THE DETERMINANTS OF ENTREPRENEURSHIP IN 2Oth CENTURY SPAIN: AN EMPIRICAL ANALYSIS, by José L. García-Ruiz (Complutense University)[*]

Introduction

Since Joseph A. Schumpter published his *Theorie der wirtschaftlichen Entwicklung* in 1911, an important role has been assigned to entrepreneurship. Thanks to three large initiatives (the Observatory of European SMEs, belonging to the European Union; the Centre for Entrepreneurship, SMEs and Local Development, belonging to the OECD; and the Global Entrepreneurship Monitor or GEM) and some surveys, such as the Eurobarometer or the very recent one for the World Bank (Klapper et al., 2007), it has been possible to make progress in the last few years in dealing scientifically with the concept of the entrepreneur, that is, elaborating theories which can be empirically tested (Shane, 2003; Acs and Audretsch, eds., 2003; Gartner et al., 2004; Cassis and Minoglou, eds., 2005 and 2006; Cuervo, ed., 2007). These researches have been of interest to governments, particularly those from European countries in which entrepreneurship is not exactly flourishing at this moment. Thus, in 2003, the European Commission brought out the *Green Paper on Entrepreneurship in Europe*, which based mainly on research by David B. Audretsch (Audretsch et al., 2002), proposed debate on several initiatives to stimulate entrepreneurship in Europe.

Reflecting this concern, the Spanish Consejo Económico y Social (CES) published in 2005 a report entitled *El proceso de creación de empresas y el dinamismo empresarial*, which to a great extent was based on GEM reports. These gave special attention to factors involved in creating businesses where public policies can take action (Table 1).

Table 1: GEM evaluation of factors involved in creating businesses in Spain, 2003-2005 (points out of a maximum of five)

	2003	2004	2005
Access to physical infrastructure	3.38	3.73	3.64
Trade infrastructure	2.93	3.20	3.26
Support for growth and development of firms			3.05
Government programs: presence, aid	3.04	3.12	3.01
Protection of intellectual rights	2.87	2.97	2.89
Government policy: bureaucracy, procedure	2.81	2.87	2.81
Post-secondary education	2.68	2.74	2.75
Social and cultural norms	2.56	2.78	2.74
Opening up of domestic market: barriers	2.78	2.76	2.70
Government policy : support, emphasis on measures	3.01	2.95	2.69
Financial backing	2.49	2.44	2.54
Technology and R&D transfer	2.61	2.48	2.52
Opening up of domestic market: reaction capacity	2.13	2.18	2.16
Primary and secondary education	1.82	1.86	1.87

Source: *Informe ejecutivo GEM España 2005*, Table 57.

The CES analysts attached great importance to the relationship between education and entrepreneurship, and were highly concerned by the low score obtained by educational

[*] I am very thankful for the support of my colleagues of the research program DETESEMP-CM S2007/HUM-0433 (Community of Madrid) in the elaboration of this paper.

factors, as considered in the *GEM Executive Spain Report 2003*, which was the one used. It was clear that government policies offering support to entrepreneurial initiative were not delivering in this area. So, the CES analysts proposed "making people aware of the importance of entrepreneurial qualities as a basic new skill from primary school level" and "developing links between schools and the private sector. This involved setting up structures, plans and measures to support this objective. In the university field, these initiatives must be more ambitious, including "among the university functions that of promoting the entrepreneurial spirit" and seeking "to exploit knowledge acquired in the university and to transfer it to society by means of firms created by the university community".

The data in the above table show that some improvement could be observed between 2003 and 2005, the time when the CES made their report public, but there was still some way to go. Both the *Green Paper* and the CES report have provided a basis for the Spanish Governments and the Autonomous Communities to make every effort in recent years in initiatives completely unheard of in the field of education. Thus, for example, the Community of Madrid has organised since 2005 an annual edition of the competition "Dream today to manage tomorrow", involving students and teachers of Primary, Secondary and Professional Schools in preparing stories, comics and video game scripts on the subject matter. What is more, in December 2006, the Governing Board of the Complutense University of Madrid approved the regulations for the creation of "technology-based firms", started up by teachers and researchers wishing to market their laboratory work. That and other similar initiatives in the Madrid area are being coordinated by a specialised institution of the Community of Madrid (the Oficina del Emprendedor de Base Tecnológica de la Comunidad de Madrid).

In the following pages we will present an initial historical approach to the quantitative study of entrepreneurship, basing it upon available statistical sources for the case of Spain. We will begin by presenting an introduction to theories on the entrepreneur, pausing to examine those which relate entrepreneurial spirit and education (second section). Then, in the third section, we shall analyse the correlation between the "entrepreneurship rate", measured by the number of firms created each year in relation to the population, as has been proposed by Jesús M. Valdaliso (2005) and a set of independent variables taken from the works cited in the bibliography of authors, such as David S. Evans, William B. Gartner, Scott A. Shane, Paul D. Reynolds and David B. Audretsch: 1) per capital income, as an indicator of the degree of economic development; 2) technological change, measured by patents; 3) financing difficulties, measured by the availability of financial resources; 4) the unemployment rate, which when high could lead to self-employment; and 5) education. Given the interest shown recently by public policies in the relationship between education and entrepreneurial spirit, we shall devote section four to investigating the evolution of the training of entrepreneurs and managers between 1964 and the present time based on information from a survey of the working population (the *Encuesta de Población Activa*). Finally, in section five we will present our conclusions.

Education and entrepreneurship in Spain

As Santos (1997) explains, the Joseph A. Schumpeter's approach to entrepreneurship has been the one which has been most widely diffused inside and outside the academic world, and has been the starting point for several studies attempting to characterise the

entrepreneur. The psychologist David C. McClelland, the sociologist Everett E. Hagen and the economist Harvey Liebenstein are the most notable for their attempts to develop the Schumpterian paradigm. For McClelland, humanity has three basic needs: achievement, belonging and power. Each individual will feel these needs in a different way. In the case of the entrepreneur, the need for achievement through work will be stronger than the other ones. For Hagen and Liebenstein, the process which gives birth to entrepreneurs can be best explained by social factors rather than individual ones. Hagen finds that entrepreneurs tend to appear among cultural minorities which are outcasts in society. In the heart of these minorities the conditions are found which induce individuals to be inclined to show "creative destruction". Moreover, Liebenstein considers that the market, which is never in a state of perfect competition, is unable by itself to make firms work in a completely efficient manner. There will always be an "inefficiency X" which can only be destroyed and cured by the entrepreneur. For Liebenstein, the entrepreneur's main contribution will be to motivate workers to put the firm as near as possible on the production frontier as defined by technology.

The role of education in training the entrepreneurial spirit is very hazy in those lines of Schumpterian research, obsessed as they were with "traits approach", which looks for innate characteristics in people. A long time passed before Alfred Marshall's warnings were heeded. The great Cambridge economist was very concerned to see that his country was lagging behind the new industrial leaders, Germany and the United States, and among the reasons for this phenomenon he mentioned the education factor (Marshall, 1919). An added problem was that the British educational system did not appear to be the most suitable for stimulating business initiative. Not only was it the case that the British population received scant formal education, it was also a fact that those who did have access to education were not trained with knowledge enabling them to be better entrepreneurs and managers. Years later, the sociologist Martin J. Wiener expressed his agreement with these observations when linking the training received by the British elite with the loss of entrepreneurial values in a highly successful book (Wiener, 1981).

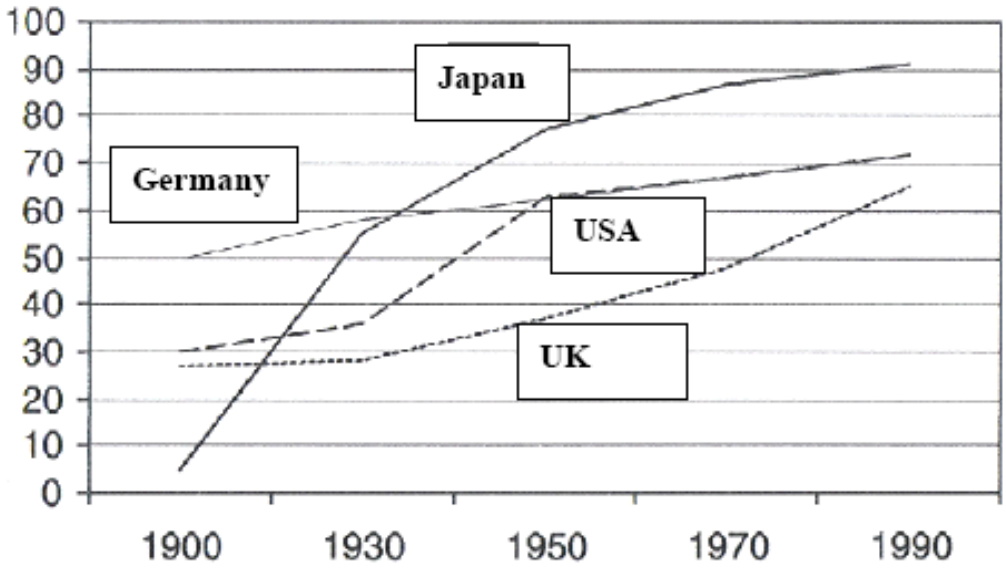
Prior to 1879 the British state did not begin to provide primary education, which was followed with some delay by secondary education (see an overview in Aldcroft, 1992). Research carried out to measure the impact produced by the formal education system in creating firms came up with pessimistic findings, a fact highlighted by James Foreman-Peck. Education did not serve to raise people up the social business ladder, though it did have effects of this type on professional and Civil Service ladders (Foreman-Peck and Smith, 2004). It can even be stated that panel studies tend to support the idea that the individual who had received education in contemporary history had had fewer chances of developing an entrepreneurial spirit (Foreman-Peck, 2005). The situation improved after the Second World War, with the introduction, for example of business schools, which were faithful models of American management, but by the end of the 20th century the British education system as a whole was still an obstacle for the country's competitive advantage.

In a recent doctoral thesis defended in Oxford University by Mike Hicks (Hicks, 2004) it is shown that, at the beginning of the 20th century, British business managers had little university training, rather less than Americans, and way behind the Germans. If one looked at the leading industrial countries in the 20th century it is clear that British managers were only better educated than the Japanese, though the latter were soon to

show enormous interest in training and before the Second World War were on a par with Germany. As is shown in Graph 1, the British made very slow progress and the leaders of the country throughout the whole of the 20th century have remained below the level of Germans and Americans (very similar in the postwar period) and a long way behind the impressive levels of Japan (with over 90 per 100 of its managers boasting university training in recent years).

Hick's thesis is consistent with what Marshall could see at that particular time and with the extensive literature which has made highlighted British neglect of formal education as a cause of the country's industrial decline. In the recent splendid synthesis of British management made by John F. Wilson and Andrew W. Thomson the British are said to have taken a long time to be convinced that entrepreneurs and managers are not "born", but rather "made"; the backwardness can be seen in the fact that, nowadays, firms' expenditure per head on the training of each manager is 4,438 euros in Germany and only 1,625 euros in Great Britain (Wilson and Thomson, 2006, pp. 173-175). The country's entrepreneurs and managers are still far worse trained than other professions. In recent years, the United Kingdom has experienced phenomenal economic growth, which has made its citizens highly confident, but the authors of the above-mentioned book and international experts in competitiveness such as Michael E. Porter do not think that this progress is sustainable without the education system being taken more seriously. Nowadays several authors are convinced that Edith T. Penrose was right when she postulated that firms succeed or fail in competitive worlds on the basis of their resources and the skill of their managers, in the training of which education plays a vital role.

Graph 1: Evolution of the percentage of top managers and board members with university education in Japan, Germany, The United States and United Kingdom during the 20th century



Source: Hicks (2004) cited by Wilson and Thomson (2006, p. 159).

