

BUSINESS DEMOGRAPHY

NUT II - CENTRO

Total of active employer enterprises										
Size class (number of employees)	1987 - 2000		2001 - 2005		2005		2006		2007	
	Average number of enterprises	Growth rate	Average number of enterprises	Growth rate	Number of enterprises	Growth rate	Number of enterprises	Growth rate	Number of enterprises	Growth rate
Total	36 983	8,5	70 448	4,8	77 310	8,3	77 454	0,2	79 117	2,1
1 - 4	21 728	10,6	45 963	6,0	51 460	9,3	52 132	1,3	53 266	2,2
5 - 9	8 023	7,3	13 911	3,1	14 672	5,7	14 248	-2,9	14 444	1,4
10 - 19	3 741	5,4	6 008	2,2	6 289	6,6	6 201	-1,4	6 307	1,7
20 - 49	2 275	3,6	3 151	2,7	3 414	9,8	3 388	-0,8	3 583	5,8
50 - 249	1 098	2,6	1 294	0,1	1 347	3,9	1 359	0,9	1 384	1,8
≥ 250	119	0,5	121	1,2	128	0,8	126	-1,6	133	5,6

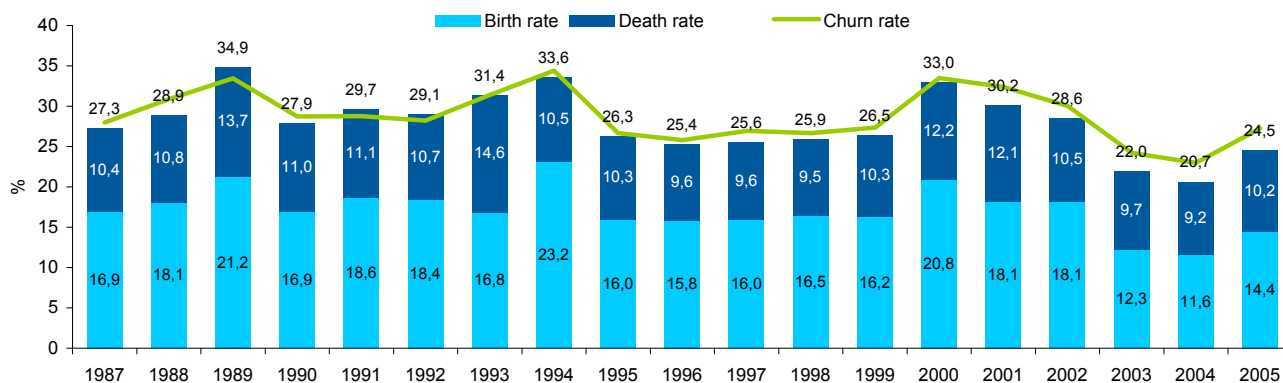
Note: Employer enterprises, according to the definition of the "Manual of Business Demography Statistics" (Eurostat/OECD, 2007), are those which employ at least one employee.

Births Deaths

Size class (number of employees)	Births										Deaths									
	1987 - 2000		2001 - 2007		2005		2006		2007		1985 - 2000		2001 - 2005		2003		2004		2005	
	Average number	Birth rate (%)	Average number	T N (%)	Nº	Birth rate (%)	Nº	Birth rate (%)	Nº	Birth rate (%)	Average number	Death rate (%)	Average number	Death rate (%)	Nº	Death rate (%)	Nº	Death rate (%)	Nº	Death rate (%)
Total	6 624	18,0	9 923	13,8	11 125	14,4	8 750	11,3	8 566	10,8	3 856	11,3	7 243	10,3	6 819	9,7	6 545	9,2	7 851	10,2
1 - 4	5 293	24,7	8 419	17,8	9 174	17,8	7 701	14,8	7 598	14,3	2 998	15,3	6 181	13,5	5 879	12,8	5 731	12,2	6 788	13,2
5 - 9	902	11,7	1 069	7,7	1 213	8,3	746	5,2	688	4,8	523	7,3	705	5,1	629	4,5	559	4,0	714	4,9
10 - 19	281	7,8	286	4,7	427	6,8	201	3,2	179	2,8	201	5,8	215	3,6	188	3,1	157	2,7	218	3,5
20 - 49	113	5,0	115	3,5	247	7,2	84	2,5	85	2,4	95	4,4	102	3,2	95	3,2	75	2,4	93	2,7
50 - 249	32	2,9	31	2,3	62	4,6	17	1,3	15	1,1	36	3,3	37	2,8	26	2,1	23	1,8	34	2,5
≥ 250	3	2,0	3	2,6	2	1,6	1	0,8	1	0,8	3	2,6	3	2,7	2	1,7	0,0	0,0	4	3,1

