a considerable part of the explanation of the differences between the African-American and white self-employment rate can be attributed to discrimination. Tim Bates (1989), finds strong supporting evidence that racial differences in levels of financial capital have significant effects upon racial patterns in business failure rates. Robert Fairlie (1999) found that the black exit rate from self-

employment is twice as high as that of whites. Fairlie and Meyer (1998) found that immigration had no statistically significant impact at all on black self-employment. In a subsequent paper Fairlie and Meyer (2004), found that self-employed immigrants did displace self-employed native non-blacks. They found that immigration has a large negative effect on the probability of self-employment among native non-blacks, although, surprisingly, they found that immigrants *increase* native self-employment earnings.

Blanchflower, Levine and Zimmerman (2003) found evidence that minority-owned firms, especially those owned by African-Americans and Hispanics, are discriminated against in the market for credit. There is a market failure in the credit market—the commercial banks in the US appear to be the major source of the credit constraints faced by minorities. The data they use are drawn from a representative sample of small firms with less than 500 employees in the US in both 1993 and 1998. The data are especially relevant as they were collected by the regulator—the Board of Governors of the Federal Reserve System and the Small Business Administration. The main findings from the study were as follows.

- Minority-owned firms and especially African-American owned firms were much more likely than firms owned by whites to report difficulties in obtaining capital.

- Minority-owned firms were particularly likely to report that they did not apply for a loan over the preceding three years because they feared the loan would be denied.

- When minority-owned firms did apply for a loan their loan requests were substantially more likely to be denied than other groups, even after accounting for differences in factors like size and credit history. A comparable loan filed by a firm owned by blacks is twice as likely to be denied than if the application was filed by a white owner.

- No evidence of race differences was found with the use of credit cards. This is corroborative evidence that the results on loan applications are not being driven by unobserved variables. In contrast to a small business loan where the bank normally interviews the applicant, with credit cards the approval process is highly automated and the race of the applicant is normally unknown to the lending institution.

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- When minority-owned firms did receive a loan they would have to pay higher interest rates on the loan than was true of comparable white-owned firms. Blacks receive a double whammy—even if they get through the tough hurdle of having their loans approved they would have to pay a one percentage point higher interest rate than if they had been white and filed the same loan application.
- There is no evidence that the level of discrimination in the market for credit diminished during the 1990's.

Black, Holtz-Eakin and Rosenthal (2001) show that there is considerable regional dispersion in self-employment rates. The authors show that the variation of self-employment rates across areas cannot be attributed to differences among the metropolitan areas in the individual attributes—age, education, immigrant status, marital status, and so on—of their populations. Neither can it be explained simply on the basis of location—there are not simply good places and bad places for the self-employed of all races. Instead, they find that variation in self-employment and earnings is positively linked to minority-specific measures of economic scale—the purchasing power that minorities bring to the metropolitan-area market. This result is robust to a variety of specifications and controls for various alternative MSA attributes that might otherwise account for the finding, including minority and white MSA unemployment rates and the degree of MSA minority segregation. Their work provides support for the idea that the economic scale of the minority market affects the ability of metropolitan areas to sustain minority entrepreneurs. Moreover, the authors argue that this conclusion "is consistent with models of self-employment in which consumer discrimination against minority entrepreneurs dampens minority self-employment opportunities" (2001, p. 270). Their findings also appear to be consistent with a model where discrimination comes from other sources including the banks or even trade unions (see Ashenfelter, 1972).

The likelihood is that both spatial variation in self-employment and the return to self-employment among minorities will be impacted by the existence of affirmative action programs run by most large local municipalities—examples are San Francisco, New York, Chicago, Baltimore, St. Louis and Jacksonville, Florida. There is a growing body of evidence that does exist that the affirmative action programs that have been introduced in the US to counter discrimination against minorities and women-owned business enterprises (MWBEs) espe-

cially in US construction do have large micro-economic effects. These programs fall into two types a) Federal Disadvantaged Business Enterprise (DBE) Program which sets a goal of 10 percent of spending to DBEs for entities that take federal dollars b) city, state and local governments own programs. Blanchflower and Wainwright (2004) provide evidence from a series of natural experiments that show that once the programs are removed—which often occurs by court injunction following the Supreme Court's finding in the case of Croson vs, City of Richmond in 1989—utilization of MWBEs drops precipitously.[2] These programs appear to be effective in countering the effects of discrimination against MWBEs; there is no evidence that they have any impact on macroeconomic performance.

There is considerable variation in the self-employment rate of *immigrants* who one might assume would find it especially hard to obtain capital from the banks without a preexisting credit rating. Blanchflower and Wainwright took the significant country dummies from Table 3b, translated them into percentage differences by taking antilogs and deducting one, because the dependent variable is in logs. Their findings are presented in Table 6—they are all in comparison to the United States. Countries with coefficients that are not significantly different from the US are not reported. Individuals from Syria, Greece, Israel and Lebanon have high self-employment rates; those from Laos, Mexico, the Philippines and Guatemala have low rates.

Lofstrom (2002) uses data from the 1980 and 1990 US Censuses to study labor market assimilation of self-employed immigrants. Separate earnings functions for the self-employed and wage/salary work-

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[2] In a series of recent court decisions where I was the defendant's expert the constitutionality of the federal DBE program has been upheld both at the level of the district court and the 8th Circuit Court of Appeals (Sherbrooke Turf vs, State of Minnesota DOT; Gross Seed vs. State of Nebraska DOT). Following Croson there were many lower court decisions in the 1990's which declared state and local programs to be unconstitutional. A recent decision by the 10th Circuit Court of Appeals in the case of Concrete Works of Colorado Inc. vs. City of Denver, where I was also a testifying expert for the defendant, overturned the District Court's ruling that the program was unconstitutional. The Appeals Court decisions in all three of these cases were appealed to the US Supreme Court which refused to grant writs of certiorari thereby upholding the appeals court decisions. Unusually, in the Concrete Works case Justice Antonin Scalia and Chief Justice William Rehnquist issued a dissenting opinion which is available at: www.supremecourtus.gov/opinions/03relatingtoorders.html These important decisions suggest such programs may get a new lease of life.

ers are estimated. Self-employed immigrants were found to do substantially better in the labor market than wage/salary immigrants. Earnings of self-employed immigrants re predicted to converge with natives' wage/salary earnings at about age 30 and natives' self-employed earnings at about age 40. Including the self-employed in the sample reduces the immigrant-native earnings gap by, on average, 14 percent. Bates (1999) argues that self-employment is often a form of underemployment among Asian immigrants. Crowding of Asian immigrants into traditional fields such as small-scale retailing, Bates argues, has often been interpreted as evidence of success and/or expanding. In light of the low returns earned by Asian immigrants in traditional businesses and the observed outflow from these fields over time, Bates argues that such crowding is rooted in "blocked-mobility considerations" (1999 p. 181).

Table 6. Self-employment rates of immigrants, USA (in percent)

Syria	9.3	Ethiopia	2.3	Other	0.7
Greece	6.0	Palestine	2.1	Russia	-0.5
Israel	5.6	Malaysia	2.0	Vietnam	-0.5
Lebanon	5.1	Turkey	2.0	Puerto Rico	-0.6
Bermuda	4.8	Asia	2.0	Nicaragua	-0.6
Uruguay	4.6	Belgium	1.7	Haiti	-0.6
Grenada	4.1	Pakistan	1.7	Guyana	-0.7
North Africa	3.5	South America	1.7	El Salvador	-0.8
Kenya	3.4	Brazil	1.5	Cambodia	-0.9
Iraq	3.2	Africa	1.5	Honduras	-0.9
South Korea	3.0	Europe	1.4	Mexico	-1.0
Nigeria	2.9	Austria	1.3	Laos	-1.1
Philippines	2.8	India	1.0	Guatemala	-1.1
Taiwan	2.8	Portugal	0.9	Caribbean	-1.1
South Africa	2.6	Canada	0.9	Philippines	-1.2
Italy	2.5	Cuba	0.9	Pacific Islands	-1.4
Iran	2.5	France	0.7		
Argentina	2.3	England	0.3		

Source: Blanchflower and Wainwright (2004).