The European model for good business education is Germany. The Prussian state, which engineered the unification of Germany in the shape of the Second Empire, put

into practice a compulsory education system after the defeat in Jena (1806). Soon afterwards, in 1809, the Humboldt University was born, in Berlin, and this was described by Peter Drucker, the expert in business management, as the "first modern university" (Drucker, 1989, p. 348). In 1825 Karlsruhe Polytechnic was added to the system, following the French model, which was reorganised in1833 by Karl F. Nebenius and it became a model of its kind. The number of students in technical universities (Technische Hochschulen), developed in the 1860s, grew from 5,000 in 1890 to17,000 in 1903 (according to data published by Heinz Hartmann in his classic 1955 report), Business-related specialised studies began in 1913, when the first *Kaufmann* diploma was awarded. This is not a late date if we think that also in the United States business studies did not become widespread till the beginning of the 20th century.

In Germany not only are business managers well trained (particularly in engineering), but workers also reached a relatively high educational level quite early on. As the 19th century merged into the 20th, it began to become clear that British leadership was in jeopardy in the face of the industrial force of Germany and the United States, and for an astute observer like Werner Sombart it was a "very significant fact that the poor German countries had only preceded their more fortunate Western rivals in one area: the organisation of public instruction" (Sombart, 1946 (1902), vol. 1, p. 72) Years later, the American historian David S. Landes showed himself to be in agreement with these theories when he pointed out that Germany's success in the "second industrial revolution" had been greatly to do with the existence of a good education system, ranging from professional training to university level (Landes, 1969). The complex industrialisation, which was characteristic in the 20th century soon showed up the limitations of the "practical man" and established the need for an increasingly larger extension of scientific-technical knowledge, as Robert T. Locke (Locke, 1984) explained.

Entrepreneurs and Spanish economic backwardness: a general approach for debate

In Spain there has been an abundance of negative opinions regarding the country's entrepreneurial spirit. The intellectuals of the "Generation of 1898" and the so-called "*regeneracionistas*" (Regenerationists) explained the country's backwardness through the predominantly anti-business ethos .The only exceptions were to be found in Catalonia and the Basque Country, where industrialisation levels were much higher than the Spanish average. As has been pointed out by Jesús M. Valdaliso, these theories came under scrutiny in the 1960s and 70s, when, on the one hand, doubt began to be cast on the "myth of the national character" and, on the other, the entrepreneur was left out of all economic models: "For the neoclassicals, of conservative opinion, he was useless; for the Marxists and radicals he was a villain" (Valdaliso, 2005, p. 117).

Francisco Ayala in *Razón del mundo. La preocupación de España* (1960) and Julio Caro-Baroja in *El mito del character nacional. Meditaciones a contrapelo* (1970) refused to consider that Spain was different, as was the claim of the Francoist regime's official propaganda in justification of the dictatorship. It was also to be observed in the case of José A. Maravall and his article "Sobre el mito de los caracteres nacionales", published in 1963 in *Revista de Occidente.* Nonetheless, it is no less certain that Salvador de Madariaga replied to Maravall the following year in the same journal with "Sobre la realidad de los caracteres nacionales", and there is no chance of claiming any

affinity between the distinguished intellectual and Francoism. Madariaga was simply drawing attention to the need to bear in mind that the makeup of countries tended to be the result of their own cultural and historic characteristics, and these should not be ignored. "National characters" impinged on decision-making, including business ones. In the eighties, Spain's entry into the European Economic Community (EEC) led to a widespread business crisis brought on by the uncompetitive nature of Spanish firms, compared to the most developed European countries. Pessimistic attitudes were heard once more and noted economists joined forces in attributing problems to the existence of an inefficient "*castizo*" (traditional) model (Juan Velarde, Enrique Fuentes-Quintana) and the chronic weakness of the Spanish entrepreneurial sprit (Gabriel Tortella).

The study of the Spanish entrepreneurship is still in its infancy. Nevertheless, after an initial exploration, of what has been advanced in recent years Valdaliso (2005, p. 138) concludes that

> neither through their social and family origins, nor through their training or their attitudes to risk or innovation does it appear that Spanish entrepreneurs in the 19th and 20th centuries have been very different from their colleagues in other European countries. Nor does it seem that problems in the economy or with Spanish firms throughout these centuries can be laid at the door of a supposed lack of entrepreneurial spirit. The problems were of a different kind; most particularly those linked to the institutional framework, which designed a perverse incentive structure for entrepreneurs to perform by, and, consequently, for an economic development model for the country, one which had negative results for the image of entrepreneurs in society, as the experience of Francoism, more than any other stage, has shown.

The debate between Professors Tortella and Valdaliso on the greater or lesser importance of the Spanish entrepreneurial spirit dates back to 1993, a time which we can consider to be the take off point for business history in Spain. Nowadays, thanks to the work that has been carried out with the help of registry sources and databases compiled by the European Union, the OECD and the GEM, we can begin to quantify the real state of Spanish entrepreneurial sprit throughout its history. In Valdaliso (2005) an initial attempt was made to apply Shane's (1996) model in comparing the number of firms launched per inhabitant with GDP per inhabitant, between 1886 and 1990, using the data of Luis G. Cabrera and Fernando Carnero (1997). Valdaliso found a high degree of correlation between both series, except in the interwar period between the world wars (when entrepreneurial initiative evolved at a lower rate than income) and during the oil crisis (when entrepreneurial initiative did not stop growing). The author does not pause to explain these divergences and prefers to insist on the fact that, in the long term, it seems clear that entrepreneurial initiative has been the engine of Spanish economic development, which has culminated in great success and international recognition, as was to be expected. Undoubtedly, Valdaliso has taken the first step, but perhaps it would be worthwhile to take a few more before making such a striking declaration as this author does (for example, in Sánchez-Moral, 2005, insistence is made on the great regional differences in recent creation of firms in Spain, something that can be seen with historical perspective in García-Ruiz and Manera, eds., 2006).

An initial quantitative analysis of Spanish entrepreneurship in the 20th century

Following the models proposed by D.S. Evans, W.B. Gartner, S.A. Shane, P.D. Reynolds and D.B. Audretsch in the above-mentioned works, we shall approach the determinants of Spanish entrepreneurship in the 20th century via the correlation between the "rate of entrepreneurship" variable and five explanatory variables: per capita income, patents, interest rate, unemployment rate and education. The entrepreneurship rate will be measured by the number of businesses set up in relation to the population, accepting Valdaliso's proposal (2005). According to Gartner and Shane (1995), it would have been better to use the number of operating firms per capita, but, for now, it is not possible to get this stock variable for the whole of the 20th century. The recent publication by Xavier Tafunell of a complete revised series on the setting up of companies after the promulgation of the 1885 Code of Commerce has been very useful (Carreras and Tafunell, eds., 2005).

In Graph 2 there is a presentation of the number of firms set up in Spain per million inhabitants between 1886 and 1959, that is, from the moment when the Trade Register of the 1885 Code began to operate till the time when the Spanish economy opted for a break with the traditional model of economic isolation. Obviously, the First World War constituted a time when the Spanish entrepreneurial spirit was at its height. Spanish neutrality during the conflict spurred Spanish expectations in a way never witnessed previously. Yet, the euphoria of the war years did not last long and the decline of entrepreneurial spirit, as measured by this indicator was clear both in the years of Primo de Rivera's dictatorship (1923-1930) and in those of the Second Republic. During the Civil War (1936-1939) and the immediate aftermath new business opportunities were discovered and the creation of new businesses was encouraged (hardly surprising, since large fortunes have always been made during wartime). However, continued isolation and autarchy in the Spain of the 40s and 50s was a deterrent to the launching of new enterprises. Only in the second half of the 1950s, when "American aid" arrived and Spain began to become a member of the international order, did a resurgence of entrepreneurship take place.

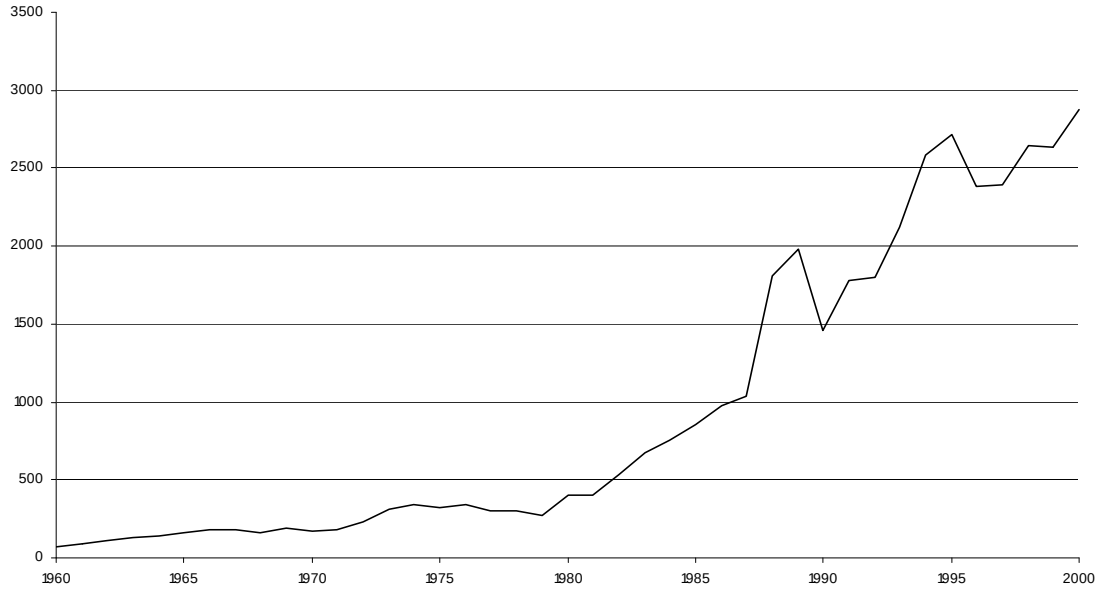
In Graph 3 the period 1960-2000 is shown. The upward trend in business creation is quite evident, even though the rate was slow in the 60s and 70s, and much quicker from then on (with two corrections following bouts of excessive enthusiasm). It is clear that the steady normalisation of the state of the Spanish economy in the 60s and Spain becoming a full member of the European Economic Community (today the European Union) have been factors in stimulating Spanish entrepreneurial spirit on the whole). Nonetheless, a warning must be given that the figures we are using include firms set up by foreign capital, in the form of subsidiaries or controlled firms. It is well known that the weight of foreign capital in the Spanish economy has not ceased growing from 1959 onwards, thus, in the makeup of these figures a not inconsiderable part would correspond to foreign entrepreneurial spirit.

Graph 4 enables us to introduce another reservation concerning the optimism produced by the previous graph —which was so influential in Valdaliso's conclusions (2005). The average capital of newly constituted firms, in constant pesetas, was still high in the first half of the 20th century, fell in the sixties and reached a very low level in the final years of the century. The latter would be the first indicator that the average importance of business initiatives has in fact diminished over the period considered.

Graph 2: Number of firms constituted in Spain per million inhabitants, 1886-1959

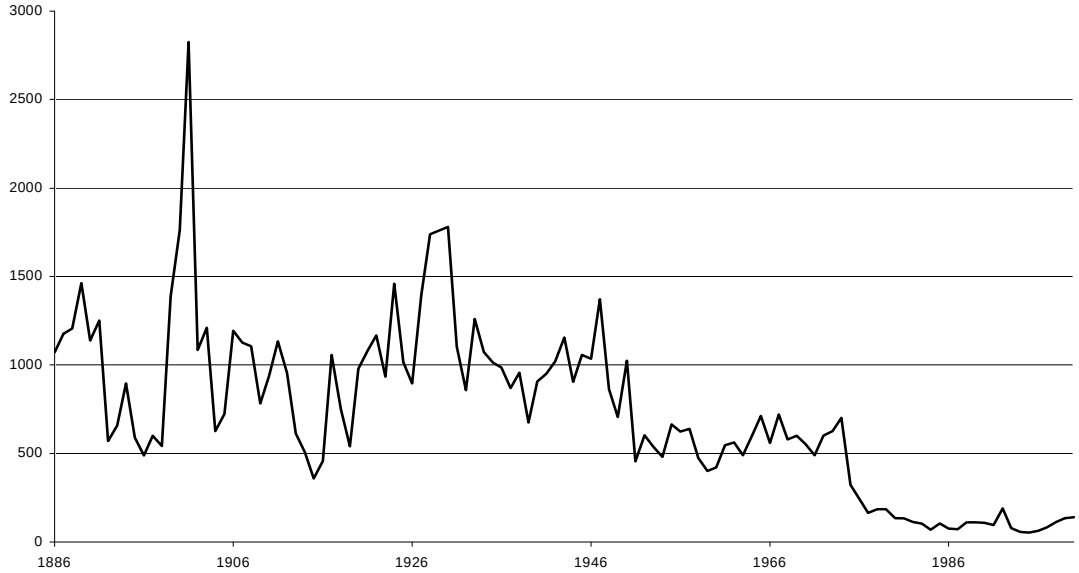
Note: There is no information for 1929 in the source. Source: Own elaboration with data from Carreras and Tafunell (eds.) (2005).