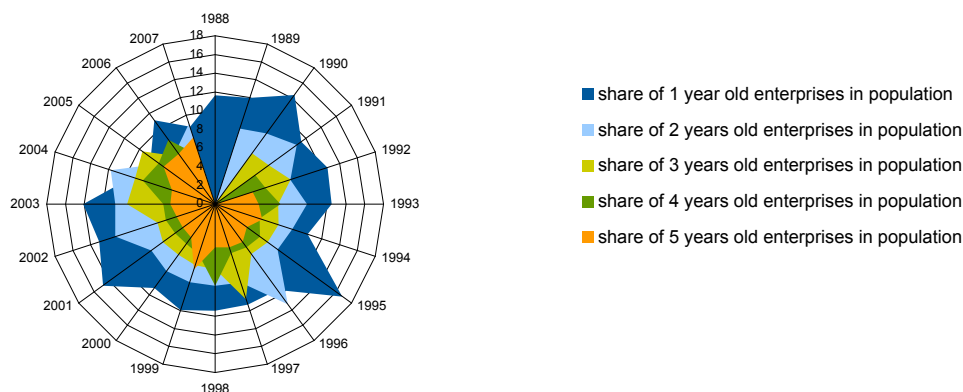
Note: Birth and death rates are composed by a numerator given by the number of total births and deaths, respectively, and by a denominator given by the total number of active employer enterprises in the reference period. The birth of an employer enterprise occurs when it starts its activity. It does not include entries into the population due to mergers and acquisitions, restructuring of enterprises or the reactivation of dormant units within a period of more than 2 years. This population is also composed of enterprises that although existed in previous years, were below the one employee threshold. Deaths occur due to the dissolution of the combination of production factors. They don't include exits from the population due to mergers, take-overs, break-ups or restructuring of enterprises. An enterprise death is counted only if it is not reactivated within 2 years.

Churn Dynamics, 1987-2005



Note: The sum of all births and deaths of employer enterprises are at the top of the bars, and correspond to the churn rate.

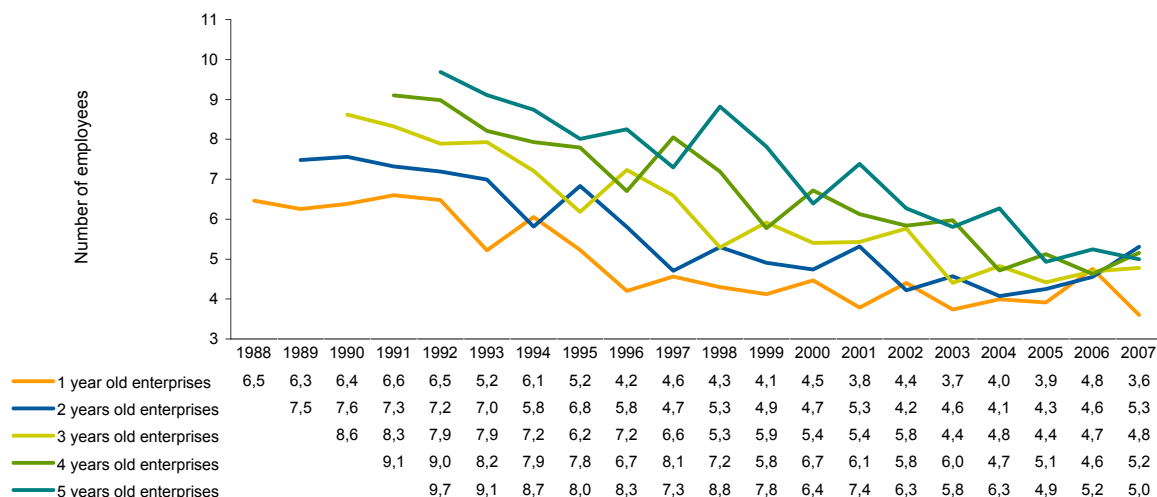
Share of 1-5 years old enterprises in total population (%)



