

The Evolution of Adult Height in Europe: A Brief Note^{*}

Jaume Garcia

Universitat Pompeu Fabra, Department of Economics and Business

Climent Quintana-Domeque

Princeton University, Department of Economics and Industrial Relations Section

First version: December 2006. Revised version: February 2007.

Abstract

This paper presents new evidence on the evolution of adult height in 10 European countries for cohorts born between 1950 and 1980 using the European Community Household Panel (ECHP), which collects height data from Austria, Belgium, Denmark, Finland, Greece, Ireland, Italy, Portugal, Spain and Sweden. Our findings show a gradual increase in adult height across all countries. However, countries from Southern Europe (Greece, Italy, Portugal, and Spain) experienced greater gains in stature than those located in Northern Europe (Austria, Belgium, Denmark, Finland, Ireland, and Sweden).

JEL Codes: I31, J11

Keywords: Europe, height, ECHP.

1. Introduction

Trying to measure wellbeing in a society using only one measure is a challenging task, if not an impossible one. Usually, economists consider Gross Domestic Product (GDP) per capita or Gross National Product (GNP) per capita as conventional measures of living standards. Consumption per capita is also used. However, the use of these indicators is not without its shortcomings. One basic concern is about how to measure these variables. For instance, what goods should be included in GDP (GNP) is controversial. Another relevant issue, in particular for welfare analysis, is about the comparability of such measures across countries or individuals: both GDP and consumption need to be adjusted using PPP and equivalence scales. Other kinds of adjustments are even more complicated. This is the case of food consumption, which must be adjusted to account for individual nutritional needs.

Stature is a measure that can help us to circumvent these caveats, but even more important, stature is interesting in its own right: it is a useful summary measure of biological wellbeing, as emphasized by Komlos and Baur (2004). First, stature is a measure that incorporates or adjusts for individual nutritional needs (Steckel, 1995). Second, it also meets satisfactorily the criteria set forth by Morris (1979) for an international standard of physical quality of life. Third, stature is a welfare measure that satisfies the approach to the standard of living suggested by Sen (1987): functionings and capabilities should be balanced. Fourth, it generally correlates positively with many health outcomes throughout the life course, and in particular, it correlates negatively with mortality (Waalder, 1984; Barker et al. 1990). Hence, physical stature can be used as a proxy for health, which as any inherently multidimensional concept is difficult to measure. Fifth, height also has been found to be positively associated with earnings, perhaps because height is a marker for cognitive development (Case and

Paxson, 2006). Finally, measuring stature is easier than measuring income, consumption, health status, etc., at least in principle and particular at the regional level by gender, or for social groups. Nevertheless, we should bear in mind that there are measurement error issues depending on whether height is self-reported or directly measured. In spite of its shortcomings, stature complements the standard wellbeing indicators used in economics.

In this note we aim to describe briefly the evolution of adult height in several European countries for the cohorts born between 1950 and 1980. The reported data in the appendix of this paper offers several possibilities for future research by making the mean heights available in a conventionally accessible form. This information is likely to be very useful for social researchers interested in studying socioeconomic and country specific determinants of human stature.

The paper is organized as follows. Section 2 offers a description of the source of the data used to construct average heights. Section 3 shows the evolution of human stature in different European countries for the cohorts of men and women born between 1950 and 1980. Finally, section 4 concludes.

2. Data

The data used in this paper come from the European Community Household Panel (ECHP), Eurostat, a survey based on a standardized questionnaire that involves annual interviewing of a representative panel of households and individuals in member states of the European Union during the period 1994-2001. The ECHP covers a wide range of topics on living conditions, and its standardized methodology and procedures yield comparable information across countries¹. The ECHP contains data on self-reported height for 10 countries: Austria, Belgium, Denmark, Finland, Greece, Ireland, Italy, Portugal, Spain and

Sweden. Other available information is year of birth, sex, year of interview, and migration trajectory.

It is a well known fact that self-reported height is subject not only to random error, but more importantly, systematic reporting bias (Boström and Diderichsen, 1997). The bias depends on several factors: age, sex, education, and mode of interview. Without having another source on measured height, it is not obvious how we should proceed to deal with such an issue. Empirical evidence in Thomas and Frankenberg (2002) and in Ezzati et al. (2006) shows that for the US, men over-report their height more than women of the same age and the bias tends to increase with age for older people (above 60 years old), although the bias for both men and women is more or less constant for the age group between 20 and 50.