Individuals emigrating to the US from most member countries of both the EU and the OECD have higher self-employment rates than the US born. The main exceptions are Australia, Germany, Denmark, Finland, France, Ireland, Japan, Luxembourg, Norway, Sweden, Switzerland. Mexico has a significantly lower self-employment rate.

There is a literature in the US explaining differences between the African-American and white self-employment see for example Fairlie (1999), Bates (1989), Fairlie and Meyer (1998, 2004). There is also a literature suggesting that there are considerable differences in self-employment rates of immigrants based on their country of origin. Yuengert (1995) finds that immigrants to the USA from countries with higher self-employment rates are more likely to enter self-employment. In a follow-up analysis though Fairlie and Meyer (1996) found that this effect was not statistically significant. Also, he finds that immigrants are more concentrated in high tax states where self-employment with its greater opportunities for tax avoidance is more prevalent. In contrast to claims made in Borjas (1986), Yuengert finds no evidence that self-employment rates are higher in cities with higher concentrations of immigrants.

Clark and Drinkwater (2000) in their study of self-employment among ethnic minorities in England and Wales found that ethnic minorities who live in areas which have a high percentage of their own group are *less* likely to be self-employed. They found that those with poor language skills and more recent immigrants had lower self-employment probabilities. Borooah and Hart (1999) used data from the British 1991 Census to examine why so many Indians, but so few black Caribbeans, in Britain are self-employed? Over 20 percent of economically active Indian males, but only 8 percent of economically active black Caribbean males, were self-employed. The reluctance of black men to become self-employed was, as this study suggested, due to two factors. First, they were, relative to whites and Indians, "ethnically disinclined" to enter business—this stunted their desire to be self-employed. Second, they did not possess, relative to whites and Indians, the attributes that were positively related to entering business—this impaired their ability to be self-employed. The authors estimated that 58 percent of the observed lack (relative to Indians) of self-employed black males was due to ethnic disinclination and 42 percent was due to attribute disadvantage. Of course this result begs the question of why Caribbean men were disinclined to be self-employed. Clark and Drinkwater (2000) also reported that, based on the 1991 Census of Population, self-employment rates for blacks in England and Wales were 5.8 percent compared with 26.6 percent for

Chinese and 12.3 percent for whites and 14.6 percent for non-whites.[3] In contrast, in a study for Australia Kidd (1993) found that self-employment rates of the Australian born sample was 21.3 percent compared with 19.9 percent for migrants. Migrant self-employment rates were higher for individuals from non-English speaking (NES) countries (22.0 percent) than from English speaking (ES) countries (17.2 percent).

In a recent paper Andersson and Wadensjö, (2004) examined how self-employed immigrants had assimilated in Denmark and Sweden. They reported that immigrants self-employment rates in both countries were above those of the indigenous populations. In 1999, according to the authors, 4.1 percent of Swedish workers are self-employed compared to 6.4 percent in Denmark. These numbers are well below the OECD numbers reported in Table 1a of 9.5 percent and 8.3 percent respectively, for which I have no explanation. The self-employed in both Sweden and Denmark are concentrated in construction (9.2 percent and 9.9 percent respectively); retailing (12.7 percent and 18.1 percent) and real estate and rental services (12.9 percent and 16.4 percent). Holding constant a variety of characteristics including schooling, age and gender Andersson and Wadensjö find that non-Western immigrants in both Denmark and Sweden are over-represented among the self-employed. They also found self-employed immigrants had lower incomes than immigrant employees. The differences are large, especially in Sweden. They concluded that immigrants in the two countries were becoming self-employed because they had difficulties obtaining wage employment.

3. "Who wants to be self-employed"

It is sometimes argued that nations differ in their underlying entrepreneurial spirit. The United States, in particular, is often singled out as a country with an inherently large number of people who are keen to start firms. Europe, it is sometimes asserted, lacks entrepreneurial individuals. While some politicians argue that Eastern Europe is in particular need of people who wish to run their own businesses, there is especially little information about the potential supply of entrepreneurs in that region of the world. Few economists have attempted to

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[3] Using data from the Fourth National Survey of Ethnic Minorities conducted in 1993/4 Clark and Drinkwater (2000) found self-employment rates to be especially high, among both men and women, for Pakistanis, Indians and African Asians.

measure entrepreneurial spirit across countries. In Blanchflower, Oswald and Stutzer (2001) we created an international league table of what might be thought of as the simplest measure of entrepreneurial drive. The paper measured entrepreneurial spirit by using the question: *"Suppose you were working and could choose between different kinds of jobs. Which would you prefer: being an employee or being self-employed?"*

It is possible to think of many objections to this wording (from an economist's point of view it is vague on the constraints under which people are assumed to make their hypothetical choice), but it has the merit of simplicity. Moreover, because the wording is chosen deliberately to be consistent across countries, and our concern is to produce international comparisons, some of the question's drawbacks are reduced. If there are biases in the question's wording, those biases may be similar across nations and thus still give useful cross-country information. The question was asked in an International Social Survey Programme data set. Information on more than twenty countries is available over a period spanning 1997 and 1998. For the analysis reported here, the sample size is approximately 25,000 individuals across 23 nations. Blanchflower (2000) and OECD (2000) look at related international self-employment statistics for OECD countries. But information on self-employment preferences in the 1990's has until now been sparse.

Table 7 contains the mean responses by country. To fix ideas, it is clear that an economist would not expect to find a large proportion of people answering in favor of self-employment. The vast majority of workers (almost nine out of ten, in most nations) in the industrial countries are conventional employees: they draw a pay check from a firm that someone else began. There is one small exception. In heavily agricultural sectors, and nations, the numbers of self-employed individuals tend to be higher; but the western democracies now have only tiny percentages of their population in agriculture. Moreover, the western nations have sophisticated banking systems, stock markets, and networks of venture capitalists. On the face of it there are many opportunities to borrow to back a good idea for a business start-up. At the turn of the 21st century, therefore, an economist would not expect many of those who covet a chance to be self-employed to be thwarted in that wish. However, the patterns in the answers are not what would have been predicted. There are apparently many frustrated entrepreneurs.

Table 7. Latent entrepreneurship: An international league table

Suppose you were working and could choose between different kinds of jobs. Which would you prefer: being an employee or being self-employed?

	% who would prefer to be self-employed	N
Bulgaria	55.4	900
Canada	57.5	857
Czech Republic	36.8	961
Denmark	29.7	992
East Germany	56.6	389
France	41.8	918
Great Britain	45.1	953
Hungary	49.8	1,419
Israel	49.7	972
Italy	63.3	973
Japan	40.9	1,065
Netherlands	36.0	2,013
New Zealand	64.2	1,046
Norway	26.9	2,021
Poland	79.9	922
PORTUGAL	73.3	1,616
Russia	33.2	1,409
Slovenia	57.8	820
Spain	38.9	1,138
Sweden	38.8	1,129
Switzerland	64.5	2,216
USA	70.8	1,071
West Germany	64.0	957

Notes. N is the number of people interviewed in each nation. A sample of the whole adult population is interviewed. The Israel sample is for Israeli Jews only. Data for Cyprus, Bangladesh and Philippines are omitted.
Source: 1997/8 ISSP Module on Work Orientations. Blanchflower, Oswald and Stutzer (2001).

First, Table 7 reveals that there is a strikingly large latent desire to be in charge of one's own business. Even in countries at the bottom of the table, a quarter of the population say they would prefer to be self-employed. This compares to an actual proportion of self-employed people in most countries of around 10-15 percent of the labor force. It is interesting to wonder why so few individuals manage

to translate their preferences into action. Lack of start-up capital may be one explanation, and we return to that possibility later.