Age and survival, outlook for 2007

Active In 2007	Total Enterprises 79 117 (100%)	Enterprises < 10 employees 67 710 (85,6%)	Enterprises ≥ 10 employees 11 407 (14,4%)
Born in 2006	1st year survivors 6 875(8,7 %)	1st year survivors 6 504 (9,6%)	1st year survivors 371 (3,3%)
Born in 2005	2nd year survivors 7 140 (9,0%)	2nd year survivors 6 367(9,4%)	2nd year survivors 773 (6,8%)
Born in 2004	3rd year survivors 4 759(6,0%)	3rd year survivors 4 383 (6,5%)	3rd year survivors 376 (3,3%)
Born in 2003	4th year survivors 4 304(5,4%)	4th year survivors 3 905 (5,8%)	4th year survivors 399 (3,5%)
Born in 2002	5th year survivors 5 951 (7,5%)	5th year survivors 5 410(8,0%)	5th year survivors 541 (4,7%)

Average firm size (number of employees)



Probability of survival

(for enterprises born in the years below)

Years of survival	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
1	88,4%	85,7%	88,3%	87,2%	88,4%	83,3%	89,0%	88,6%	88,4%	88,3%	88,3%	88,1%	85,5%	85,9%	87,2%	88,4%	88,0%	86,9%
2	76,1%	76,2%	80,1%	78,6%	75,6%	74,1%	79,8%	80,2%	78,2%	78,8%	79,1%	76,3%	74,1%	76,6%	77,9%	79,7%	77,4%	
3	69,2%	69,7%	73,7%	67,7%	69,0%	67,3%	73,5%	73,3%	70,8%	70,5%	69,7%	67,6%	66,7%	69,2%	70,8%	72,3%		
4	63,0%	63,8%	64,9%	62,2%	63,8%	62,6%	68,6%	67,9%	64,0%	63,0%	62,4%	61,3%	60,8%	63,4%	64,5%			
5	58,7%	56,8%	60,7%	57,7%	59,4%	59,0%	63,9%	62,7%	58,8%	56,8%	56,9%	56,8%	55,8%	58,1%				
6	53,1%	52,7%	56,8%	53,8%	55,5%	55,1%	59,7%	57,6%	53,3%	52,1%	52,7%	52,9%	51,2%					
7	50,0%	49,0%	52,8%	50,8%	52,4%	51,2%	55,0%	52,8%	49,6%	48,7%	49,1%	48,9%						
8	47,1%	46,7%	49,8%	48,4%	49,2%	47,3%	50,9%	49,6%	46,8%	45,6%	45,0%							
9	44,2%	44,1%	47,1%	45,6%	45,5%	43,8%	48,3%	46,4%	44,1%	42,8%								
10	41,8%	41,2%	44,3%	43,3%	42,3%	41,4%	45,5%	43,8%	41,3%									
11	39,7%	38,9%	41,2%	40,9%	40,1%	39,3%	43,2%	40,9%										
12	37,8%	36,7%	38,7%	38,2%	37,9%	37,6%	41,3%											
13	35,1%	34,2%	36,6%	36,4%	36,1%	35,7%												
14	32,2%	32,5%	34,8%	34,7%	34,3%													
15	30,2%	30,9%	33,4%	33,4%														
16	28,7%	29,7%	31,9%															
17	27,4%	28,1%																
18	26,0%																	

Note: The non parametric Kaplan-Meier estimator was applied according to the following formula: $\hat{S}(t) = \prod_{j:t_j \leq t} \left(\frac{n_j - d_j}{n_j} \right)$
The probabilities relate to the enterprises ("cohorts") born in the above years mentioned.