Since adult height can be achieved above 18 years old we consider that final height is achieved at 21 to be on the safe side. Also, because of both mortality-related selection and shrinking of the elderly, we are going to focus on individuals below age 51². Moreover, computing heights for this demographic group helps us to deal with the age-bias in self-reported height, if the evidence for the US in Thomas and Frankenberg (2002) and Ezzati et al. (2006) also holds for the European countries under analysis.

For the reasons mentioned above, and given that the collection of the self-reported height data spans from 1997 to 2002, we restrict our sample to those individuals between age 21 and 51 who were born 1950 and 1980. Furthermore, we only include individuals born in the country of present residence during the interview, who did not live abroad before. This last information is not available for Sweden, so we were forced to include all individuals in that case. Also for Sweden, the last interview corresponds to 2000, what means that average

height is not available for the cohort of 1980 because we only have information about height for those who are 20 years old.

We compute average height for each country by cohort and sex. Average cohort height was computed using the available weights in the ECHP. We use the cross-sectional weight in all countries but Sweden, where the baseline weight must be used when using individual information. Information on the reliability of such averages can be better understood when considering the number of observations by each country-cohort-sex cell. Tables 1A and 2A in the appendix present such information. Notice also that the effective sample sizes are substantially smaller because of the panel structure, with most individuals appearing three or four times.

3. The Evolution of Height in Europe

Annual average heights are computed at the country-cohort-sex level (Tables 3A and 4A in the appendix; standard deviations of heights are also reported in Tables 5A and 6A) and quinquennial averages are reported in Tables 1 and 2.³ Three main features of these data stand out. First, we find that heights in all countries increased during this period. Second, the average stature in the Northern European countries is higher than in the Southern ones for all the cohorts and for both males and females. Third, the intensity of such a growth is heterogeneous: Northern versus Southern differences are visible. For instance, looking at Table 1, we see that Finnish men born in the first half of the 50's were 177.8 cm tall, while those born in the late 70's achieved 178.7 cm. The less than 1 cm increase by Finnish males contrasts sharply with the growth experienced by Spanish males: from 171.3 cm to 176.1 cm, almost 5 cm. In Table 2, we note that there are also huge differences between the growth

experienced by Italian and Spanish women, more than 5 cm, in comparison to that of Danish women, only 1.4 cm.

[Insert Table 1 about here]

[Insert Table 2 about here]

This pattern of higher growth rates for both males and females in the Southern European countries becomes more evident when considering Table 3, where annual growth rates between the 1950-55 and the 1976-80 cohorts are reported (0.10% for Southern countries, 0.05% for Northern countries, and the total mean growth is 0.07%). Also we can point out that height growth rates are almost equal for males and females according to this geographical classification. There does not seem to be a clear pattern in terms of gender across countries. Some countries have experienced higher absolute gains for women (Belgium, Finland, Italy, Spain and Sweden) whereas some others have experienced greater gains for men (Austria, Denmark, Greece, Ireland and Portugal).

[Insert Table 3 about here]

Considering the evolution of heights separately for the Northern and Southern European countries (Figures 1 - 4) some generalizations are evident. First, for the Northern countries, the cohorts of Danish males are always the tallest: 180.3 cm at the beginning and 183.7 cm at the end of the period. Second, the reverse situation is shown by the Irish males, who are the shortest in the Northern Europe sample during the whole period, 174.9 cm for those born in 1950-1955 and 177.4 cm in 1976-1980. Similar qualitative results are found for females.

From the evidence in Figure 3 and Figure 4 we can conclude for the Southern European countries that Greeks are the tallest for both males and females and Portuguese are the shortest ones in both cases. Both countries show a similar evolution profile in the period

under consideration. At contrast, Spanish males and females for the last cohorts are growing more significantly than those in the other Southern European countries.

[Insert Figure 1, Figure 2, Figure 3 and Figure 4 about here]

4. Discussion

This paper has offered a brief description of the evolution of human stature for the cohorts born between 1950 and 1980 in several European countries. Our descriptive analysis shows two main results: first, heights increased throughout the period in all countries; second, the pattern of growth in stature was heterogeneous, with Southern European countries growing more than their Northern counterparts. However, there does not seem to be any convergence in height among Northern or Southern European countries considered separately. The data reported in the appendix, permits more detailed analysis of socioeconomic and country specific determinants of average height.