Objections are certainly possible. These subjects are asked a hypothetical question, in an unrealistic setting, and their answers may therefore be unrepresentative of the truth in a practical or implementable sense. The harshest of critics might argue that one could imagine a question "if you were working and could choose between different kinds of jobs, would you prefer to be in your current job or be a top soccer player?" and that the answers to this might also be highly positive and yet not tell us very much except that people would like to earn as much as David Beckham. There is probably something to this criticism. Nevertheless, our aim is to capture the inherent level of entrepreneurial interest, not merely the level that is currently converted into activity. It would be extreme to view these survey answers as containing no useful food for thought. Moreover, while winning Wimbledon is beyond the scope of almost anyone, it is not clear that the same can be said of being self-employed. Almost anyone could be self-employed if they wished (perhaps on a low income); that is not true of the tennis question. And as the same question is asked everywhere, the relative responses should be meaningful.

The most compelling case, however, emerges from the structure of the answers. The numbers in Table 7 are so large, and information in the area sufficiently sparse, that we think it unwise to disregard answers of this type. In the late 1990's, in these countries, the data suggest that there is considerable interest in the idea of being self-employed. Second, and intriguingly, there is marked variation by nation. The proportions of people who favor self-employment vary from 80 percent to less than 30 percent. Poland, Portugal and the USA top the league table. It appears that approximately three-quarters of these nations' citizens would like to manage their own business rather than work for a company as a regular employee. These proportions seem extraordinarily large, but we simply report them. Bottom of the league table of latent entrepreneurship come Russia, Denmark and Norway; Sweden is close to the bottom of the rankings. In these nations, roughly 30 percent of citizens say they are interested in being self-employed. Three developing countries are in the data set but, because of their reliance on agriculture, we choose not to include the numbers. They are Bangladesh, Cyprus and the Philippines. Self-employment and expressed desire for it are both high in the three countries, but we are not confident that it is possible to make valid

comparisons with the more heavily industrial nations in the rest of the sample.

Table 8 contains information that would have been less easily anticipated. It estimates for men and women, from a sample of employees, the probability of an individual saying they would prefer to be self-employed rather than work for somebody else. First, age now enters Table 8's probit equation strongly negatively. In other words it has the opposite sign from that for age in the being-self-employed equation of Tables 3a for the EU and Table 3b for the USA. This means that, despite the fact that older people are more likely to be self-employed, it is younger people who say they would prefer to be self-employed. A potential explanation is a kind of dynamic one. As they age, people simply flow into self-employment. Hence those who say when young that this is their aim gradually achieve that aim. But this cannot account for the much larger numbers asserting that self-employment is desirable relative to the small numbers who end up as self-employed. Second, the structure of the country dummies is not identical to that for actual self-employment in the previous table. As in the raw cross-tabulations of Table 7, Denmark and Norway are low in the implied dummy-variable ranking of Table 8, Poland and Portugal are again high: Sweden and Russia are also low. The notable feature is the contrast between age in Table 7 and in Tables 3a and 3b. Huge numbers of young workers in these industrial countries would prefer self-employment (or at least claim that they would). We know this from the fact that for the young the average numbers in Table 8 are an understatement—as they are for the full sample and the age coefficient in the regression is negative—of the amount of desire to be entrepreneurial.

Our results cannot be definitive because they rely on what people say they want. Yet they seem suggestive—leaving it natural to think that in these nations there may be a currently unexploited supply of entrepreneurial individuals. Young people are apparently particularly constrained to be workers rather than run their own businesses. If age entered with a zero coefficient in Table 8, we could conclude that entrepreneurship choice was unconstrained by a person's age. A zero would signify that older workers preferred self-employment neither more nor less than the young. But that is not what the data show. As a person becomes older it becomes easier to break into entrepreneurship.

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Table 8. Probability of preferring to be self-employed (probit equation)

	All	Male	Female
Age	-.0041	-.0043	-.0039
	(9.72)	(7.62)	(6.06)
Male	.1321	n/a	n/a
	(13.16)		
Part-time main job	.0204	.0620	.0150
	(1.36)	(2.12)	(0.84)
Less than part-time	.0619	.1102	.0307
	(2.03)	(2.21)	(0.80)
Years schooling	.0023	.0038	-.0001
	(1.52)	(1.93)	(0.09)
Bulgaria	.0172	-.0456	.0903
	(0.49)	(0.95)	(1.73)
Canada	-.0379	-.1214	.0525
	(1.08)	(2.51)	(1.02)
Czech Republic	-.1826	-.2106	-.1446
	(5.50)	(4.69)	(2.95)
Denmark	-.3353	-.3640	-.2920
	(11.33)	(8.74)	(7.00)
East Germany	-.0252	-.0319	-.0123
	(0.56)	(0.54)	(0.18)
France	-.1697	-.1876	-.1349
	(5.46)	(4.32)	(3.03)
Great Britain	-.1536	-.1588	-.1303
	(4.58)	(3.34)	(2.76)
Hungary	-.0374	-.0814	.0202
	(1.17)	(1.90)	(0.43)
Israel - Arabs	-.0165	-.1020	.1639
	(0.32)	(1.67)	(1.67)
Israel - Jews	-.1015	-.1086	-.0861
	(2.82)	(2.21)	(1.64)
Italy	.0210	-.0314	.1002
	(0.56)	(0.67)	(1.64)
Japan	-.1683	-.2029	-.1221
	(5.00)	(4.55)	(2.40)
New Zealand	.0478	.0663	.0356
	(1.11)	(1.13)	(0.57)
Norway	-.3329	-.3330	-.3215
	(12.55)	(9.13)	(8.48)

Table 8. Continued….

	All	**Male**	**Female**
Poland	.2363	.1637	.3148
	(6.20)	(3.13)	(5.63)
Portugal	.1936	.1324	-.2589
	(6.11)	(3.12)	(5.42)
Russia	-.2134	-.2668	-.1477
	(7.11)	(6.59)	(3.31)
Slovenia	.0120	-.0757	.1137
	(0.34)	(1.59)	(2.14)
Sweden	-.2035	-.2235	-.1691
	(6.61)	(5.26)	(3.81)
Switzerland	.0482	.0097	.0955
	(1.74)	(0.27)	(2.22)
USA	.1390	.1119	.1759
	(4.46)	(2.58)	(3.83)
N	11,988	6,359	5,629
Chi^2	1673.8	676.2	858.5
Log likelihood	-7472.5	-4023.49	-3421.98
Pseudo R^2	0.1007	0.0775	0.1115

Notes: Dummies were included but are not reported for Bangladesh, Philippines and Cyprus. Excluded category West Germany. The dependent variable is 1 if wants to be self-employed and zero if would prefer to be an employee. T-statistics are in parentheses. Sample consists of employees only.
Source: 1997/8 ISSP Module on Work Orientations / General Social Survey. Blanchflower et al. (2001).

4. Are people simply mistaken to prefer the idea of self-employment?

Some economists might reason in the following way. One possible explanation for the high numbers in Tables 7 and 8 is that people are simply mistaken. Perhaps they have an unrealistically rosy view of what it is like to be running one's own business rather than have the comparative security of being an employee. One reason economists are often wary of subjective data is because people are sometimes thought to be unable to judge what will be in their own interest.[4]

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[4] Bruno Frey in private communication suggested that people do make mistakes and are not always able to judge how much utility will be produced by goods and activities in the future. But, he points out, such a view is inconsistent with traditional economics. In strict neo-classics, people may make mistakes but correct them very quickly, so that in equilibrium one can assume that people maximize their util-

But Table 9 provides counter evidence. It shows, using the General Social Surveys (GSS) for the USA from 1972-2002 along with a recent sweep of the Eurobarometer Surveys (EBS) No. 54.2, January-February, 2001 (ICPSR No. 3211), that feelings of job satisfaction are higher among the self-employed. Both surveys use somewhat different responses to a similar question on job satisfaction. In the GSS respondents were asked "On the whole, how satisfied are you with the work you do--would you say you are very satisfied, moderately satisfied, a little dissatisfied, or very dissatisfied?" and the distribution of responses for employees and the self-employed are reported in part A of Table 10: 45.9 percent of employees reported being "very satisfied" with their job compared with 62.5 percent of the self-employed.