Source: GEE, based on A. Nunes and E. de Morais Sarmento, "Survival dynamics in Portugal, a regional perspective", Proceedings of the European Regional Science Association and E. Sarmento and A. Nunes, "Entrepreneurship Performance Indicators for active employer enterprises in Portugal", Temas Económicos nº 9, Ministério da Economia, da Inovação e do Desenvolvimento, based on Quadros de Pessoal, GEP, MTSS.

Employment

Employment in active employer enterprises										
Size class (number of employees)	1987 - 2000		2001 - 2005		2005		2006		2007	
	Average number of employees	Growth rate	Average number of employees	Growth rate	Number of employees	Growth rate	Number of employees	Growth rate	Number of employees	Growth rate
Total	382 742	4,2	539 176	2,1	572 244	6,0	570 605	-0,3	582 600	2,1
1 - 4	50 162	9,4	98 282	4,8	107 378	7,2	107 751	0,3	109 523	1,6
5 - 9	51 854	7,2	89 755	3,0	94 661	5,8	91 813	-3,0	93 163	1,5
10 - 19	49 784	5,2	79 316	2,2	83 118	6,7	82 045	-1,3	83 343	1,6
20 - 49	68 727	3,6	94 929	2,7	102 932	9,7	102 267	-0,6	107 989	5,6
50 - 249	104 534	2,5	119 817	0,0	124 508	4,3	126 415	1,5	128 299	1,5
≥ 250	57 681	0,7	57 077	-0,2	59 647	0,5	60 314	1,1	60 283	-0,1