References

- Barker, D., C. Osmond, and J. Golding. 1990. Height and mortality in the countries of England and Wales. *Annals of Human Biology*, 17:1–6.
- Boström, G., and F. Diderichsen. 1997. Socioeconomic Differentials in Misclassification of Height, Weight and Body Mass Index Based on Questionnaire Data. *International Journal of Epidemiology*, 26:860–866.
- Case, A., and C. Paxson. 2006. Stature and status: height, ability, and labor market outcomes. NBER Working Paper No. 12466.

- Ezzati, M., H. Martin, S. Skjold, S. Vander Hoorn, and C. Murray. 2006. Trends in national and state-level of obesity in the USA after correction for self-report bias: analysis of health surveys. *Journal of the Royal Society of Medicine*, 99:250–257.
- Komlos, J., and M. Baur. 2004. From the tallest to (one of) the fattest: the enigmatic fate of the American population in the 20th century. *Economics and Human Biology*, 2:57–74.
- Morris, M. 1979. *Measuring the Condition of the World's Poor: The Physical Quality of Life Index*, NY: Pergammon Press.
- Peracchi, F. 2002. The European Community Household Panel: A review. *Empirical Economics*, 27:63–90.
- Sen, A., 1987. *The Standard of Living*. Cambridge University Press, Cambridge.
- Steckel, R., 1995. Stature and the standard of living. *Journal of Economic Literature*, 33:1903–1940.
- Thomas, D., and E. Frankenberg. 2002. “The measurement and interpretation of health in social surveys,” in C. J. Murray, J. A. Salomon, C. D. Mathers, and A. D. Lopez, eds., *Summary Measures of Population Health*, Geneva, World Health Organization.
- Waller, H. 1984. Height, weight and mortality: the Norwegian experience. *Acta Medica Scandinavica*, 679, suppl:1–56.

TABLES AND FIGURES

Table 1. Average heights by year of birth, men, centimeters

	1950-55	1956-60	1961-65	1966-70	1971-75	1976-80
Denmark	180.3	179.7	181.0	181.7	181.3	183.7
Sweden	179.6	179.4	180.9	180.5	180.4	181.2
Austria	176.3	177.0	179.2	178.5	178.7	179.6
Belgium	176.2	177.3	177.2	179.4	179.2	179.5
Finland	177.8	179.0	179.6	177.9	178.0	178.7
Greece	174.7	175.4	176.6	177.0	178.4	178.6
Ireland	174.9	176.3	176.1	176.9	177.0	177.4
Italy	172.5	174.3	174.9	174.7	175.4	177.1
Spain	171.3	171.7	173.3	174.7	175.7	176.1
Portugal	168.8	170.0	170.0	169.8	172.1	172.9

Source: Authors' calculations from the European Community Household Panel.

Note: The average for Sweden corresponding to 1976-80 is calculated over the cohorts born between 1976 and 1979 because of data availability problems mentioned in the introduction.

Table 2. Average heights by year of birth, women, centimeters

	1950-55	1956-60	1961-65	1966-70	1971-75	1976-80
Denmark	167.2	166.6	167.5	168.5	168.1	168.6
Belgium	163.4	164.9	165.0	166.4	166.2	167.8
Sweden	165.4	166.4	166.7	166.9	166.7	167.2
Austria	165.6	166.2	166.7	166.3	167.7	167.1
Italy	161.4	162.3	163.0	163.9	164.4	166.5
Finland	164.3	164.9	165.5	165.5	165.2	165.9
Greece	163.3	164.1	164.8	165.5	166.4	165.9
Spain	160.4	161.0	161.3	162.8	164.4	165.5
Ireland	162.7	162.7	163.2	164.1	164.7	164.4
Portugal	158.9	159.3	160.5	160.8	162.5	162.5

Source and note: See Table 1.

Table 3. Annual growth rates in average cohort heights, %

	Men	Women
Austria	0.07	0.04
Belgium	0.07	0.11
Denmark	0.07	0.03
Finland	0.02	0.04
Greece	0.09	0.06
Ireland	0.06	0.04
Italy	0.10	0.12
Portugal	0.10	0.09
Spain	0.11	0.12
Sweden	0.03	0.04

Source: See Table 1.