In all but three countries—Austria, Greece and Finland—the self-employed report higher levels of job satisfaction than employees. Note also that there are differences and similarities in the pattern of the coefficients in the first two equations in Table 9—in the US women are more satisfied than men but in Europe there is no gender difference. As we shall see below there is evidence from an earlier EBS sweep of a similar result to the US with women more satisfied than men. Both in the US and Europe, workers with higher levels of schooling are *more* satisfied. Job satisfaction is U-shaped in the USA in age reaching a maximum at age 61 but rises linearly with age in Europe; the age squared term was never significant and hence was omitted. Note that in the US blacks and other races are less happy at work than whites: the negative time trend implies that job satisfaction in the US has been declining over time (See Blanchflower and Oswald, 1999, on this). Blacks are also found to be less happy with their lives in general (see Blanchflower and Oswald, 2004a,b). An obvious interpretation for such a finding is discrimination.

ity. One of the fundamental premises of neoclassical economics, of course, is that people know well what they want and this underlies the whole neo-classical welfare economics. See Frey and Stutzer (2003) for more on this.

Table 9. Job satisfaction and satisfaction with pay, security, type of work, hours and travel time

	(1) Job USA	(2) Job Europe	(3) Pay Europe	(4) Security Europe	(5) Type of work Europe	(6) Hours Europe	(7) Travel time Europe
Self-employed	.5242 (13.48)	.3870 (6.71)	.1531 (2.65)	.0116 (0.20)	.4302 (7.49)	-.4024 (6.95)	.5973 (10.19)
Time	-.0093 (6.27)						
Years of schooling	.0404 (8.95)	.0317 (6.54)	.0254 (5.18)	.0295 (5.97)	.0407 (8.32)	.0096 (1.96)	-.0071 (1.43)
Male	-.0739 (2.99)	-.0043 (0.12)	.1517 (3.74)	-.0980 (2.41)	-.0637 (1.57)	-.2670 (6.57)	-.2880 (6.98)
Age	.0123 (2.12)		.0009 (0.54)	.0047 (2.67)	.0058 (3.31)	.0046 (2.68)	.0055 (3.10)
Age²	.0001 (2.18)						
Black	-.4218 (11.37)						
Other races	-.1858 (2.77)						
Austria		.1584 (1.44)	.3027 (2.71)	.4573 (4.10)	.2194 (1.99)	.2236 (2.04)	.3528 (3.17)
Denmark		.2391 (2.18)	-.0362 (0.33)	.4773 (4.31)	.4107 (3.69)	.4199 (3.79)	.5045 (4.44)
East Germany		-.0830 (0.71)	-.4804 (4.09)	-.6298 (5.41)	.0199 (0.17)	-.4095 (3.56)	-.1682 (1.45)
Eire		-.0662 (0.59)	-.0306 (0.27)	.0481 (0.43)	.0224 (0.20)	-.0729 (0.65)	-.2801 (2.43)
Finland		-.2898 (2.52)	-.3516 (2.98)	.0300 (0.25)	-.4636 (3.99)	-.1076 (0.92)	.2214 (1.85)
France		-.4529 (4.17)	-.5291 (4.88)	-.3907 (3.56)	-.4760 (4.36)	-.6496 (6.06)	-.2395 (2.21)
Great Britain		-.4489 (4.01)	-.4070 (3.62)	-.2228 (2.00)	-.3244 (2.90)	-.1860 (1.70)	-.1827 (1.64)
Greece		-1.2687 (10.45)	-.9185 (7.58)	-1.0493 (8.68)	-1.0324 (8.33)	-.9228 (7.64)	-.9236 (7.65)
Italy		-.6997 (6.26)	-.5335 (4.75)	-.4249 (3.80)	-.6137 (5.48)	-.5530 (5.02)	-.4631 (4.07)
Luxembourg		-.0368 (0.27)	.0495 (0.38)	.2333 (1.76)	.0430 (0.32)	.1470 (1.12)	-.0983 (0.73)
Netherlands		-.3064 (2.81)	-.0184 (0.17)	.0405 (0.37)	-.2894 (2.67)	-.1483 (1.38)	-.2365 (2.14)
Northern Ireland		-.1424 (0.81)	-.4227 (2.43)	.0360 (0.20)	-.0129 (0.07)	-.0543 (0.31)	.1187 (0.69)
Portugal		-.9744 (8.61)	-.9355 (8.23)	-.6167 (5.52)	-.8398 (7.40)	-.9028 (8.14)	-.9311 (8.27)
Spain		-.5855 (5.02)	-.7314 (6.28)	-.4500 (3.94)	-.7079 (6.15)	-1.0451 (9.11)	-.8626 (7.50)

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Table 9. Continued....

	(1) Job USA	(2) Job Europe	(3) Pay Europe	(4) Security Europe	(5) Type of work Europe	(6) Hours Europe	(7) Travel time Europe
Sweden		-.1574 (1.43)	-.9612 (8.46)	.0864 (0.78)	.0796 (0.72)	-.3597 (3.23)	.4571 (3.98)
West Germany		.1493 (1.28)	.1008 (0.88)	.3358 (2.91)	.1364 (1.19)	-.0255 (0.22)	-.0117 (0.10)
Cut_1	-2.2303	-3.4495	-2.9144	-2.8054	-3.3185	-3.8147	-3.8531
Cut_2	-.79220	-2.9249	-2.1991	-2.302	-2.6619	-3.0992	-3.2146
Cut_3	1.2277	-2.2557	-1.5899	-1.6651	-2.0702	-2.4560	-2.6894
Cut_4		-1.8197	-1.0823	-1.2292	-1.6393	-1.9545	-2.2663
Cut_5		-1.0600	-.3735	-.5862	-.9195	-1.3152	-1.6685
Cut_6		-.5312	.1724	-.1356	-.3720	-.8386	-1.2374
Cut_7		.2633	.8904	.4545	.3550	-.1586	-.7099
Cut_8		1.3587	1.9210	1.3264	1.3831	.7450	.0042
Cut_9		2.1477	2.7630	2.1028	2.2246	1.4824	.7001
N	24,676	7,779	7,765	7,730	7,779	7,773	7,748
Likelihood ratio	-25688.5	15373.8	-16722.9	-16100.7	-15106.5	-16167.9	-15080.4
LR Chi²	1239.51	492.6	433.7	518.6	563.3	578.0	560.2
Pseudo R²	.0236	.0158	.0128	.0159	.0183	.0176	.0183

Notes: US equations also include 8 region dummies. Europe equations excluded category Belgium. All equations include 11 industry dummies and 8 "ever been unemployed?" dummies. * = dprobit

Source: General Social Surveys, 1972-2002. Eurobarometer No. 54.2, January-February, 2001—ICPSR No. 3211In the EBS survey respondents were asked "on the whole, how satisfied are you with your current job or business? Please use the following scale from 1 to 10, where "1" means that you are not at all satisfied and "10" means that you are totally satisfied". The average scores by country for employees and the self-employed are reported in part B of Table 10. The EU weighted average score for employees was 7.18 and 7.48 for the self-employed.