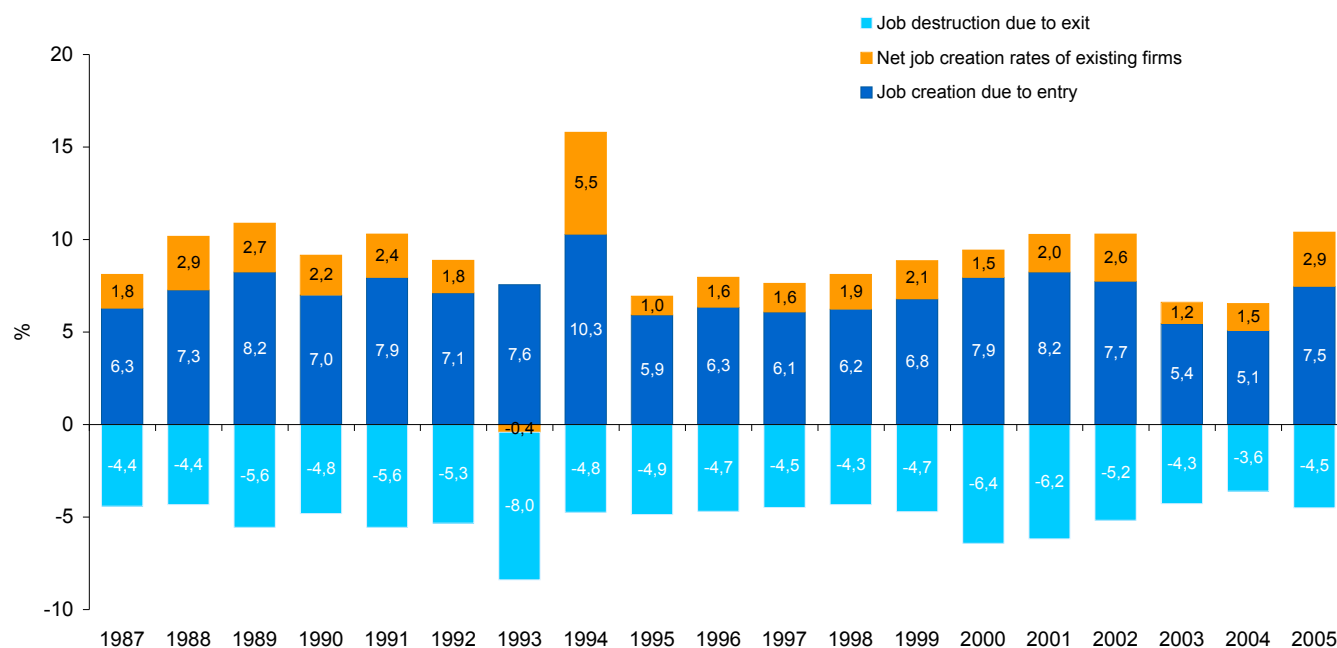
Job creation and destruction

(thousands of employees)

Size class	Creation										Destruction									
	1987 - 2000		2001 - 2007		2005		2006		2007		1985 - 2000		2001 - 2005		2003		2004		2005	
	Average number	Birth rate (%)	Average number	Birth rate (%)	Nº	Birth rate (%)	Nº	Birth rate (%)	Nº	Birth rate (%)	Average number	Death rate (%)	Average number	Death rate (%)	Nº	Death rate (%)	Nº	Death rate (%)	Nº	Death rate (%)
Total	27,5	7,2	33,1	6,1	42,7	7,5	25,2	4,4	23,3	4,0	19,3	5,2	25,6	4,8	22,7	4,3	19,6	3,6	25,8	4,5
1 - 4	10,8	21,9	15,1	15,2	15,8	14,8	13,1	12,1	12,7	11,6	5,9	13,1	10,8	11,0	10,1	10,3	9,7	9,7	11,3	10,5
5 - 9	5,7	11,4	6,7	7,5	7,6	8,1	4,7	5,1	4,3	4,6	3,3	7,1	4,4	5,0	3,9	4,3	3,5	3,9	4,5	4,8
10 - 19	3,7	7,6	3,7	4,6	5,7	6,9	2,6	3,1	2,3	2,8	2,6	5,7	2,8	3,6	2,4	3,0	2,1	2,7	2,9	3,5
20 - 49	3,3	4,8	3,3	3,4	7,3	7,1	2,4	2,4	2,4	2,2	2,8	4,3	3,1	3,2	2,9	3,2	2,3	2,5	2,7	2,7
50 - 249	2,8	2,7	2,7	2,3	4,9	3,9	1,7	1,3	1,2	1,0	3,2	3,1	3,4	2,8	2,7	2,3	2,0	1,7	3,1	2,5
≥ 250	1,3	2,3	1,4	2,5	1,3	2,1	0,8	1,3	0,3	0,6	1,4	2,4	1,1	2,0	0,7	1,3			1,2	2,0

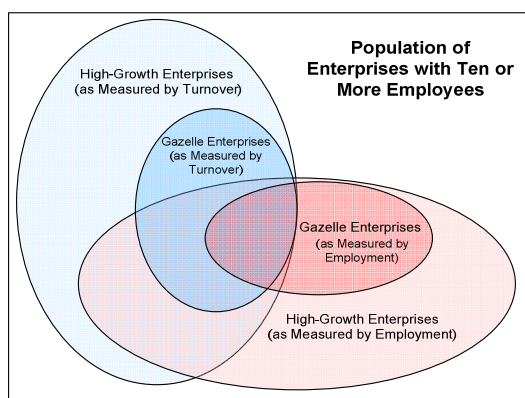
Note: Birth and Death rates are ratios composed by a numerator that corresponds to the total number of employees in employer enterprises that enter and exit the market yearly, respectively, and by a denominator that corresponds to the total of employment in active employer enterprises (according to the methodology of "Manual on Business Demographic Statistics", Eurostat/OECD, 2007)

Net employment growth and its components (1987 - 2005)



Source: GEE, based on E.de Moraes Sarmento and A. Nunes, "Entrepreneurship Performance Indicators for active employer enterprises in Portugal", Temas Económicos nº 9, Ministério da Economia, da Inovação e do Desenvolvimento, based on Quadros de Pessoal, GEP, MTSS.