Graph 3: Number of firms constituted in Spain per million inhabitants, 1960-2000



Source: Own elaboration with data from Carreras and Tafunell (eds.) (2005).

Graph 4: Average capital of new firms set up in Spain, 1886-2000 (thousands of constant 1995 pesetas)



Note: There is no information for 1929 in the source. Source: Own elaboration from data of Carreras and Tafunell (eds.) (2005).

Entrepreneurship and per capita income

A subject which has merited great attention in the quantitative studies on entrepreneurship has been the evolution of self-employment in the most developed societies. In Table 2 there is a presentation of OECD estimates on self-employment for a group of countries which can be identified as developed. The trend in eurozone countries, between 1975 and 2005, was downward, this was also true for the United States and Japan, but not so for the United Kingdom, where, starting from very low levels in 1970, self-employment has shown significant growth. The casuistry is very varied. In 1970, Japan, Italy and Spain had very high rates of self-employment; in 2005, only Italy was still in that situation. The Spanish population had started to become wage-earners even before Spain became part of the international economy, as shown in Table 3, but the figure only became high from that time onwards. In any case, Spain is a long way from the very low figures for self-employment in France (a country with an enormous public sector employment; see table A1 in Appendix) and in the United States, where clearly many dream of being entrepreneurs but few achieve that aim.

Table 2: Self-employed population in the developed world, 1970-2005 (percentages of the total employed population)

	France	Germany	Italy	Spain	UK	Euro Area	USA	Japan
1970	20.0	16.6	31.6	28.4	8.6	Na	10.2	35.1
1975	16.7	14.0	30.3	22.2	8.9	21.3	9.7	30.2
1980	14.9	11.7	32.1	23.2	9.6	20.5	9.4	28.3
1985	13.6	11.3	34.8	23.8	12.5	20.7	9.1	25.7
1990	10.5	10.4	34.6	20.1	14.6	18.9	8.8	22.6

1995	8.3	10.0	35.0	19.5	14.3	17.8	8.5	18.5
2000	7.5	10.0	34.2	15.5	12.3	16.7	7.6	16.9
2005	7.3	11.2	31.3	13.3	13.0	16.2	7.5	15.2

Source: OECD Statistical Compendium.

Table 3: Wage earners in Spain, 1955-2000 (percentages of the total employed population)

	%		%
1955	53.3	1980	70.8
1960	56.5	1985	69.5
1965	60.3	1990	73.8
1970	64.0	1995	81.1
1975	70.1	2000	83.2

Source: Carreras and Tafunell (eds.) (2005), who quote data from the Instituto Nacional de Estadística.

In the broader study carried out on the topic (Wennekers et al., 2005) the conclusion is reached that entrepreneurship tends to decline as the level of development rises, but above a certain level the trend is inverted and an increase in entrepreneurial creation is noted. In this manner the process can be portrayed as a U-shaped curve. As pointed out by the authors of the study, Simon Kuznets (1971) was the first to suggest the paradox that as the level of economic development rose there were fewer entrepreneurs .The fact has tended to be confirmed by several empirical studies and it has been argued that, in the first place, it is related to the structural change which leads to the primary sector losing in importance compared to industry, where economies of scale are considerable. In an advanced stage of the process of economic development, high wages and welfare benefits may deter many people from embarking on complex, risky business projects. Nonetheless, certain evidence is beginning to appear to support the idea that growth in the number of wage earners is a reversible process. The sophistication of the most advanced countries offers new and unsuspected business opportunities and many individuals in these societies seek a level of self-satisfaction in their work which can only stem from the entrepreneurial activity. This is socially necessary behaviour, and needs to be supported by public policies, since advanced societies, if they wish to continue being so, must be guided by concepts of innovation (M.E. Porter) and entrepreneurship (D.B. Audretsch).

Also, revision of employment statistics is turning up a few surprises. For example, the data for Spain from the base drawn up by the Dutch EIM, shows that albeit total self employment clearly fell in the last three decades of the 20th century, this self employment did not fall in sectors other than the primary sector. As is shown in table 4, self employment in the industrial and service sectors fell slightly in the 70s and the beginning of the 80s and, then, grew noticeably to take advantage of the opportunities opening up with Spain's entry in the EEC. This seems a good indicator that Spain was tackling the 21st century with a vibrant entrepreneurial sector.

Table 4 Owner-entrepreneurs in Spain with or without a primary sector (P.S.), 1972-2000 (percentages of the total working population).

	Total	Without P.S.		Total	Without P.S.
1972	21.4	11.8	1988	17.4	12.3
1974	20.7	11.6	1990	16.8	12.3
1976	19.6	10.9	1992	16.8	12.9

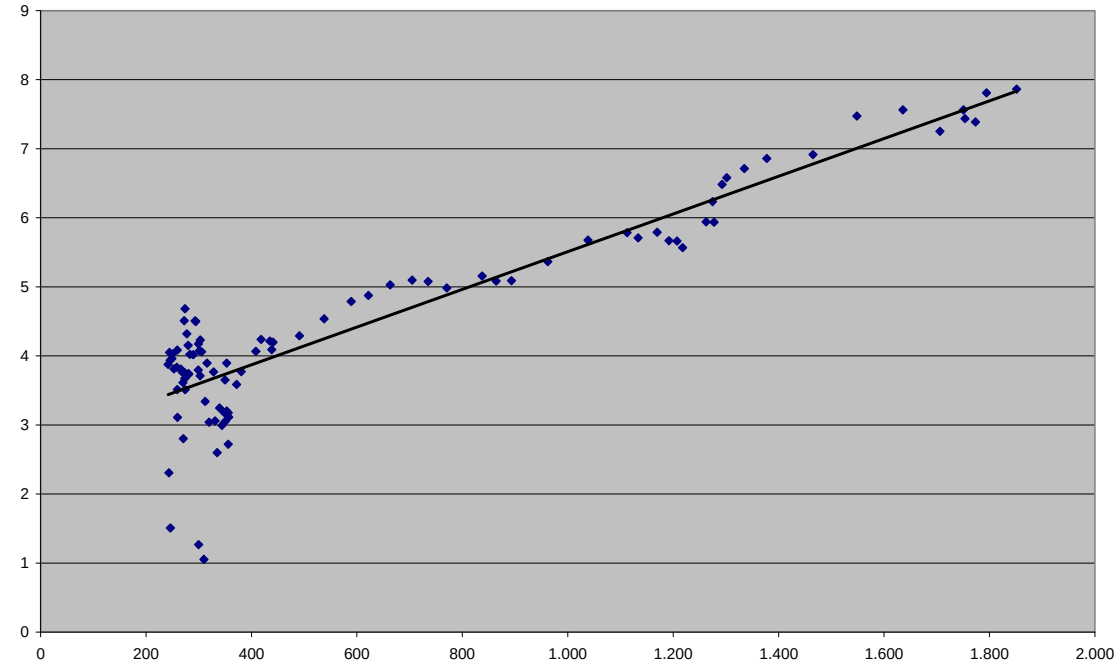
1978	18.8	10.7	1994	16.2	12.6
1980	18.4	11.0	1996	16.3	13.0
1982	17.5	10.8	1998	16.0	13.0
1984	17.8	11.2	2000	15.3	12.6
1986	17.0	11.4			

Source: www.eim.net.

To finally understand the entrepreneurial reality that we are talking about it is worth pausing to look at the figures in Table A2 in Appendix. In view of these figures, it is plain that in 2000 five countries stood out for the large number of firms they had: Italy, with more than 4 million; Germany and the United Kingdom, with around 3.5 million; and France and Spain, with about 2.5 million. Large firms accounted for a particularly small fraction of the total in Italy and Spain. In these two countries about 80 per 100 of employment took the form of small and medium sized firms. However, the contribution of large firms to total value added was very disproportionate in the Spanish case; around 45 per 100. Therefore, small and medium sized firms were clearly less productive than the large ones. The problem of the lack of productivity and competitiveness of Spanish firms is concentrated in the small and medium sized firms, many of which are really micro firms.

The correlation analysis presented in Graph 5 shows that in the Spanish case the increase of income per inhabitant has been accompanied by a noticeable creation of firms (in net terms, since we discounted the number of liquidations registered yearly; this was only possible until 1995), even at high levels of development. We are aware that we are using different concepts of entrepreneurship. This is also done by the statistical sources cited for self employment, and that accounts for the differences observed. Around 1970, total self employment was: 28 per 100, according to the OECD, 34 per 100, according to the INE and about 21-22 per 100, according to the EIM. Around 2000, the differences are smaller: 15-16 per 100, according to the OECD, 17 per 100, according to the INE and 15 per 100 according to the EIM. In any case, all estimates coincide in pointing out that the weight of self employment declined in Spanish society during the economic, political and social modernisation process. How can this evidence be made to fit in with that offered by the last graph? The explanation may lie in the fact that the graph shows entrepreneurship only being seen in the form of companies, that is, excluding the individual or self-employed entrepreneur. Companies are mostly employers, that is, creators of employment for employees or wage earners. This way, which in recent years has produced strong growth in the number of firms set up, is perfectly compatible with the advance in the number of wage earners among the workforce.

Graph 5: Correlation between entrepreneurial initiative and GDP per inhabitant in Spain, 1900-1995



Note: Entrepreneurial initiative (with Neperian logarithmic transformation to correct heterocedasticity) is measured in the y-axis by the net number of firms set up (constitutions minus liquidations) for each million inhabitants. The GDP (at market prices) per inhabitant is shown on the x-axis, in thousands of constant 1995 pesetas. The correlation coefficient is 0.91. Source: Data from Carreras and Tafunell (eds.) (2005)

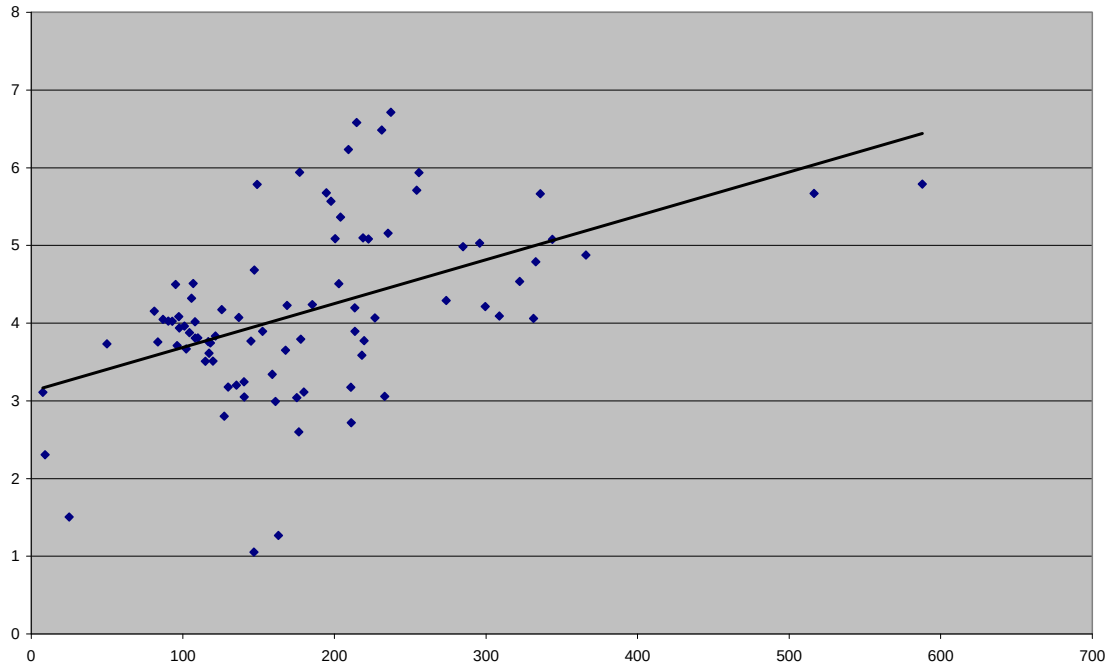
Entrepreneurship and technological change

The analysis made by S.A. Shane (1996) of the variation rates in the number of firms per inhabitant in the United States during the 20th century concluded that the key factor had been technological change, confirming the Schumpeterian intuitions. It seems difficult to imagine that something similar could have occurred in Spain, where the technological weakness of firms has been (and is) proverbial (Ortiz-Villajos, 1999; Saiz, 1999) .In any case, it is essential to consider the relationship between technological innovation and entrepreneurial innovation. In Wennerkers et al. (2005) technological innovation is considered to be a key factor in understanding the renaissance of the entrepreneurial spirit in mature economies, and this renaissance is absolutely essential for maintaining living standards.