Table 10. Job satisfaction responses, USA and Europe

a) USA—General Social Survey, 1972-2002 (in percent)

	Employees	Self-employed
Very dissatisfied	3.8	2.0
A little dissatisfied	10.3	5.8
Moderately satisfied	39.9	29.8
Very satisfied	45.9	62.5

b) Europe—Eurobarometer Surveys (EBS) No. 54.2, January-February, 2001 (ICPSR No. 3211)

	Employees	Self-employed
Austria	7.75	7.58
Belgium	7.66	7.94
Denmark	8.03	8.60
East Germany	7.37	8.77
Finland	7.49	7.47
France	7.15	7.33
Great Britain	6.92	8.04
Greece	6.65	5.68
Ireland	7.51	7.82
Italy	6.90	7.35
Netherlands	7.41	7.72
Northern Ireland	7.37	8.25
Portugal	6.47	6.87
Spain	6.88	7.53
Sweden	7.38	8.43
West Germany	7.69	8.24
EU weighted average	7.18	7.48

In Blanchflower and Oswald (1999) a range of job characteristics were introduced in a series of job satisfaction equations using other EBS data files.[5] Workers like to work independently and in work-places with high pay and good chances of advancement. They also like to "help people" and to work in healthy rather than unhealthy conditions. The result that people enjoy independence is well known to psychology researchers. It is sometimes referred to as an example of the "locus of control" hypothesis. Spector et al. (2001) is a recent paper looking at a similarly large range of nations. Having a secure job

[5] See also Blanchflower and Oswald (2000).

increases job satisfaction: the easier it is to find a similar job the higher is satisfaction. We also found evidence for the positive impact of job security on job satisfaction in the US. Evidence was also found in that paper that job satisfaction is greater in quiet workplaces, ones with no gaseous vapors, ones where workers say "no painful or tiring positions", where employees control the equipment, their work pace, where they do not have to carry move loads or work at high speed. Working at home appears to be associated with raised satisfaction for women but not men. The ability to control the temperature and ventilation is correlated with satisfaction. Employees who identify a health and safety risk at their workplace are much more likely to say they are dissatisfied. Unsurprisingly, women appear to value equal opportunities at work. We found no significant evidence that the gender of one's boss has an effect on job satisfaction for either men or women. Even when all these job characteristics were controlled for, the self-employed still reported higher levels of job satisfaction than the employed.

Table 9 also provides recent evidence from Europe on other aspects of the work environment.[6] In the final five columns of the table men were less satisfied than women and satisfaction increased with age and years of schooling. The pattern of the country coefficients is similar across columns 2-7 with Greece having the largest negative coefficient in all columns and Denmark the largest positive in all cases except in relation to pay. In comparison with employees, the self-employed in Europe were not only more satisfied with their jobs but they were also more satisfied with their pay (column 3), the type of work they do (column 5), and the time they spend traveling to work. They were less satisfied with their hours of work—which are well known to be longer than those of employees. Average hours for the self-employed and employees are available on a consistent basis in the 1999 ISSP. Only in Russia and Chile do the self-employed work less hours than employees. Details by country are provided in the data appendix. There was no difference between employees and the self-employed in their views on job security. This contrasts with the findings of Manski and Straub (2000) for the US who found that self-

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[6] Workers were asked to use the same scale as discussed above for job satisfaction in response to each of the following questions. 1) And how satisfied are you with your current job or business in terms of earnings? 2) And in terms of job security? 3) And in terms of the type of work you do? 4) And in terms of the number of hours you work? 5) And in terms of the time it takes to travel to work?

employed workers in the US see themselves as facing *less* job insecurity than do those who work for others.[7] Consistent with Manski and Straub's findings, in Blanchflower and Oswald (1999) using data from the 1972-1996 General Social Surveys we found that the self-employed were *less* likely than employees to think that they would lose their job in the next 12 months and *more* likely to say it would be easy for them to find a job with another employer with approximately the same income and fringe benefits they currently had.[8] Similar results were found when I extended the analysis to 2002 using the most recent dataset available.[9]

The finding that the self-employed report higher levels of job satisfaction than employees is a rather robust finding across the nations on which data are available. This result has been known for a long time in the psychology literature, see, for example, Eden (1992), Katz (1993) and Weaver and Franz (1992) but is less known in economics. Recent examples in economics are Blanchflower and Oswald (1998, 1999), Blanchflower (2000), Frey and Benz (2002), Benz and Frey (2003), Hundley (2001). In an important paper Frey and Benz (2002) examine job satisfaction data for the UK, Germany and Switzerland and also find evidence that the self-employed are more satisfied at work than employees. What is impressive about this paper is that the authors have panel data over a number of years on the same individuals for both the UK (1991-1999) and Germany (1984-2000) and show that this result remains even in the presence of people specific fixed

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[7] For other work on job security in the United States, that also used the General Social Surveys but does not explicitly identify the self-employed, see Schmidt (1999).

[8] The exact wording of the questions in the GSS was as follows Q180A—"Thinking about the next 12 months, how likely do you think it is that you will lose your job or be laid off—very likely, fairly likely, not too likely, or not at all likely?" Q180B "About how easy would it be for you to find a job with another employer with approximately the same income and fringe benefits you now have? Would you say very easy, somewhat easy, or not easy at all?"

[9] For both variables ordered logit equations were estimated for the years 1972-2002 using the GSS. In the former case relating to the probability of losing a job, the controls were time, male, age(-), black(+), Other races (+), years of education (-) where (-)= significant and negative (+)=significant and positive. Sample size was 13,532. The self-employment dummy had a coefficient of -.7446 and a t-statistic of 12.08. In the second equation modeling the probability of finding a job the same list of controls were included: time(+) male(-) age(-) black(-) other race, years of education(+). Sample size=13,444. The self-employment dummy in the job finding equation had a coefficient of +.5055 and a t-statistic of 10.08.

effects (their Table 2). Frey and Benz also provide evidence from a "natural experiment" in East Germany: people who moved into self-employment after the fall of the Berlin Wall in 1989 saw a large and highly significant jump in their levels of job satisfaction compared to those experienced by East Germans who worked as employees before and after 1989. These "fixed effects" and "natural experiment" results are especially convincing that there is something real going on and the results are not simply being driven by selection. The paper is important as it the direction of causality - self-employment makes people happy, it is not the reverse direction of causality that it is happy people who decide to become self-employed.

Benz and Frey (2003) examined data on 23 countries from the International Social Survey Programme (ISSP) conducted in 1997 and also used by Blanchflower, Oswald and Stutzer (2001). Benz and Frey conclude that the self-employed are more satisfied with their jobs because they enjoy "greater autonomy and independence". In a recent paper Hundley (2001) provides results for the US which, are similar to those of Frey and Benz. His main findings are that the self-employed are more satisfied because their work provides more autonomy, flexibility and skill utilization and greater job security. However, our evidence is not consistent with his finding for the US that the self-employed are more secure in their jobs than the employed. He concluded that "a sizable portion of the difference in job satisfaction between the self- and organizationally employed is attributable to factors related to the independence of the self-employed from the routines and constraints of organizational life", (p311, 2001). As we will show below, this greater autonomy and flexibility comes at a cost: self-employment is very stressful on both the individual and his family: the self-employed come home tired and exhausted from their labors.

For the first time I am aware of it is possible to distinguish between the satisfaction levels of the most successful self-employed who have one or more employees and self-employed without any employed[10]. Both groups are unique in that they have created jobs for themselves but the former group are especially interesting as they have created jobs for others—they are the *job makers* in our econo-

[10] Surprisingly there is little if any published literature on job makers. One exception is Fölster (2000) who looks at the link between self-employment and employment using Swedish panel data on counties. He finds support for the notion that increased self-employment has a positive effect on employment.

mies. The process by which, jobs are created and by which firms are born is little understood and an obvious area for study. Both of these groups of self-employed are more satisfied with their jobs than are employees: the effect is greater for those with employees than for those without. Data are available from a Eurobarometer Survey No. 44.3OVR, February-April 1996—ICPSR No. 2443 that allow us to identify employees as well as the self-employed with and without employees. Results are reported in Table 11. On average in the EU the self-employed with employees report higher levels of job satisfaction than do the self-employed without employees; both groups have higher levels of satisfaction than employees. Exceptions to this general rule are found in Greece and Luxembourg where employees are the most satisfied and in Germany and Sweden where the self-employed with no employees have the highest satisfaction.