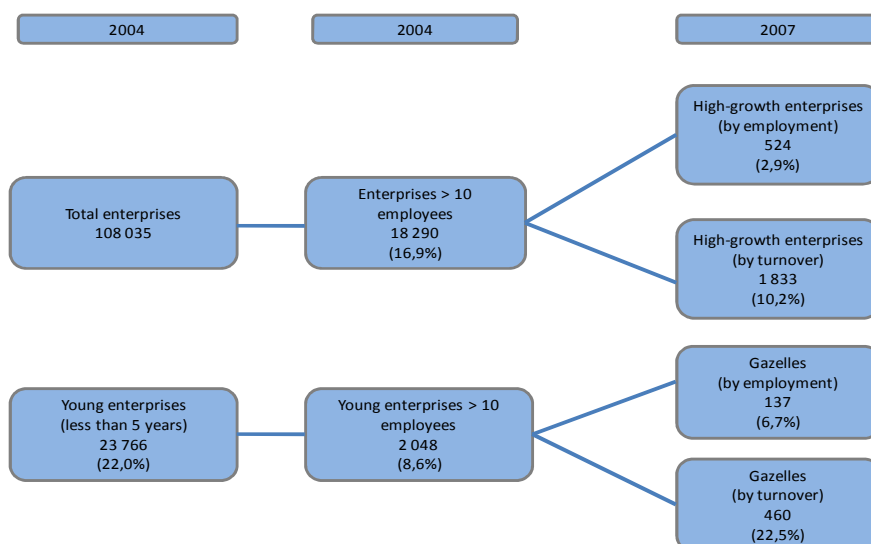
High-Growth Enterprises and Gazelles



A **High-growth enterprise** is an enterprise with average annualised growth greater than 20% per annum, over a three year period. Growth can be measured by the number of employees or by turnover.

Gazelles are high growth enterprises that are up to 5 years old.

High Growth Enterprises and Gazelles, outlook for 2007



High Growth Enterprises and Gazelles, by employment

Year	High growth enterprises				Gazelles			
	Enterprises		Employees		Enterprises		Employees	
	Nº	Weight in the population with at least 10 employees (%)	Nº	Weight in the population with at least 10 employees (%)	Nº	Weight in the population with at least 10 employees (%)	Nº	Weight in the population with at least 10 employees (%)
1990	269	4,11	21.244	7,93				
1991	264	3,90	19.094	6,81				
1992	227	3,21	15.516	5,48	63	0,96	3.706	1,38
1993	199	2,75	16.750	5,88	63	0,93	3.222	1,15
1994	184	2,54	16.771	6,10	59	0,84	2.971	1,05
1995	168	2,33	17.600	6,35	54	0,75	2.997	1,05
1996	213	2,89	16.434	5,84	50	0,69	3.491	1,27
1997	232	2,96	16.427	4,62	43	0,60	2.269	0,82
1998	283	3,42	19.701	6,45	77	1,04	4.550	1,62
1999	278	3,17	19.981	6,34	80	1,02	5.051	1,42
2000	343	3,63	24.964	7,51	72	0,87	3.580	1,17
2001	400	3,88	28.384	8,04	80	0,91	3.770	1,20
2002	364	3,44	21.994	6,43	81	0,86	4.043	1,22
2003	263	2,53	16.872	4,96	59	0,57	3.062	0,87
2004	218	2,09	11.866	3,39	64	0,61	3.018	0,88
2005	232	2,08	15.163	4,10	65	0,63	2.701	0,79
2006	260	2,35	15.354	4,14	59	0,57	2.504	0,71
2007	303	2,66	19.938	4,07	54	0,48	3.477	0,94

Source: GEE, based on E. de Moraes Sarmiento and A. Nunes, "Entrepreneurship Performance Indicators for active employer enterprises in Portugal", Temas Económicos nº 9, Ministério da Economia, da Inovação e do Desenvolvimento, based on Quadros de Pessoal, GEP, MTSS, according to "Manual of Business Demography Statistics", Eurostat/OCDE (2007).