The best indicator for measuring technological innovation is the "Innovation Capacity Index", proposed by M.E. Porter in his well known reports on global competitiveness. The index measures the potential capacity of a country to produce important innovations which are marketable, by collecting information on patents, research staff, availability of venture capital and a research-friendly environment .Since our aim is to carry out a long-term analysis, we shall only consider the number of patents granted in Spain, which is the only one of the variables cited for which we have information in series covering the whole of the 20th century. Thus, in Graph 6 the correlation between entrepreneurial initiative and the net figure for firms set up, as measured by the net number of firms set up, and patents granted is presented; in both cases, the variable has

been dimensioned in accordance with the population size. We did not wish to take into account any information subsequent to 1985 because the following year Spain signed the Munich Agreement, by which requests for European patents were admitted when deposited in the European Patent Office. The signing of this agreement, in addition to that of the Patent Cooperation Treaty in 1989, has meant an enormous fall in the number of patents registered in the Oficina Española de Patentes y Marcas.

Graph 6: Correlation between entrepreneurial initiative and patents granted in Spain, 1900-1985



Note: Entrepreneurial initiative (with Neperian logarithmic transformation to correct heterocedasticity) is measured in the y-axis by the net number of firms set up (constitutions minus liquidations) for each million inhabitants. The technological indicator (in the x-axis) is patents granted per million inhabitants. Data regarding patents from 1986 onwards have not been collected because the effects of signing the Munich Agreement break the continuity of the series .The correlation coefficient is 0.49. Source: Data from Carreras and Tafunell (eds.) (2005).

The findings of the correlation analysis show a weak relationship between entrepreneurial initiative and patents, albeit a positive one. Historians have explained to us that Spanish patents never became a business reality and on numerous occasions foreign firms patented in Spain simply to prevent the product being copied, with no intention of subsequently making a productive investment. The strong technological dependence of Spanish firms leads us to think that the "technological change" variable has not been a great determining factor in the makeup of entrepreneurial initiative in the country.

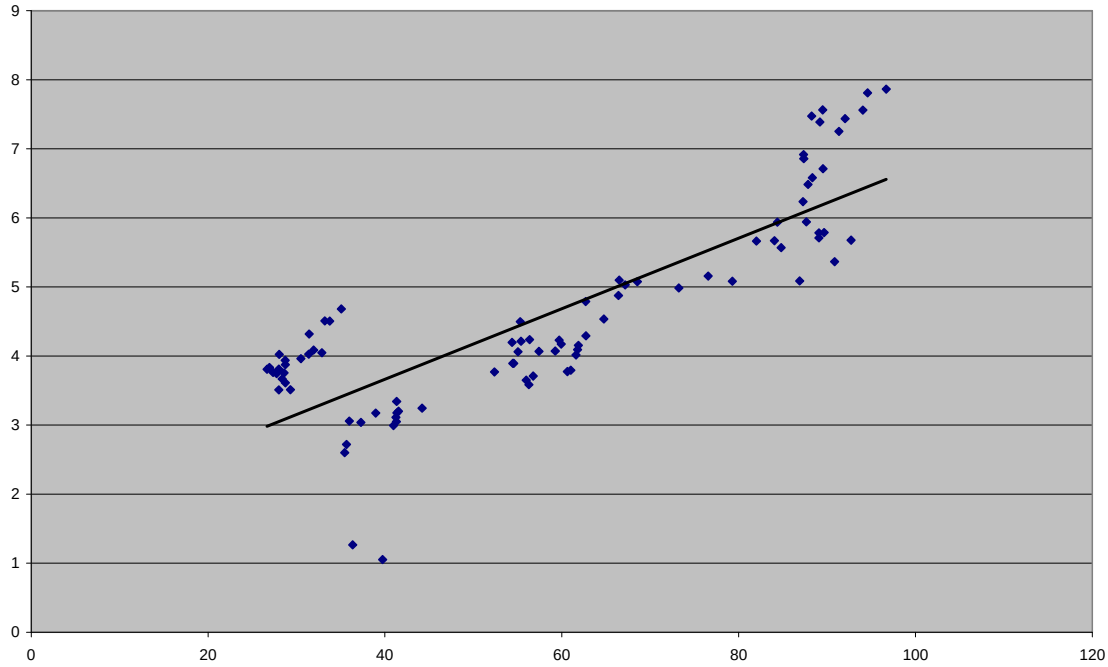
Entrepreneurship and financial resources

Another of the problems which the Spanish entrepreneur traditionally has had to face has been the dearth of financial resources .The Spanish financial system only began to acquire a certain importance after the repatriation of capital that ensued to the "colonial

disaster of 1898", and especially during the highpoint of the First World War. The 1921 Ley de Ordenación Bancaria (banking regulation law) imposed order on this process by creating the first Registro de Bancos y Banqueros (registry) and also the Consejo Superior Bancario (an official council) as a regulating body —in fact a self-regulating one. The Primo de Rivera dictatorship was supported by the banks in launching its economic development programme, with nationalist, interventionist and protectionist overtones. These years were ones of economic progress in which people for the first time began to talk of "banking power" (Tortella, 1994).

In Graph 7 it was decided to correlate the entrepreneurial initiative rate which we have been using (firms constituted per million inhabitants) with an indicator of the inflow of financial resources into the economy: the coefficient of broad money supply and GDP. This indicator was kept at values of around 30 per 100 in the early decades of the 20th century. The enthusiasm brought on by the First World War and the policies of the Primo de Rivera dictatorship led them to exceed 40 per 100 when the war ended. After the Civil War, which had few negative consequences for the banks, there were frequent figures of around 60 per 100 during the early years of Francoism. Later on, there was non-stop growth during the 60s and when the Franco dictatorship came to an end (1975) it was already at 90 per 100. The economic and financial crisis of the 1970s and 1980s meant that there were no fresh advances till the final years of the century.

Graph 7. Correlation between entrepreneurial activity and availability of financial resources, 1909-1995



Note: Entrepreneurial initiative (with Neperian logarithmic transformation to correct heterocedasticity) is measured in the y-axis by the net number of firms set up (constitutions minus liquidations) for each million inhabitants. Financial resources indicator on the x-axis is broad money supply (M3 from 1979) as a percentage of GDP (at market prices). The source stopped in 1998. The correlation coefficient is 0.83. Source: Data from Carreras and Tafunell (eds.) (2005).

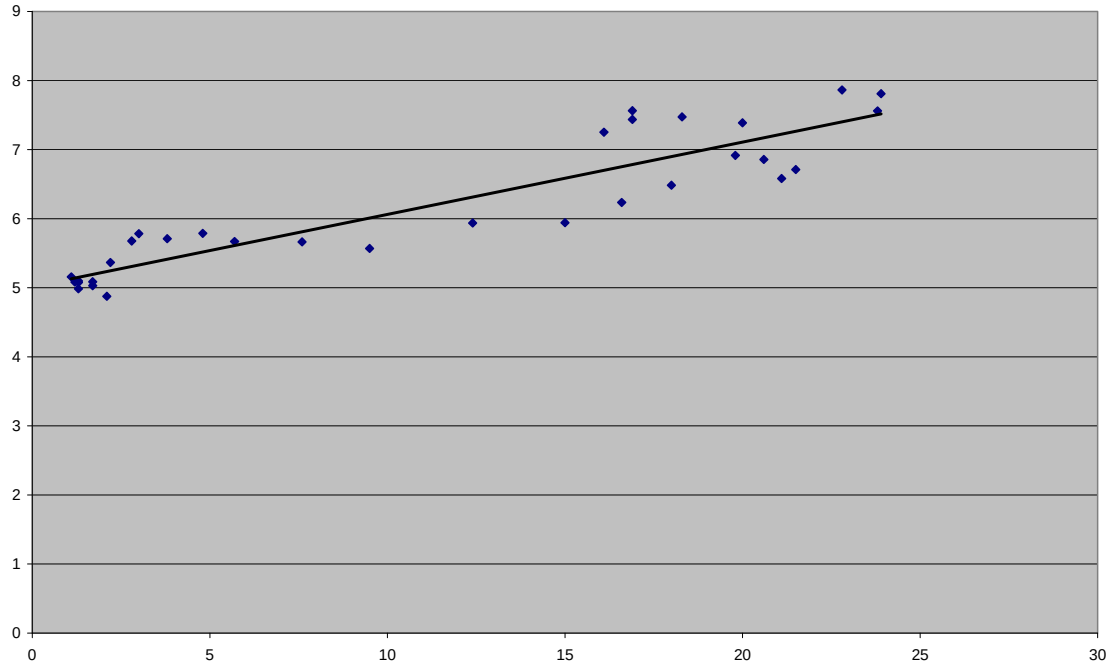
The graph alongside these lines clearly shows the considerable importance exerted in Spain by the availability of credit for entrepreneurial initiatives.

Entrepreneurship and unemployment rate

Something which has been discussed for a long time is whether individuals become entrepreneurs through opportunity or need. In less developed societies people, where few employment opportunities exist, it seems many people produce entrepreneurial spirit because of the impossibility of getting a job which is attractive and well paid. In developed societies, this situation may occur when there is a high rate of unemployment.

In Spain, we have had reliable unemployment statistics since 1964. In Graph 8 we have sought the correlation between unemployment rate and entrepreneurial initiative for the period 1964-2000. Levels of unemployment were exceptionally low during the boom of the 60s, reaching in 1970 a rate of 1.2 per 100. However, between 1970 and 1985, there was a continuous, sharp rise in unemployment: 3.8 per 100 in 1975; 12.4 per 100 in 1980; 21.5 per 100 in 1985. In the second half of the eighties unemployment fell, but it rose once more in the early 90s, so that by 1995 unemployment stood at 22.8. From this time onwards, there has been a steady fall in unemployment in the years before the current world crisis.

Graph 8.Correlation between entrepreneurial initiative and unemployment rate, 1964-1995



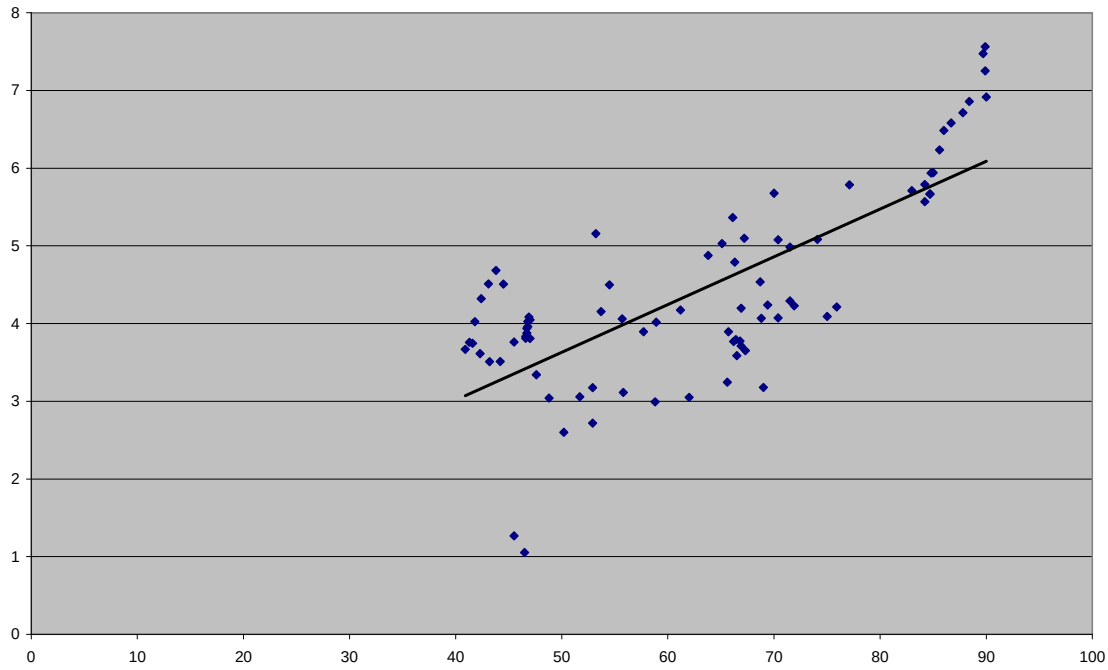
Note: Entrepreneurial initiative (with Neperian logarithmic transformation to correct heterocedasticity) is measured in the y-axis by the net number of firms set up (constitutions minus liquidations) for each million inhabitants. The unemployment rate is offered on the x-axis. The correlation coefficient is 0.91. Source: Carreras and Tafunell (eds.) (2005).