Table 11. Job satisfaction of the self-employed with and without employees

	Self-employed with employees	Self-employed no employees	Employees
Austria	5.38	5.20	5.34
Belgium	5.53	5.21	5.18
Denmark	6.10	6.14	5.51
East Germany	5.60	5.28	5.14
Eire	5.11	5.27	4.79
Finland	6.24	5.71	5.25
France	5.40	4.94	4.77
Great Britain	5.56	5.25	4.94
Greece	4.58	4.46	4.87
Italy	5.54	5.06	4.71
Luxembourg	5.24	5.80	5.17
Netherlands	6.17	6.14	5.51
Northern Ireland	5.60	5.25	4.94
Portugal	4.85	4.81	4.82
Spain	5.76	5.25	4.92
Sweden	5.39	5.74	5.24
West Germany	6.06	6.10	5.18
EU Weighted average	5.55	5.20	5.02

Source: Eurobarometer Survey No. 44.3OVR, February-April 1996—ICPSR No. 2443.

Table 12. Satisfaction Ordered Logit Equations, 1995-1996

	Self-employed with employees	Self-employed with no employees
Job	.5428	.3679
	(5.69)	(4.88)
Pay	.3236	-.1442
	(3.49)	(1.97)
Abilities	.7308	.4620
	(7.65)	(6.19)
Initiative	1.3520	1.2140
	(13.85)	(15.71)
Hours	-.2640	-.1814
	(2.86)	(2.46)
Amount of work	.0468	-.1513
	(0.51)	(2.03)
Variety	.5313	.2598
	(5.77)	(3.53)
Job security	.1089	-.4060
	(1.17)	(5.54)
Stressful	.6500	.0993
	(6.82)	(1.29)
Exhausted	.5497	.1374
	(5.83)	(1.74)
Limits family time	.7626	.4371
	(7.98)	(5.51)
Tired	.6637	.1375
	(7.12)	(1.79)
Fed up	.7260	.2361
	(7.45)	(2.89)
Lose sleep	.4194	.1580
	(4.30)	(2.04)
Unhappy & depressed	.2106	.0304
	(2.12)	(0.38)
Losing confidence	-.2155	.1075
	(1.82)	(1.22)
Not overcome difficulties	.1408	.1868
	(1.37)	(2.30)
Constantly under strain	.4035	.1567
	(4.23)	(2.02)

Table 12. Continued….

	Self-employed with employees	Self-employed with no employees
Worthless person	-.0581	.0958
	(0.44)	(0.95)
Pressure*	.1429	-.0081
	(5.41)	(0.38)

Notes: Excluded category Belgium. All equations include 11 industry dummies and 8 "ever been unemployed?" dummies, years of schooling, private sector dummy, union member dummy, years of tenure, male, age and age squared plus a full set of country dummies. T-statistics in parentheses. * probit.
 Source: Eurobarometer 44.3OVR, February-April 1996—ICPSR No. 2443.

   Table 12 presents evidence on twenty different aspects of an individual's work environment. Each row of the table represents the results of a different ordered logit regression with a sample size of around 7,000. The one exception is the "pressure" variable which was estimated as a probit as the response was coded "yes" or "no: sample size was also approximately 7000. Details of the questions asked are reported in Appendix 2.[11] Each of the equations include controls for years of schooling, union membership, years of tenure, age, gender and private sector as well as controls for the two types of self-employment. The findings from these equations are as follows:

* In comparison with employees the self-employed with employees are especially likely to report that they are satisfied with their job, their pay, using their abilities, being able to take initiative, the variety of work.

* In comparison with employees the self-employed with employees are especially likely to report that they are *less* satisfied with the hours they have to work.

* In comparison with employees the self-employed with employees are especially likely to report that they find their work stressful; they come home from work exhausted; that their job limits their family time; that they felt too tired after work to enjoy the things

[11] The full results of these regressions are available in an earlier version of the paper with the same title available as NBER Working Paper No. w10286 Feb 2004 and downloadable at www.nber.org.

they would like to do in the home; that their partner/family gets fed up with the pressure of their job; that they had lost sleep over worry; felt unhappy and depressed; were constantly under strain and worked under a great deal of pressure.

In a related study using data for Canada from the 1994 and 2002 Canadian General Social Surveys Williams (2003) found that self-employed individuals were significantly less likely than employees to report poor interpersonal relationships (10 percent versus 16 percent), or fear of job loss (8 percent versus 14 percent) as a source of workplace stress[12]. However, they were slightly more likely than employees to feel stress as a result of too many hours or too many demands in their work environment (37 percent versus 34 percent). Williams reported that both the self-employed and full-time workers were significantly *more* likely to feel the time crunch of too many demands or hours at work, compared with their employee and part-time counterparts.

- The effects for the self-employed without employees were generally smaller than for the self-employed with employees but still significantly different from employees.

- The self-employed without employees were *less satisfied than employees* with their pay, the amount of work they have and their job security.

- In comparison with the self-employed with employees those without employees were *less likely* to report finding their work stressful, coming home from work exhausted; that they felt too tired after work to enjoy the things they would like to do in the home; unhappy and depressed or that they worked under a great deal of pressure.

- Self-employment is stressful work and likely not for everyone: it involves long hours and considerable family pressures and strains. Along with difficulties in obtaining capital this likely explains why the large numbers of individuals around the world who say they would prefer to be self-employed remain as employees.

Table 13 reports further evidence on the attitudes of the self-employed across countries. The exact questions asked are reported in Appendix 3. Here I make use of data from four World Values Surveys

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[12] In Canada according to the Labour Force Survey, between 1990 and 1997, self-employment accounted for over 75 percent of total job growth.

(WVS), 1981-1984, 1990-1993, 1995-1997 and 1999-2001 as well as from the Eurobarometer Survey Trend files (EBST), for 1975-1998 and estimate a series of ordered logits. In column 1 of the Table using data on approximately 200,000 people from all four sweeps of the WVS for 1981-2001 for 77 countries and 5 further areas. Men report having more control over their lives than women—control is U-shaped in age minimizing at age 60. It is further apparent that the self-employed are significantly *more* likely than employees to they have control over their lives than any other group including full and part-time employees. In addition, despite relatively small sample sizes, evidence was found in a series of individual country equations, which included the same set of controls (results not reported) of a significant positive effect of the self-employed compared to full-time employees in a further nineteen countries (Algeria, Bosnia, China, Croatia, Czech Republic, Estonia, Greece, Hungary, Ireland, Italy, Japan, Lithuania, Montenegro, Poland, Russia, Slovakia, Spain, United Kingdom and West Germany). Having control over one's life is presumably one of the attractions of being one's own boss.

Columns 2 and 3 of Table 13 report a series of life satisfaction equations using the World Values Surveys and the EBST. In column 2 the self-employed dummy is insignificant whereas it is significant in column 3 for a smaller sample of 17 countries. In column 2 there are an average of just over 2500 per country/region using WVS whereas the average is approximately 28,500 in column three using EBST. Interestingly, there is evidence from both column 2 and column 3 that life satisfaction is U-shaped in age—and in both cases minimizes at exactly the same age of forty six![13] Why this is so is the subject of current research. The unemployed are especially dissatisfied with their lives.

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[13] The pattern by gender is all over the map: the male dummy is insignificant in column 2 but negative in column 3. In the separate EBS life satisfaction equations the male dummy was insignificant in seven countries (Austria, France, Belgium, Luxembourg, Spain, Sweden and West Germany), negative in a further seven countries (Denmark, East Germany, Finland, Great Britain, Ireland, Northern Ireland and Norway) and positive in three (Greece, Italy and Portugal). In the separate WVS life satisfaction equations the male dummy was positive in nine countries (Azerbaijan, Belarus, Brazil, Georgia , Great Britain, Italy, Russia, Spain and Ukraine), negative in a further twenty (Algeria, Australia, Canada, China, Finland, Iran, Japan, Jordan, Macedonia, Mexico, Montenegro, Morocco, Netherlands, Nigeria, Sweden, Taiwan, Tanzania, Turkey, Uganda and Zimbabwe) and insignificant in the remaining fifty four countries (results not reported).