METHODOLOGY

These results are based on the application of the “Manual of Business Demography Statistics” (Eurostat/OCCE, 2007) to the dataset called *Quadros do Pessoal*, from the *Gabinete de Planeamento e Estratégia* of the Portuguese Ministry of Labour and Social Security.

This analysis describes employer enterprises business dynamics from 1985 to 2007, considering firm longevity, survival, size, employment and the group of gazelles and high growth firms.

Only employer enterprises classified in sectors from sections A to Q of the Portuguese Economic Classification of Economic Activities (CAE-Rev.2.1) were considered.

MAIN DEFINITIONS

Enterprise¹: Represents the smaller combination of legal units that produces goods or services with certain autonomy of decision, particularly with respect to the allocation of its current resources. An enterprise might have one or more than one activity in one or more than one location. An enterprise may be represented only by one legal entity.

Employer enterprises: Enterprises from the active population of enterprises with at least one paid employee.

Employer enterprise births: Corresponds to the birth of an enterprise with at least one employee. This population consists of enterprise births that have at least one employee in the birth year and of enterprises that existed before the year in consideration, but were below the threshold of one employee. A birth occurs when an enterprise starts activity. Births do not include entries into the population which result from break-ups, spit-offs, mergers, restructuring of enterprises or reactivations of units which are dormant within a period of two years.

Birth rate: Number of births as a percentage of the population of active enterprises.

Death rate: Death rate of a given reference period (usually one calendar year) is the number of deaths as a percentage of the population of active enterprises. . Deaths do not include exits from the population due to mergers, take-overs, break-ups or restructuring of a set of enterprises. Moreover, deaths do not include exits from a sub-population if it results from a change of activity. Therefore, a death can occur because the enterprise ceases to trade or because it shrinks below the one employee threshold. The Eurostat/OECD manual recommends waiting for two years after the reference period to allow for reactivations, before deaths are calculated.

Survival probability: The survivor function reports the probability of a firm of surviving beyond time t (the moment of observation), that is the probability that there is no failure event (a “death”) prior to t . The function is equal to one at time $t=0$ and decreases towards zero as time (t) goes to infinity. Considering T a non-negative variable, denoting the time to a failure event (“death”), in this case given by the time taken by an enterprise to exit the market from the moment of entry, the survivor function is thus represented by:

$$S(t) = 1 - F(t) = \Pr(T > t)$$

With $F(t) = \Pr(T \leq t)$ being the cumulative distribution function.

To estimate the survivor function, $S(t)$, that is the probability of survival past time t or, equivalently, the probability of failure after t , the non-parametric Kaplan-Meier estimator was applied. For a dataset with observed failure times, t_1, \dots, t_k , where k is the number of distinct failure times observed in the data, the Kaplan-Meier estimate at any time t is given by:

¹ European Council Regulation (EEC), n°. 696/93, Section III A of 15.03.1993.

$$\hat{S}(t) = \prod_{j|t_j \leq t} \left(\frac{n_j - d_j}{n_j} \right)$$

Where n_j is the number of enterprises at risk at time t_j and d_j is the number of failures at time t_j . The product is done for all the failure periods, departing from time t .

High growth enterprises: Enterprises with average annualised growth greater than 20% per annum, over a three year period. Growth can be measured by the number of employees or by turnover.

Gazelles: All enterprises up to 5 years old with average annualised growth greater than 20% per annum, over a three years period. Gazelles by turnovers or employment are all employer enterprises that during a period of at least 5 years have had an annual average growth in terms of turnover or employment greater than or equal to 20 % per year, during the last 3 years, which employ at least 10 employees in the beginning of the 3 years period.

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¹ European Council Regulation (EEC), nº. 696/93, Section III A of 15.03.1993.