The graph confirms that an important part of Spanish entrepreneurial initiative in the second half of the 20th century has been in response to the high unemployment rates recorded. However, in recent years, when unemployment has fallen, entrepreneurial initiatives have continued to flourish. That may be an indicator that the image of the entrepreneur has improved in Spanish society and many people, when entering the labour market, have creating a firm as their first choice. This is a characteristic of the most advanced societies.

Entrepreneurship and education

The final factor which we shall analyse will be education. This analysis will be made by correlating the entrepreneurship rates with primary and higher education levels. For the primary education level, the indicator will be the number of children in school (from the ages of 5 to 14) where Spain has historically lagged a long way behind other Western European countries. In the years preceding the Primo de Rivera dictatorship, the primary school enrolment ratio was steadily around 50 per 100. Investment in public education during the dictatorship and the Second Republic induced a growth in this figure to 70 per 100 around the time of the beginning of the Civil War. In the early years of Francoism the figure slipped back again, since many children left school to beg or help their families in those difficult years. No significant progress was seen in school attendance until the Ley General de Educación (education act) of 1970. Afterwards, when democracy was restored in 1977, and the tax system was modernised, we finally reached a figure which can be considered as full school attendance. Graph 9 appears to show that progress in achieving full school attendance has had a positive influence on entrepreneurial initiative.

Graph 9: Correlation between entrepreneurial initiative and primary education, 1900-1990



Note: Entrepreneurial initiative (with Neperian logarithmic transformation to correct heterocedasticity) is measured in the y-axis by the net number of firms set up (constitutions minus liquidations) for each million inhabitants. For primary education,

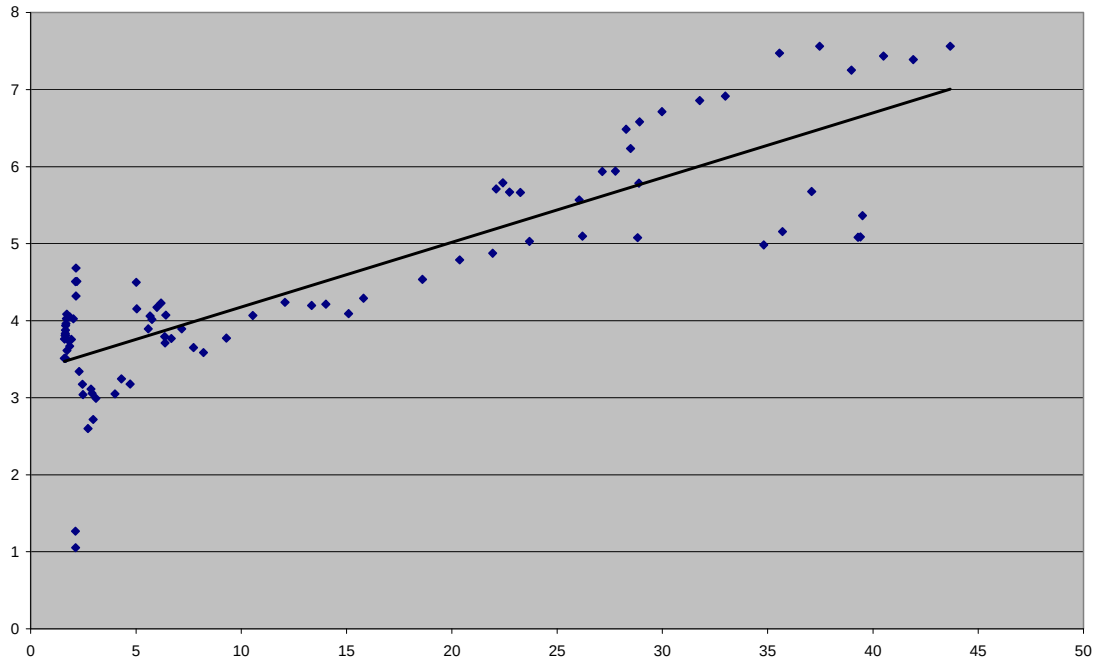
the rate of school attendance of the population age group of 5-14 is offered on the x-axis. The correlation coefficient is 0.75. Source: Data from Carreras and Tafunell (eds.) (2005).

In consonance with the low level of infant school attendance, the progress of secondary education in Spain has been very slow. At the dawn of the 20th century, fewer than 2 per 100 of young Spaniards were engaged in these studies. These low figures showed considerable improvement in the 20s and 30s, nearing 5 per 100, when the Civil War broke out. During the Franco era undoubted progress was made in this field: in 1959 the figure already stood at 14 per 100; in 1972 it reached a first maximum with 39.5 per 100. The economic crisis of the 70s and 80s helped to explain the fall in the rate during those years, so that only in the early years of the 1990s did it go above 40 per 100.

Regarding higher education, the country lagged scandalously behind in 1900: only 16 of every 100,000 24-year-olds had the diploma corresponding to this level. The situation even worsened in the following years, till the initiatives adopted in the 20s and 30s began to take effect and the above-mentioned figure easily outstripped 20. The Franco regime continued to invest in this type of education, and by the late fifties the rate had tripled. In the early 70s 1 per 1000 of young Spaniards had completed university studies. The process gathered speed in the years of democracy, so that by the end of the 20th century around 1 per 100 of those youngsters could proudly claim to have a university degree.

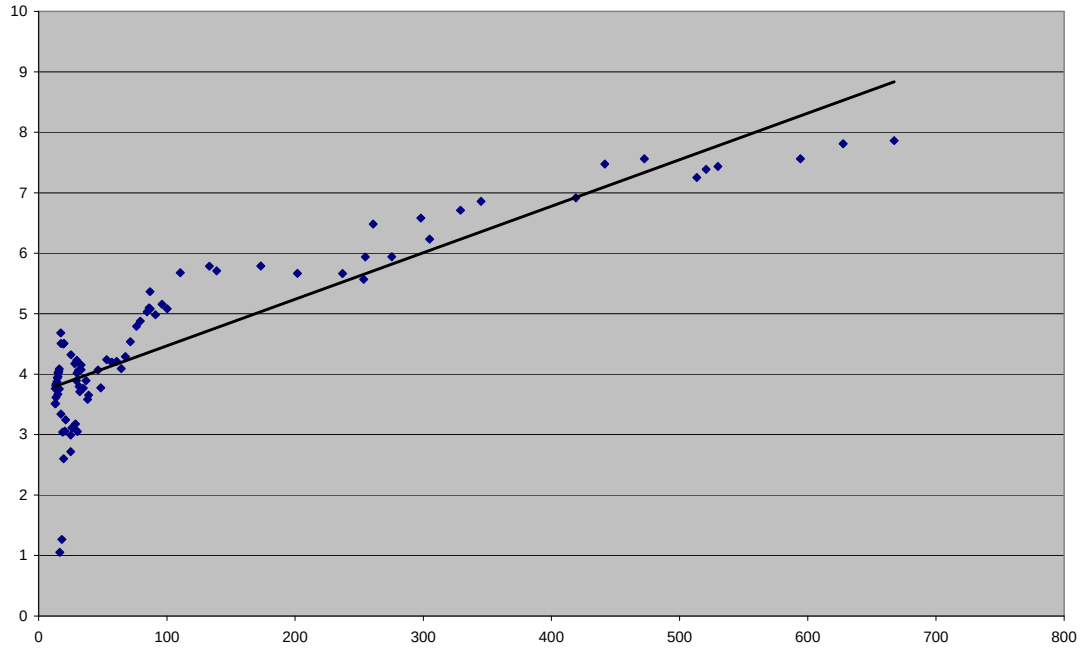
In Graphs 10 and 11 the corresponding analysis is made of the correlation between entrepreneurial initiative and secondary and university training. The finding is a positive relationship in each case. This consideration fits in well with that found in a report coordinated by Domenico Mauriello, a researcher in the Istituto Guglielmo Tagliacarne, of Rome, for the Observatory of European SMEs (Mauriello, 2002) .The Mauriello report stresses that new entrepreneurial initiatives in Spain are being started up by people under the age of 40, who were well-trained and tried to apply for their own benefit the knowledge they had acquired in some previous experience of working for others. Only the progress of the Spanish educational system can help us to understand these new realities.

Graph 10: Correlation between entrepreneurial initiative and secondary education, 1900-1993



Note Entrepreneurial initiative (with Neperian logarithmic transformation to correct hetrocedasticity) is measured in the y-axis by the net number of firms set up (constitutions minus liquidations)), for each million inhabitants. For secondary education, the rate of school attendance for the population between the ages of 14 and 19 is offered on the x-axis. The correlation coefficient is 0.85. Source: Data form Carreras and Tafunell (eds.) (2005).

Graph 11: Correlation between entrepreneurial initiative and higher education; 1900-1995



Note: Entrepreneurial initiative (with Neperian logarithmic transformation to correct heterocedasticity), is measured in the y-axis by the net number of firms set up

(constitutions minus liquidations), for each million inhabitants. For higher education the rate of graduate students is offered on the x-axis for each 100,000 habitants aged 24. The correlation is 0.89. Source: Data from Carreras and Tafunell (eds.) (2005).

In an initial approach it seems clear that during the 20th century, Spanish entrepreneurial initiative has been spurred by general economic growth and the extension of training in secondary and university education. The high unemployment level registered in the 1970s and 1980s can also be deemed a factor to be borne in mind, since it creates entrepreneurial vocations through need. The greater abundance of financial resources has been a factor making it easier to put initiatives into practice. Only technological innovation seems to have played no crucial role in the process of entrepreneurial creation. In the following section we will attempt to cast more light on the relationship between education and entrepreneurial spirit from the information available for 1964-2004 in the survey of the working population *Encuesta de Población Activa* (EPA).

Education of Entrepreneurs according to the EPA, 1964-2004

The starting point: a study of Bancaja

Following the line of research on human capital initiated by Mas et al. (1995) and Palafox et al. (1995), Bancaja published in 2003 a work entitled *Actividad y ocupación por niveles de estudios*. This work was widely distributed in the media and its main conclusions were three: 1) the educational level of the Spanish working population showed an impressive rise in the last thirty years of the 20th century; 2) the greater the educational level, the higher the chances of finding a good job; and 3) Spanish entrepreneurs are not characterised on the whole by having a high educational level, falling some way behind firms' managers.

To give support to the first conclusion, data were provided in the work showing that in 1970 88.6 per 100 of those working only had primary studies, whereas in 2000 26.7 of those working were in this situation. At the top, university graduates accounted for 4.3 per 100 of those in work in 1970 and 19 per 100 in 2000. The second conclusion was supported by the fact that those with higher education had maintained activity rates above 70 per 100 throughout the whole period, with a rising trend from 1982, and reaching in 2000 scores very close to 80 per 100. The activity rate in the population with middle studies had grown in the early 80s, stood still between 1986 and 1996 with values around 60 per 100 and, subsequently, had risen once more to nearly 65 per 100. Finally, the population with primary studies had shown a fall in activity, ranging from 50 to 30 per 100, in rounded up figures.