Table 13. Ordered logits regarding choice and control and life satisfaction

	Choice and control	Life satisfaction	Life satisfaction
	WVS	WVS	Eurobarometer
Self-employment	.1086 (6.81)	.0235 (1.53)	.0779 (5.96)
Part-time	-.0460 (2.94)		
Retired	-.1523 (8.76)	-.1959 (11.64)	.0168 (1.59)
Housewife	-.1292 (8.87)	.0689 (4.96)	.0545 (6.03)
Student	-.1180 (6.50)	-.0636 (3.60)	.0465 (2.37)
Unemployed	-.3277 (20.44)	-.6475 (41.63)	-1.0462 (81.86)
Age	-.0148 (9.68)	-.0251 (16.71)	-.0243 (24.37)
Age^2	.0001 (7.13)	.0003 (16.14)	.0003 (25.33)
Male	.0899 (10.37)	-.0098 (1.17)	-.0555 (8.99)
Age left school	.0184 (20.86)	.0139 (16.22)	
Schooling dummies	No	No	10
Time trend	No	No	Yes
Year dummies	3	3	No
cut1	-2.5228	-2.5616	-2.9249
cut2	-1.9951	-1.9876	-1.2872
cut3	-1.4082	-1.3471	1.5341
cut4	-.9278	-.85382	
cut5	-.0223	.01671	
cut6	.5144	.54464	
cut7	1.1519	1.2253	

Table 13. Continued….

	Choice and control	Life satisfaction	Life satisfaction
cut8	2.0292	2.2051	
cut9	2.6938	3.0227	
N	196,699	204,432	483,990
Chi^2	18238.9	45015.3	80141.3
Pseudo R^2	.0215	.0507	.0754

Notes: Equation in column 1 includes 77 country dummies (Albania, Algeria, Argentina, Armenia, Australia, Austria, Azerbaijan, Bangladesh, Belarus, Belgium, Bosnia, Brazil, Bulgaria, Canada, Chile, China, Colombia, Croatia, Czech Republic, Denmark, Dominican, East Germany, Egypt, Estonia, Finland, France, Georgia, Greece, Hungary, Iceland, India, Indonesia, Iran, Ireland, Italy, Japan, Jordan, Latvia, Lithuania, Luxembourg, Macedonia, Malta, Mexico, Moldova, Montenegro, Morocco, Netherlands, Northern Ireland, Nigeria, Norway, Peru, Philippines, Poland, Portugal, Puerto Rico, Romania, Russia, South Africa, Serbia, Singapore, Slovakia, Slovenia, Spain, Sweden, Switzerland, Taiwan, Tambov, Tanzania, Turkey, Uganda, United Kingdom, Ukraine, Uruguay, USA, Venezuela, Vietnam, West Germany, Zimbabwe). Equation 2 also includes data and an extra country dummy from Columbia. Both equations 1 & 2 contain information from, and hence separate dummies for, 4 further regions and one city separately identified in the World Values Survey—Andalusia, Basque, Galicia and Valencia plus Moscow. In column 3 there are 17 country dummies (countries are Austria, Belgium, Denmark, East Germany, Finland, France, Great Britain, Greece, Ireland, Italy, Luxembourg, Netherlands, Northern Ireland, Norway, Portugal, Spain, Sweden and West Germany). Excluded category in column 1 is >=30 hrs per week and in columns 2 and 3, employees.
Source: World Values Surveys (WVS) 1981-1997 (ICPSR No. 2790) and World Values Survey 1999-2001 (ICPSR No. 3975); Eurobarometer Trend file (EBS) 1975-1998 excluding 1995 & 1996 (ICPSR No. 3384).

There is some evidence, although admittedly a little mixed, suggesting that self-employed are especially satisfied with the lives—significantly more so than employees and the retired, roughly equivalent to the satisfaction levels of housewives and student, and much more satisfied with their lives than are the unemployed[14]. When these equations are estimated separately by country with the same controls (results not reported) the self-employment variable is significantly positive in twelve countries using the WVS (Bulgaria, China, Indone-

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[14] For more on life satisfaction and happiness see Blanchflower (2001), Blanchflower and Oswald (2004a,b), Bell and Blanchflower (2004) and Di Tella, MacCulloch and Oswald (2001, 2003).

sia, Italy, Japan, Lithuania, Montenegro, Russia, South Africa, Serbia, Spain and Ukraine) and in nine countries out of seventeen in the EBS (Denmark, East Germany, Greece, Ireland, Italy, Netherlands, Northern Ireland, Portugal, West Germany).[15]

Even though the self-employed find their work environment full of stresses and strains there is some evidence that they are satisfied with their lives. There is somewhat stronger evidence from a number of countries that the self-employed say they have free choice and control over their lives. It does appear that the self-employed are different.

5. Conclusions

Self-employment rates are generally down across the OECD. The main exceptions are the UK, and New Zealand. There are strong patterns in the data across countries. The probability of being self-employed across the OECD is higher for men and for older workers compared with younger workers. In Europe the probabilities are lower the more educated an individual is, while the opposite is true in the US Some groups of immigrants have higher rates of self-employment than the indigenous population while others do not. Capital constraints appear to bind especially tightly in the US for firms owned by minorities and women: the low rates of self-employment of blacks and Hispanics in the US appears in part to be driven by liquidity constraints. There is evidence that liquidity constraints bite in other countries including the UK, Finland, Australia, Canada and Sweden.

It does seem likely that people have an unrealistically rosy view of what it is like to be running their own business rather than staying with the comparative security of being an employee. A surprisingly high proportion of employees say they would prefer to be self-employed. Despite the fact that very high proportions of employees say they would like to set up their own business the reality is something else. The evidence presented her suggests that people may well be able to judge what is in their own best interests—that is why they remain as employees and fail to act on what they say. Liquidity constraints prevent individuals from becoming self-employed but this is probably not enough on its own to explain why so few become self-

[15] In private communication Matthias Benz reported finding no significant effect for the self-employed in a life satisfaction equation for Switzerland.

employed. The self-employed overall are happier as they have been largely able to overcome these constraints. The problem is that there are good things about being self-employed—flexibility, being your own boss etc., but there are risks things also. The failure rate is high and there is a danger that pooling of assets into a single activity is fraught with danger—failure could involve losing one's job, one's savings and pension perhaps and even one's marriage or even one's health. The low side risk is especially high. It is certainly unclear from the literature what the optimal self-employment rate is, which makes it hard to know what government policy be toward the level of self-employment in the economy. My view is that governments need to ensure the capital market operates efficiently and discrimination in the provision of credit is removed to ensure that funds are available for economically viable projects. Beyond the provision of information to help the labour market work more efficiently a policy of benign neglect is in order. It is likely a good thing that an economy becomes more entrepreneurial but that may or may not have anything to do with how many self-employed there are. One incredibly entrepreneurial individual like Bill Gates would probably suffice to bring all sorts of good things to the economy like high-paying jobs. A higher GDP is perfectly consistent with a lower self-employment rate.

The self-employed work under a lot of pressure, report that they find their work stressful, that they come home from work exhausted they are constantly under strain and lose sleep over worry they place more weight on work than they do on leisure, they are especially likely to say they have control over their lives and report that they are highly satisfied with the lives. Being self-employed is tough work and appears to require rare talents. Self-employment isn't for everyone. More doesn't seem to be better.

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Appendix 1. Data

a) World Values Survey

The World Values Survey series is designed to enable a cross-national comparison of values and norms on a wide variety of topics and to monitor changes in values and attitudes across the globe. This data collection consists of responses from World Values Survey, 1981-1983 (ICPSR No. 9309) and World Values Survey, 1981-1984 and 1990-1993 (ICPSR No. 6160), along with data gathered during 1995-1997. Over 60 surveys representing more than 50 countries participated in the 1995-1997 study. For details of the World Values Survey see codebook ICPSR No. 2790 available at www.icpsr.umich.edu.