But it was perhaps the third conclusion that caused most surprise: Spanish entrepreneurs had less training than the Spanish average, and certainly they were worse trained than their mangers. In 2000, scarcely 11 per 100 of entrepreneurs were university educated, when, as we have seen, this figure rose to 19 per 100 for the population as a whole. For this reason, even when the percentage regarding non-compulsory secondary studies was very similar (27.8 per 100 in the case of entrepreneurs and 27.4 per 100 in the general case), Spanish entrepreneurs seemed to be characterised as illiterates or with nothing more than compulsory studies to a very great extent: specifically, 61.5 per 100.

The education level of managers was quite different: 54.2 per 100 had university studies (compared to 10.7 per 100 of entrepreneurs) and only 13.7 per 100 had no training or just compulsory education (compared to 61.5 of entrepreneurs). In view of this information, the Bancaja researchers suggested that entrepreneurial activity is quite unlike management. Entrepreneurial activity seems not to need formal education, whereas management activity demands specific knowledge only acquired after long years devoted to study and research in one's field.

The Bancaja work is the only case so far in which use has been made of the EPA provided by the Instituto Nacional de Estadística to measure the influence of education in training entrepreneurial skills (entrepreneurship and management). The work refers to the 1990s and it is our aim to extend the research to the period starting in 1964 up to the present time. This is because during these more than forty years there has been a great structural transformation in the Spanish economy and we may find significant variations compared to the situation described for the most recent period.

The level of studies of entrepreneurs and managers in 1964

Juan José Linz gave a course in 1960 in the Escuela de Organización Industrial (EOI) on introduction to the sociology of the industrial society. It was well received and served for the distinguished sociologist to launch the school on research activities. Thus the project "The Spanish entrepreneur as a human factor in economic development" got under way. The project made it possible to find out, for the first time, the level of training of Spanish managers and entrepreneurs. In this project, Linz had the admirable help of his disciple Amando de Miguel, to the extent that the latter's was the first signature on the article published by both on the topic in the journal *Arbor* (De Miguel and Linz, 1964).

In table 5 there is a summary of the main findings of the study by Linz and De Miguel regarding educational level. It must be pointed out that the research centred on managers of industrial firms, located in thirteen particularly industrialised provinces and with more than 50 workers; that is, the idea was to discover the educational level of the Spanish business elite in a broad sense.

Table 5: Level of studies of managers in firms with more than 50 workers around 1960, by provinces studied and size of firm (% in each province or size)

	Primary	Secondary	Technician	Engineer	Lawyer	Business	Economist	Others	No reply
Alicante	31	12		12	25	6			12
Asturias			7	93					
Barcelona	10	10	19	22	9	19	1	4	4
Biscay	11	7	6	28	13	15	7	10	3
Cadiz	14	64		7			14		
Cordoba-Seville	25	10		25	15	5	5	15	
Coruna-Pontevedra	5	30		20	5	25		15	
Guipuzcoa	20	8	12	20	8	28			4
Madrid	4	14	9	38	12	8	5	8	3
Saragossa	31	12	6	12	6	6		12	6
Valencia	32	16	3	6	19	13		3	6
TOTAL	13	13	10	26	11	14	3	6	4
Small	29	17	6	13	5	17		10	3
Normal	23	14	14	15	7	14	3	7	5
Average	11	16	11	24	9	17	4	4	5

Large	3	8	11	33	17	17	3	5	3
Giant	1	6	7	48	17	6	4	9	1
TOTAL	13	13	10	26	11	14	3	6	4

Note: There are rows which do not add up exactly to 100 because of rounding, but there is some mistake in the Saragossa row, which only adds up to 91. Source: De Miguel and Linz (1964)

The information in the table clearly shows that the engineering profession dominated the Spanish business elite. 26 per 100 of Spanish managers had that qualification and another 10 per 100 were industrial technicians. Some way behind came those who had studied in Business (14 per 100) or Law (11 per 100). The predominance of engineers was absolute in Asturias, a region strong in the mining and metallurgical trades. There was also a strong presence of engineering in the large industrialised provinces (Barcelona, Madrid and Biscay), and of particular note was the fact that in Barcelona the number of industrial technicians was almost the same as that for engineers. The business structure impinged on the higher or lower recruiting of firms engineers: nearly half of the business managers in very large and a third in the large firms were engineers. This proportion fell to less than a half in the very small firms.

Lawyers were the second most important professional group in top management in large and very large firms, followed closely by those with qualifications in Business ("Comercio" in Spanish), special studies which were widely popular before the profession of economist became established. In these firms it was difficult to find managers with no specific form of training, but this, on the contrary, was normal in smaller firms (49 per 100) or reduced size ones (42 per 100). Managers with very little training were common in the Spanish Levant (Valencia, Alicante), a business world which typically is one of small firms, and in Cadiz (Andalusia), where as many as 64 per 100 managers had only basic education.

In the 50s, the State was aware that engineers needed complementary training to be able to carry out their management functions adequately. Thus, the Ministries of National Education and Industry jointly published the Ministerial Order of July 12, 1955, setting up the first Spanish business school: the EOI. The EOI was born in the heart of the Comisión Nacional de Productividad Industrial (CNPI), created by the Government in 1952, to complement the work of the Instituto Nacional de Racionalización del Trabajo (INRT) set up in1946. The aim of all these public bodies was the same, improving the productivity of Spanish industry, but the INRT was part of the self-sufficiency policy initiated by the Instituto Nacional de Industria (INI) in 1941, whereas the CNPI and the EOI were financed by the "American aid" which had begun to arrive in Spain in 1950.

The EOI was to be a fundamental part in the "Americanisation" of Spanish firms, a process that was taking place simultaneously throughout Europe in the wake of the resources provided by the Marshall Plan (Puig, 2003). The EOI provided middle and higher studies. To follow a middle course it was necessary to have an official diploma accrediting a high enough technical or scientific level in the opinion of the school. In order to study the higher grade, an engineering diploma or a university degree in related areas was required. What is more, proof had to be provided of experience in the Civil Service or in business. Therefore, the EOI sprang into life to teach production and business organisation to professionals with higher studies.

The reorganisation of the studies of Political, Economic and Business Administration Sciences, which took place in July, 1953, served to make this branch of knowledge more solid. As is shown in Table 6, registration for these had begun ten years previously, but the first graduates did not emerge until 1948: 37 against the 1,223 registered at the beginning of the degree course! Around 1970, the year in which the Education Act separated studies in Economic and Business Administration from those in Political Sciences and Sociology, the number of graduates came to over a thousand (though the exact figure is not shown in the table). This clearly explains the low number of economists found by De Miguel and Linz among the Spanish entrepreneurial elite around 1960.

Table 6: Students registered and graduates in Political, Economic and Business Sciences, 1943-1970

	Registered	Graduates		Registered	Graduates
1943	1,223		1957	4,082	96
1944	1,021		1958	5,104	99
1945	1,024		1959	5,742	138
1946	1,524		1960	6,365	188
1947	1,890		1961	7,034	189
1948	1,613	37	1962	8,200	176
1949	2,095	85	1963	10,356	334
1950	2,140	92	1964	11,087	345
1951	1,720	75	1965	11,950	502
1952	1,882	56	1966	16,850	378
1953	1,534	94	1967	18,657	827
1954	1,816	90	1968	20,000	782
1955	2,291	74	1969	20,347	964
1956	3,290	46	1970	23,373	n.d.

Source: CECA (1975), pp. 426-429.

By the time of the 50th anniversary of the EOI, two research projects have been carried out on its history, and these enable us to make progress in improving our knowledge of what this business school has really meant (De Diego, 2000; Muñoz, 2005). The source of inspiration for the EOI was the Istituto Postuniversitario per lo Studio dell'Organizzazione Aziendale (IPSOA), which had been recently created in Turin (Italy) under American influence. The industrial engineer, Fermín de la Sierra, head of the Department of Scientific Organisation of the INRT, was given the task of making direct contact with specialists in the United States, and he opted to use as a model the work done by Ralph M. Barnes, lecturer in the University of California in Los Angeles (UCLA), who he had met when he was teaching in the University of Iowa. De la Sierra was responsible for the publication in Spanish, in 1950 of the *Manual de métodos de trabajo* (original title: *Work Methods Manual*) by Barnes, a work which was highly successful and went through various editions. Barnes and De la Sierra were strong supporters of the American methods which sought the "one best time" (F.W. Taylor) and the "one best motion" (F.B. and E.L.M. Gilbreth). These management ideas had already been in existence for four decades and were being replaced by others which stressed the importance of the human factor (the so-called "Human Relations School"), but they were certainly propounded by the team of engineers recruited by De la Sierra to teach in the branch of Production. In the other branch, Business Organisation, the teaching staff took on graduates in Law and Business.

Among the students in the first two academic years of the EOI, there was a predominance of engineers (54), technicians and surveyors (35) but there were also a large number of doctors and graduates in Law and Arts (30) and insurance actuaries and those with diplomas in Business (35). The impression is given that the two branches of the EOI (Production and Business Organisation) tended to be sealed compartments, with highly different views of the business world; on the one hand were the engineers, highly concerned with production, and, on the other, those who thought that accounting, administrative and commercial organisation were as important as production. The chairman of the EOI, Fermín de la Sierra, who was an engineer increasingly interested in business and economic matters, did as much as possible to act as a bridge between both worlds. One effective way was to invite national and international experts who were showing the advantages of engineers and economists collaborating in their work. The course on quality control which was given in 1962 by the American engineer Joseph J. Juran was a true event.

Following along the path of the EOI, other business schools (apart from the EOI branch in Barcelona), soon sprang up; against everyone's predictions, they were set up by religious institutions. The Jesuits added to their long-established Universidad de Deusto (1916) —which had made such a strong contribution to the training of the Basque entrepreneurial elite— business schools such as the Instituto Católico de Administración y Dirección de Empresas (Madrid, 1956), the Escuela Superior de Técnica Empresarial (Bilbao, 1956) and the Escuela Superior de Administración y Dirección de Empresas (Barcelona, 1958). Meanwhile the Opus Dei went ahead with the Instituto de Estudios Superiores de la Empresa (Barcelona, 1956) and the Padres Reparadores weighed in with the Escuela Superior de Gestión Comercial y Marketing, founded in Madrid in 1965.

The heavy presence of the Catholic Church in the field of business training appears to be due to the lack of confidence inspired by the Taylorist paradigm of the Scientific Work Organisation and its dehumanised nature. Books by Jesuits such as Martín Brugarola, Pedro Uriarte or Mariano Sánchez-Gil left no doubt as to the preference of the Church for the Human Relations model against that of the Scientific Work Organisation. Brugarola went so far as to say that the expression "human relations" was the same as "Christian relations" (Guillén, 1995; García-Ruiz, 2003, Chapter 3). Accepting these criticisms, but from a lay viewpoint, the Instituto de Empresa was founded in Madrid in 1973. It is generally agreed that the schools promoted by the Church, the EOI (despite its frequent institutional crises) and the Instituto de Empresa have played a very positive role in training Spanish managers to tackle the challenges of globalisation which have characterised the world economy in recent times.

A source to be tapped: the Survey of the Working Population

The survey EPA appeared in 1964 as a means of completing the available information in the General Population Censuses. The long gaps between each census taking (10 years) and the highly general character of its information made it essential to have specialised statistical research devoted to registering very specific aspects of the workforce. Spain was thus following the recommendations of the International Labour Organisation (ILO) and the pioneering efforts in this field which the large European countries (Germany, France, United Kingdom) were starting to make immediately after the end of the Second World War.

Between 1964 and the present day, the EPA methodology has evolved. The 1964 schedule contained 25 items, including one on "Active population according to its socioeconomic condition and cultural level" (by sexes), which accurately distinguished between different classes of entrepreneurs and managers. The 1972 schedule provided information on our topic in the item "Active population by socioeconomic category, months worked and studies completed", introducing some changes in the definitions of entrepreneurs and managers. In 1976 changes were introduced in the names of the studies, in order to adapt them to international uses, even though up to the year 2000 no official classification of education has existed in Spain

Between the third quarter of 1976 and the first of 1987 the process was started of collecting more detailed information on studies, according to a one-digit coding: 1. Primary Education, 2. Basic Secondary Education, 3. Higher Certificate, 4. Professional Training, 5. Pre-higher Studies, 6. Higher Studies, 7. No formal studies, and 8. Illiterate. In 1987 an item was added to this coding, that of "Three school or faculty courses passed". In 1992 a much more detailed two-digit coding was introduced. Finally, in 2000 a Spanish version of the International Standard Classification of Education (Unesco, 1997) was introduced. Just as there have been changes in the information available on education, similar changes have been seen in the concept of entrepreneur and manager. All in all, we believe that the series presented are sufficiently homogeneous (we stopped at 2004 to prevent us being affected by the change in the methodology of the EPA introduced in 2005).

Education of entrepreneurs in Franco's time (1964-1975)

In table 7 there is a summary of the series-making work we have carried out with the EPA data for the period 1964-1975.

Table 7. Indicators of the educational level of Spanish entrepreneurs, 1964-1975

	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
% Entrepreneurs / Working	37.2	37.6	38.0	37.4	37.0	35.9	34.2	30.4	28.6	29.2	28.7	27.8
% Entr. Males / Entrepreneurs	72.8	71.6	72.4	72.5	72.8	72.8	71.6	70.6	na	na	na	na
% Employers / Entrepreneurs	9.1	8.8	8.9	9.7	9.0	8.9	9.0	7.4	9.7	9.9	9.7	10.5
% Employers Males /Employers	88.0	85.3	85.9	85.2	85.0	84.3	84.6	85.3	na	na	na	na
% Low Educ. Level / Working	93.3	92.6	91.4	92.1	91.2	90.8	89.0	87.4	87.0	84.6	83.5	82.4
% Low Ed. Level / Entrepreneurs	96.7	96.4	96.1	96.0	95.8	95.2	95.2	95.9	99.2	93.9	94.0	93.8
% Low Ed. Level / Employers	83.8	82.1	81.2	82.5	81.4	80.2	75.7	80.6	79.8	76.0	74.2	76.7
% Low Ed. Level / Empoyers in Industry and Commerce	82.5	80.9	79.7	81.7	80.6	79.3	75.1	80.8	80.1	76.6	74.0	76.4
% Low Ed. Level / Employers in Big Industry and Commerce	75.7	72.5	67.6	71.7	71.7	72.5	65.7	na	na	na	na	na
% Higher Studies / Working	1.5	1.5	1.5	1.5	1.5	1.5	2.0	2.0	2.1	2.2	2.2	2.3
% Higher Studies / Entrepreneurs	0.8	0.7	0.7	0.7	0.8	0.8	0.9	0.2*	0.3*	0.3*	0.3*	0.2*
% Higher Studies / Employers	3.8	4.1	3.8	3.8	4.0	4.2	5.2	2.2*	2.0*	2.2*	2.1*	1.6*
% Higher Studies / Employers in Industry and Commerce	4.0	4.4	4.2	4.1	4.1	4.3	5.6	1.8*	1.8*	1.8*	1.7*	1.4*
% Higher Studies / Employers in Big Industry and Commerce	4.4	5.2	4.2	4.5	5.6	3.8	6.0	na	na	na	na	na

Notes: *Possible error in the source, since the data do not fit at all between the information for 1970 and that for 1976. Low level education means not having finished secondary studies. Source: Data from EPA.

The main conclusions we obtained are:

1) Entrepreneurs were a category in relative decline. During the "desarrollista" (high but unbalanced growth) stage of the Francoist economy, the proportion of entrepreneurs in the whole of the working population showed a marked fall, from 37.2 per 100 in 1964 to 34.2 in 1970 and 27.8 per 100 in 1975 .These data are consistent with the increasing number of wage earners in societies emerging from underdevelopment.

2) Men predominated in the whole group. The last known item of data, for 1971, tells us that 70.6 per 100 of entrepreneurs were men.

3) Most were not employers, that is, the only job they created was their own. Employers always accounted for a small fraction of entrepreneurs, around 9-10 per 100. These employers were overwhelmingly male: in 1971, the percentage of males was 85.3 per 100, very much higher than was the case in entrepreneurs as a whole.

4) Entrepreneurs had a lower level of education than the working population as a whole, but employers, particularly those in the most sophisticated sectors, were people who stood out as a result of their education. The advance of education beyond primary levels was to be seen in the working population on the whole, but even in 1975 more than 82 per 100 of those working were illiterate or had only primary studies. That percentage rose to 93.8 per 100 in the case of entrepreneurs, but dropped to 76.7 when only employers were counted (76.4 per 100 if it was in industrial sectors and commerce). For 1970 we have information on employers in large firms, contrasting the fact that in this group only 65.7 were ill-educated, compared to 95.2 per 100 for entrepreneurs and 89 per 100 for all the working population. Obviously the quality of entrepreneurial initiatives improved with education.

5) Higher studies also made progress between 1964 and 1975, but at the end of the Dictatorship little more than 2 per 100 of those working had this level of training. Data inform us that between 1964 and 1975, employers maintained an educational level which was very much higher than the average of the working population and the whole of the entrepreneurs (who had a wretchedly low level). In 1970, about 5-6 per100 employers had completed higher studies, whereas this was true for only 2 per 100 of those in work and less than 1 per 100 of entrepreneurs. EPA data for 1971-1975 on the level of higher education of entrepreneurs and employers are simply not credible. These data do not match at all those presented for 1970 and 1976. It is hard to accept that the level of higher education of employers is lower than the working population.

Education of entrepreneurs awaiting entry in the EEC (1976-1986)

Continuing with our elaboration of the EPA data, we now present Table 8, referring to the education of Spanish businessmen when their greatest challenge was the Spanish entrance into EEC.

Table 8: Indicators regarding the level of education of Spanish entrepreneurs 1976-1986

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
% Entrepreneurs / Working	21,2	20,9	20,9	22,2	21,8	21,8	21,7	22,2	23,1	22,9	22,3
% Entrep. Males / Entrepreneurs	78,2	78,4	79,7	79,8	78,9	78,9	79,1	78,1	78,5	78,1	77,3

% Employers / Entrepreneurs	15,8	15,4	16,2	15,7	15,9	15,5	15,2	14,5	14,6	14,1	14,5
% Employers Males /Employers	91,1	91,7	91,8	91,5	90,8	91,0	90,6	90,7	90,6	90,0	88,5
% Low Educ. Level / Working	80,5	80,0	77,9	80,4	75,3	62,6	71,4	67,9	66,3	63,6	60,8
% Low Ed. Level / Entrepreneurs	90,1	89,4	88,6	88,0	86,3	86,5	85,3	84,0	82,6	80,8	78,4
% Low Ed. Level / Employers	70,1	68,2	66,4	66,6	64,3	64,7	63,9	62,2	57,6	56,4	55,4
% Higher Studies / Working	2,6	2,7	2,9	3,2	3,3	3,4	3,6	4,2	4,5	4,8	5,0
% Higher Studies / Entrepreneurs	2,1	2,3	2,4	2,4	2,7	2,6	2,7	3,1	3,1	3,2	3,5
% Higher Studies / Employers	7,1	7,8	7,3	7,9	8,2	9,0	8,6	10,0	9,5	9,9	9,9

Note: The expression “low education level” means not having completed secondary studies. Source: Data from the EPA.

From analysing the table we derive the following:

1) In times of economic turmoil set off by successive oil crises, the proportion of entrepreneurs as a percentage of those in work fell and remained at figures of around 22 per 100. It has to be borne in mind that the figure of those in employment fell sharply because of the increase in unemployment; consequently, the absolute number of entrepreneurs fell.

2) Though it may appear surprising, the EPA data tell us that males in this period were predominant in the entrepreneurial class to a greater extent than in the Francoist period. Nearly 80 per 100 of entrepreneurs and more than 90 per 100 of the employers replying to the EPA said they were men. It may be that in such a difficult period women entrepreneurs gave up the struggle before men, and settled for other roles in society.

3) Employers seem to have acquired more weight within the group of entrepreneurs, but there may be some methodological problem between the figures for the Francoist period and those for this period, since the leap from 10.5 per 100 in 1975, to 15.8 per 100 in 1976 is too much. In any case, employers tended to fall in number in that period, from 16 to14 per 100, approximately. In this way, during the crisis years, both quality and quantity were lost among entrepreneurs.

4) As has already been mentioned, progress in education was astonishing during these years in which a return to democracy took place. The EPA points out that figures for those working with no or only minimal training, which in 1976 were around 80 per 100 fell to about 60 per 100 ten years later. Entrepreneurs, and particularly employers, followed the same trend, although this did not prevent a situation near the time of Spain’s entry into the EEC of nearly 80 per 100 of the entrepreneurs being practically untrained. In the case of employers, this problem only concerned 55-56 per 100.

5).The effort in education also reached the university, which began to take in large numbers of students. Up to 5 per 100 of those working had a university education in 1986, a figure which was double in the case of employers and reached 3.5 per 100 in the case of entrepreneurs.

The education of entrepreneurs in a Spain involved in globalisation (1987-2004)

The sources help us to prolong the analysis for the years in which the Spanish entrepreneurial class has dealt with the challenge of globalisation, following the entry of Spain in the EEC (1986). It has been a period of growth and convergence towards the living standards of the most developed countries, but also of profound changes in the

economic structure (e.g. tertiarisation, enormous increase in building) and in business (e.g. intensifying of the presence of foreign capital, multinationalism in Latin America, continual mergers and takeovers) in Spain. Indicators on education levels of Spanish entrepreneurs between 1987 and 2004 are shown in Table 9.

Table 9. Indicators on the education level of Spanish entrepreneurs, 1987-2004

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
% Entrepreneurs / Working	21.9	21.2	22.5	19.6	19.2	20.0	20.3	20.6	20.4	20.3	19.8
% Entrep. Males / Entrepreneurs	75.9	75.9	78.8	76.3	75.7	75.2	75.3	74.9	73.3	73.7	74.3
% Employers / Entrepreneurs	15.7	15.8	25.3	19.3	21.0	22.0	21.8	22.5	23.7	25.2	26.4
% Employers Males /Employers	87.2	86.8	92.2	86.5	86.0	84.3	84.2	83.5	82.4	82.4	82.0
% Low Educ. Level / Working	57.3	55.3	51.7	49.3	47.3	45.0	42.3	39.7	37.3	34.3	32.2
% Low Ed. Level / Entrepreneurs	74.9	73.2	63.5	68.3	66.2	63.0	60.3	57.3	53.8	49.4	46.3
% Low Ed. Level / Employers	56.4	53.8	32.1*	52.1	49.6	48.0	46.8	44.8	39.9	36.9	36.3
% Higher Studies / Working	11.0	11.2	11.9	12.3	12.8	13.2	14.0	14.8	15.5	16.9	17.3
% Higher Studies / Entrepreneurs	6.2	6.3	6.2	7.3	7.8	7.7	7.9	8.7	9.9	11.5	11.7
% Higher Studies / Employers	14.1	14.9	9.5	15.3	16.4	14.2	14.4	15.2	17.0	18.6	17.2
	1998	1999	2000	2001	2002	2003	2004				
% Entrepreneurs / Working	19.2	18.2	17.4	17.2	16.6	16.1	16.1				
% Entrep. Males / Entrepreneurs	74.0	74.2	73.8	73.3	73.5	72.8	72.0				
% Employers / Entrepreneurs	27.3	29.8	29.7	30.5	31.7	33.3	33.5				
% Employers Males /Employers	79.7	79.8	79.5	78.0	77.8	78.6	77.2				
% Low Educ. Level / Working	30.2	28.1	25.7	24.0	22.6	20.8	19.4				
% Low Ed. Level / Entrepreneurs	44.5	41.3	38.1	35.8	33.8	31.2	28.1				
% Low Ed. Level / Employers	34.8	32.4	30.2	27.7	26.7	24.0	21.5				
% Higher Studies / Working	17.9	18.4	27.8	28.7	29.3	29.7	30.8				
% Higher Studies / Entrepreneurs	12.0	13.1	19.8	20.5	20.7	21.9	23.7				
% Higher Studies / Employers	17.8	19.2	25.2	25.7	26.1	26.4	28.1				

Notes: *Possible error in the source. By low education level we understand not having completed secondary studies. Source: Data from EPA.