The countries and regions in the World Values Survey are Andalusia, Argentina, Armenia, Australia, Austria, Azerbaijan, Bangladesh, Basque, Belarus, Belgium, Bosnia-Herzegovina, Brazil, Bulgaria, Canada, Chile, China, Croatia, Czech Republic, Cyprus, Denmark, Dominican Republic, East Germany, Estonia, Finland, France, Galicia, Georgia, Great Britain, Greece, Hungary, Iceland, India, Ireland, Israel, Italy, Japan, Korea, Latvia, Lithuania, Luxembourg, Macedonia, Mexico, Moldova, Montenegro, Moscow, Netherlands, New Zealand, Nigeria, Northern Ireland, Norway, Peru, Philippines, Poland, Portugal, Romania, Russia, Serbia, Slovakia, Slovenia, South Africa, Spain, Sweden, Switzerland, Tambov, Turkey, Ukraine, Uruguay, USA, Valencia, Venezuela and West Germany.

b) Current Population Survey

The Current Population Survey (CPS) which is the most reliable and appropriate source of data to examine the workings of the labor market over time in the United States. Data from the CPS have the advantage that they are publicly available, large in size, and nationally representative. A monthly survey that has been conducted by the Census Bureau for over 40 years, the CPS is the source of official government statistics on employment and unemployment. Currently, about 56,500 households are scientifically selected for the interview on the basis of area of residence to represent the nation, as a whole, and as individual states, and other specified areas. In addition to information on the employment status, the CPS collects information on age, sex, race, marital status, educational attainment, earnings, occupa-

tion, industry, and other characteristics. The statistics from the CPS serve to update similar information collected once every 10 years through the decennial census.

Since 1979, about a quarter of the households in each monthly survey have been asked to provide an extra set of information including usual weekly earning and weekly hours. These households are said to be in "outgoing rotation groups" (ORG). They are so called because of the way the CPS rotates households for interviews. Each household selected for the survey is interviewed once a month for four consecutive months, ignored for eight months, and interviewed again once a month for four more months. The households in the ORG are those that are in either the fourth or the eighth survey. The ORG files of the CPS include individual data for about 30,000 individuals each month, or over 350,000 per year. Data are available in a comparable form from 1979 and the most recent data are from 2002.

For details of the Current Population Survey see the National Bureau of Economic Research's data website http://www.nber.org/data/cps_index.html.

c) Eurobarometer Surveys

In all European Union Member Countries, for each Eurobarometer, samples are drawn among the national population, aged 15 and over. The regular sample size is 1000 respondents per country except the United Kingdom (1000 for Great Britain and 300 for Northern Ireland and Luxembourg (300 until the late eighties, subsequently 500 or 600). They have included Greece since Autumn 1980, Portugal and Spain since Autumn 1985, and the former German Democratic Republic from Autumn 1990 onwards (additional East German sample of 1000 respondents). In addition, an autonomous standard Eurobarometer on selected sets of questions was established in Norway (1000) in Autumn 1991 and in Finland (1000) in Spring 1993. Austria (1000) and Sweden (500) first joined in Autumn 1994. In Spring 1995, the complete survey series was expanded to the new European Union member countries Finland, Sweden and Austria. Iceland (600) first participated in Spring 2003.

For details of the Eurobarometer Survey series see http://www.za.uni-koeln.de/data/en/eurobarometer/index.htm.

d) International Social Survey Programme (ISSP)

The International Social Survey Program (ISSP) is a continuing, annual program across countries that brings together pre-existing, social science projects and coordinates research goals, thereby adding a cross- national perspective to the individual, national studies. Since 1984, ISSP has grown to 38 nations - Australia, Austria, Brazil, Bulgaria, Canada, Chile, Cyprus, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Hungary, Ireland, Israel, Italy, Japan, Latvia, Mexico, Netherlands, New Zealand, Norway, Philippines, Poland, Portugal, Russia, Slovakia, Slovenia, South Africa, Spain, South Korea, Sweden, Switzerland, Taiwan, Uruguay, USA, Venezuela. In addition, East Germany was added to the German sample upon re-unification. Other nations have replicated particular modules without being ISSP members (e.g. Poland, in 1987, and Switzerland, in 1987 and 1993). See www.issp.org.

Average hours in the ISSP

Average hours for the self-employed and employees are available on a consistent basis in the 1999 ISSP, N=15,729. Only in Russia and Chile do the self-employed work less hours than employees.

Table A.1. Average hours

	Employ-ees	Self-employed		Employ-ees	Self-employed
Australia	36.4	39.4	**Latvia**	42.0	44.2
Bulgaria	42.1	54.6	**New Zealand**	40.0	46.3
Canada	39.1	41.4	**Northern Ireland**	34.4	43.7
Chile	48.2	46.5	**Norway**	39.0	45.7
Cyprus	38.4	42.6	**Poland**	42.9	56.5
Czech Republic	43.7	52.0	**Portugal**	41.5	47.0
East Germany	41.3	56.7	**Russia**	39.0	36.5
France	37.1	49.9	**Slovakia**	43.5	56.3
Great Britain	38.6	42.6	**Slovenia**	43.0	52.0

Table A.1. continued….

	Employ-ees	Self-employed		Employ-ees	Self-employed
Hungary	46.1	51.8	**Spain**	45.2	49.9
Israel	38.5	42.8	**Sweden**	38.5	47.2
Japan	47.3	51.6	**United States**	40.3	44.7
West Germany	39.7	54.2			

e) OECD Self-employment data

The data are downloadable from the OECD website at http://www1.oecd.org/scripts/cde/members/LFSDATAAuthenticate.asp

Appendix 2. Questions from Eurobarometer 44.3OVR, February-April 1996—ICPSR No. 244

Q.36.a) I am going to read out a list of various aspects of jobs. Please choose between the two ends of this scale. If you are completely dissatisfied with that particular aspect of your present job, you give a score of 1. If you are completely satisfied with that particular aspect of your present job, you give a score of 7. The scores between 1 and 7 allow you to say how close to either side you are.

1. Your pay?
2. The opportunity to use your abilities?
3. Being able to use your own initiative?
4. The hours you work?
5. The amount of work?
6. The variety in the work?
7. Your job security?
8. The relations with your supervisor or manager?
9. Your promotion prospects?
10. The training provided?

Q.36.b) All in all, how satisfied would you say you are with your job?

Q.37. How often do you... ?
1. Find your work stressful?
2. Come home from work exhausted?
3. Find your job prevents you from giving the time you want to your partner or family?
4. Feel too tired after work to enjoy the things you would like to do at home?
5. Find that your partner/family gets fed up with the pressure of your job?

Responses here are "Always; Often; Sometimes; Hardly ever, Never.

Q.83. Would you say that you have not at all, no more than usual, rather more than usual, much more than usual?
1. Lost much sleep over worry?
2. Been feeling unhappy and depressed?
3. Been losing confidence in yourself?

4. Been feeling you could not overcome your difficulties?
5. Been feeling constantly under strain?
6. Been thinking of yourself as a worthless person?

Q.19. For each of the following statements, please tell me if it applies to you, or not?
I work under a great deal of pressure—yes, no or don't know?

Appendix 3. Questions in the World Values and Eurobarometer Surveys

A). Questions in the World Values Survey.

V66. Choice and Control. Some people feel they have completely free choice and control over their lives, while other people feel that what they do has no real effect on what happens to them. Please use this scale where 1 means "none at all" and 10 means "a great deal" to indicate how much freedom of choice and control you feel you have over the way your life turns out.

Life satisfaction

V81. All things considered, how satisfied are you with your life as a whole these days? Please use this card to help with your answer.

Dissatisfied   Satisfied
1 2 3 4 5 6 7 8 9 10

B) Questions in the Eurobarometer

Variable =Satisfied. On the whole are you very satisfied, fairly satisfied, not very satisfied or not at all satisfied with the life you lead. Would you say you are:
1. very satisfied
2. fairly satisfied
3. not very satisfied
4. not at all satisfied