The conclusions are easy to obtain:

1). The entrepreneur has continued his relative decline, since his weight in the working population has gone from 22 per 100 in 1987 to little more than 16 per 100 in 2004. Even so, as we have previously seen, these are entrepreneurs who have actively boosted the creation of firms —albeit with modest amounts of capital— and who continue to play an important role, especially if we compare their situation to that of other large developed countries.

2).The presence of women among entrepreneurs has tended to rise, but still by 2004, 72 per 100 were male. A greater advance was shown among employers, since 87 per 100 of male presence in this section in 1987 fell to 77 per 100 in 2004. Women have managed to make significant progression in this most complicated field, but also in the one which makes the greatest contribution to economic development.

The good news is that the proportion of employers has not ceased to grow within the entrepreneurial group as a whole. In going from 16 per 100 in 1987 to 33.5 per 100 in 2004, the proportion has more than doubled. Employers account for the cream of the Spanish entrepreneurial class. There has been a clear qualitative gain.

4).The poor level of education of the Spanish working population is something which clearly belongs to the past. In contradiction to what is sometimes stated in the world of journalism, there is no better proof of the progress made recently in the Spanish education system than the fact that in 2004 fewer than 20 per 100 of those in employment had no more than a basic level of training (thus inverting the situation existing at the end of the Franco era, when that percentage was 80 per 100). In the nineties, the educational level of employers, as measured, was below the one corresponding to the whole of the working population, something unheard of before. In any case, we are talking, for 2004, of 21.5 per 100 for employers and 19.4 per 100 for those in work, that is, figures which are low and totally acceptable in both cases. For entrepreneurs as a whole, the figure rises to 28.1 per 100, a figure which is not at all alarming.

5) In the vertex of the educational pyramid it is amazing —knowing where we started from— that in 2004 almost 31 per 100 of those in work had completed some form of university studies. Employers, who had always been distinguished by their high level of training, had to yield top spot in the early years of the 21st century, but in 2004 they recorded the highest figure in their history. 28.1 per100 of employers were graduates. Some way behind, with 23.7 per 100, was the majority of the business class.

Conclusions

Economists tend to think that what cannot be measured does not exist. Nonetheless, for a long time we have admitted that J.A. Schumpeter was right in positing at the beginning of the 20th century that the entrepreneurial spirit is one of the key factors in economic development. This "spirit" as such seemed to be difficult to measure and introduce into quantitative models, until following W.B. Gartner and S.A. Shane we no longer thought of the singularity of the entrepreneur (the "traits approach") and a search commenced for environmental factors (economic, institutional, political) which might determine there being more or fewer entrepreneurs in a society at any given moment (the "rates approach").

In the final years of the 20th century, several international institutions (European Commission, OECD, GEM) have shown willingness to finance research to help steer public policies to encourage entrepreneurship, and here the work of P.D. Reynolds and D.B. Audretsch has been outstanding. In Spain, J.M. Valdaliso made the initial approach in 2005 to this new field of entrepreneurial history. Accepting Valdaliso's proposal to measure entrepreneurial initiative by the number of firms created as a proportion of the population, in this work five independent variables have been introduced to explain this initiative: 1) income per inhabitant, as an indicator of the degree of economic development; 2) technological change, as measured by patents; 3) difficulties in funding, as measured by the availability of financial resources; 4) the unemployment rate, which when it reaches high levels could lead to self-employment; and 5) education.

The correlation analysis has shown that a close relationship exists between entrepreneurship and education, which seems to contradict the widespread idea that entrepreneurs are people with little training. The analysis of the training of entrepreneurs through the EPA has been carried out distinguishing the "employers"

within the group of "entrepreneurs". The educational level of the employers has always been very high within Spanish society. Since employers are the most ambitious type of entrepreneur and those with the greatest social impact, clearly education is a tool which makes it possible to improve the quality of the country's stock of entrepreneurs. This study confirms the findings of the pioneering work of De Miguel and Linz (1964) who made it known that in the largest Spanish firms the level of training of their managers was much higher than that of smaller-sized ones.

This study's conclusions are inscribed along the lines of other recent research works — García-Tabuenca et al., 2004 and 2008; Monreal, ed., 2004; Velasco-Barroetabeña and Saiz-Santos, 2007— and give backing to the orientation stemming from the European Commission *Green Paper* on entrepreneurial initiative. They insist that public policies must intensify the relationship between the education system and the business world. That relationship has been the key for understanding the success of the most developed countries, which are those with the most competitive firms.

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APPENDIX

Table A1: Share of public employment on the total, 1970-2005 (percentages)

	Germany	Spain	France	Italy	UK	Euro Area	USA	Japan
1970	11.2	4.8	17.0	11.9	24.4	11.4	16.0	7.7
1971	11.7	5.2	17.3	12.4	25.0	11.9	16.2	7.8
1972	12.2	5.4	17.5	13.1	25.2	12.3	16.2	8.1
1973	12.4	6.1	17.6	13.5	25.2	12.6	16.1	8.2
1974	12.9	6.5	17.7	13.6	25.5	12.9	16.3	8.5
1975	13.7	6.8	18.2	13.8	26.9	13.3	17.1	8.7
1976	13.9	7.2	18.5	14.1	27.2	13.7	16.8	8.6
1977	14.1	7.5	18.6	14.5	27.5	14.0	16.4	8.6

1978	14.2	8.1	18.9	14.5	27.3	14.3	16.3	8.7
1979	14.3	8.7	19.3	14.6	27.3	14.6	16.1	8.8
1980	14.4	9.3	19.6	14.6	27.2	14.8	16.4	8.8
1981	14.6	9.9	20.2	15.0	27.2	15.2	16.0	8.8
1982	14.8	10.4	20.5	15.4	27.1	15.5	15.9	8.7
1983	15.0	10.8	20.8	15.7	27.0	15.9	15.7	8.6
1984	15.0	11.4	21.8	16.0	26.3	16.2	15.3	8.7
1985	15.0	12.2	22.1	16.2	24.7	16.4	15.3	8.7
1986	14.9	13.2	22.5	16.3	24.4	16.6	15.2	8.5
1987	14.9	12.8	22.8	16.6	23.3	16.7	15.1	8.5
1988	14.7	12.7	22.6	16.8	22.4	16.6	15.1	8.3
1989	14.6	13.1	22.6	16.9	21.0	16.6	15.2	8.1
1990	14.2	13.4	22.5	16.8	20.8	16.5	15.5	8.1
1991	na	13.9	22.8	16.9	20.7	16.2	15.8	8.1
1992	na	14.3	23.3	17.0	21.0	16.5	15.9	8.1
1993	na	14.8	24.0	17.4	20.1	16.6	15.8	8.2
1994	na	14.8	24.2	17.6	19.6	16.6	15.7	8.4
1995	na	14.8	24.1	17.6	19.2	16.5	15.6	8.3
1996	na	15.3	24.2	17.4	18.7	16.5	15.4	8.2
1997	na	15.4	23.9	17.1	18.2	16.2	15.2	8.3
1998	na	14.9	23.4	16.8	18.0	15.8	15.1	8.3
1999	na	14.4	23.0	16.6	17.9	15.6	15.2	8.4
2000	na	14.1	22.5	16.4	17.9	15.3	15.2	8.4
2001	na	14.1	22.3	16.5	18.1	15.2	15.4	8.4
2002	na	14.1	22.4	16.3	18.3	15.3	15.8	8.6
2003	na	14.3	22.6	16.2	18.7	15.4	15.7	8.8
2004	na	14.2	22.7	15.9	19.0	15.3	15.5	9.0
2005	na	14.1	22.7	15.9	19.1	15.2	15.4	8.7

Source: Data from the OECD Statistical Compendium.

Table A2: Main structural data of the European firms, 2000 (percentages and thousands)

NUMBER	% micro	% small	% medium	% SMEs	% LARGE E.	TOTAL
Austria	86.28	11.50	2.21	99.56	0.44	226
Belgium	94.84	4.24	0.55	99.82	0.18	543
Denmark	89.94	8.38	1.68	99.44	0.56	179
Finland	93.87	5.19	0.94	99.53	0.47	212
France	93.13	5.71	0.96	99.80	0.20	2,489
Germany	88.13	10.23	1.27	99.63	0.37	3,548
Greece	97.49	2.13	0.25	99.87	0.00	798
Holland	90.42	7.59	1.63	99.64	0.36	553
Iceland	96.30	3.70	0.00	100.00	0.00	27
Ireland	84.95	11.83	2.15	100.00	0.00	93
Italy	95.47	4.07	0.39	99.93	0.07	4,125
Luxemburg	86.36	9.09	4.55	100.00	0.00	22
Norway	92.57	6.29	1.14	100.00	0.00	175
Portugal	93.41	5.56	0.88	99.85	0.15	683
Spain	94.70	4.60	0.59	99.89	0.11	2,698
Sweden	90.04	8.12	1.48	99.63	0.37	271
Switzerland	88.82	9.32	1.86	99.69	0.31	322
U. Kingdom	94.58	4.53	0.72	99.80	0.20	3,490
EU-15	93.18	5.82	0.81	99.80	0.20	19,928

Europe-19	93.10	5.88	0.83	99.80	0.20	20,453
EMPLOYMENT	% micro	% small	% medium	% SMEs	% LARGE E.	TOTAL
Austria	24.03	21.81	19.63	65.47	34.49	2,343
Belgium	42.81	15.63	10.46	68.89	31.11	3,308
Denmark	28.28	22.92	17.55	68.75	31.25	1,584
Finland	26.07	17.24	15.90	59.21	40.87	1,189
France	33.85	18.74	14.20	66.85	33.14	17,398
Germany	28.47	20.29	11.09	59.85	40.15	29,911
Greece	56.79	17.13	12.77	86.69	13.31	1,833
Holland	24.92	18.44	19.12	62.46	37.54	5,445
Iceland	25.86	18.97	8.62	53.45	47.41	116
Ireland	25.40	23.59	20.65	69.64	30.36	886
Italy	48.19	21.14	11.00	80.34	19.66	14,343
Luxemburg	23.67	24.15	25.12	72.46	27.54	207
Norway	31.88	20.95	17.85	70.77	29.23	1,098
Portugal	37.73	23.00	18.15	78.88	21.12	3,130
Spain	46.84	20.00	12.61	79.45	20.55	12,796
Sweden	27.30	18.14	15.92	61.36	38.64	2,249
Switzerland	23.12	22.04	21.65	66.81	33.23	2,600
U. Kingdom	29.30	14.23	11.76	55.30	44.70	21,312
EU-15	34.57	18.87	12.88	66.32	33.68	117,933
Europe-19	34.29	18.96	13.11	66.36	33.64	121,748
ADD. VALUE	% micro	% small	% medium	% SMEs	% LARGE E.	TOTAL
Austria	14.37	17.85	18.64	50.86	49.14	128,650
Belgium	28.66	20.47	15.37	64.49	35.51	150,226
Denmark	21.82	19.14	17.79	58.75	41.25	76,670
Finland	18.43	14.23	11.68	44.33	55.67	70,968
France	17.72	14.54	13.49	45.76	54.24	927,221
Germany	19.29	21.39	19.49	60.17	39.83	1,195,142
Greece	34.12	29.90	18.85	82.87	17.13	139,750
Holland	15.53	16.43	24.10	56.06	43.94	238,433
Iceland	5.81	4.31	2.22	12.33	87.66	23,067
Ireland	6.55	10.92	15.55	33.02	66.98	371,236
Italy	32.10	23.81	15.47	71.38	28.62	1,865,986
Luxemburg	9.21	13.94	51.04	74.19	25.81	33,760
Norway	16.65	15.92	19.40	51.98	48.02	78,410
Portugal	23.51	22.37	20.91	66.80	33.20	260,308
Spain	20.29	17.47	17.54	55.30	44.70	362,283
Sweden	18.67	15.82	17.02	51.51	48.49	132,161
Switzerland	17.32	15.35	15.25	47.93	52.07	186,052
U. Kingdom	8.46	12.68	17.26	38.40	61.60	3,585,836
EU-15	17.41	17.16	17.13	51.69	48.31	9,538,631
Europe-19	17.37	17.08	17.08	51.53	48.47	9,826,160

Source: Data from the Web of the Observatory of European SMEs.