Note: The annual growth rate has been computed as the annual rate of variation $\frac{(\bar{h}_{1976-1980} - \bar{h}_{1950-1955})/\bar{h}_{1950-1955}}{25.5} \times 100$, where $\bar{h}_{1976-1980}$ and $\bar{h}_{1950-1955}$ are the means of the average height of the cohorts born between 1976-1980, and 1950-1955, respectively. 25.5 is the number of years between the middle points of the cohort intervals. For Sweden this number is replaced by 26 because of data availability problems mentioned in the introduction.

Evolution of Height

Figure 1: Northern European countries, men

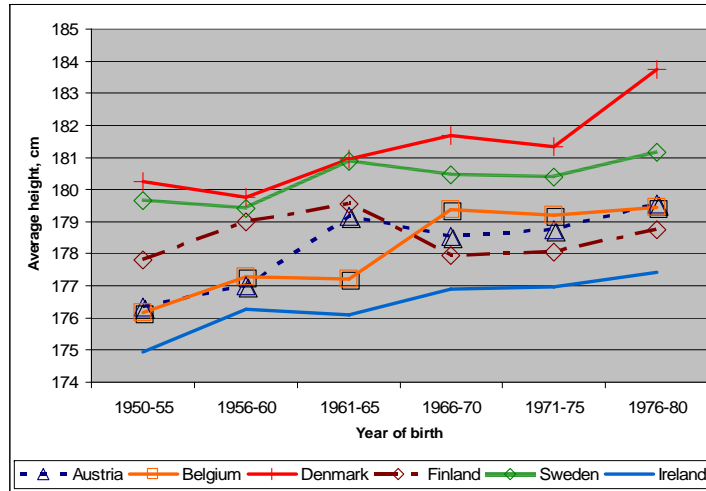


Figure 2: Northern European countries, women

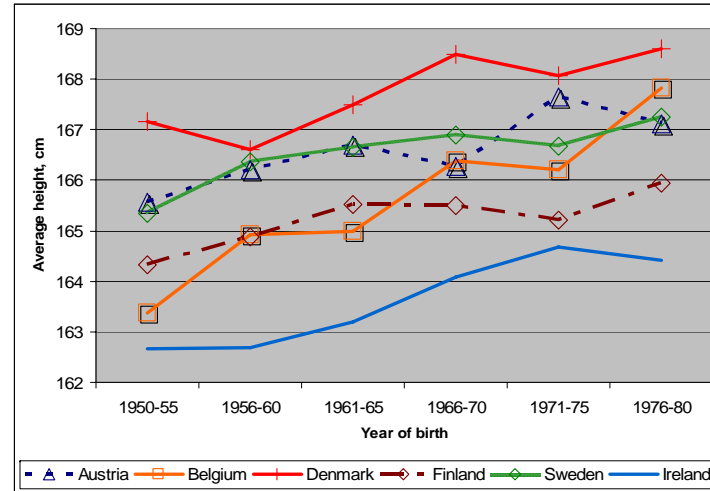


Figure 3: Southern European countries, men

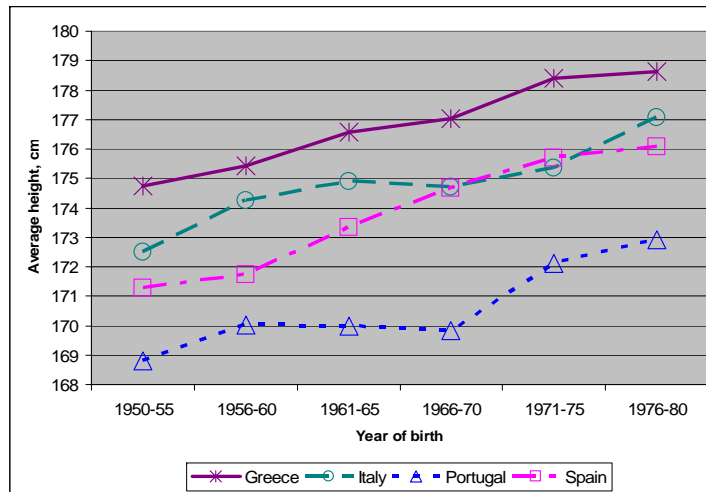
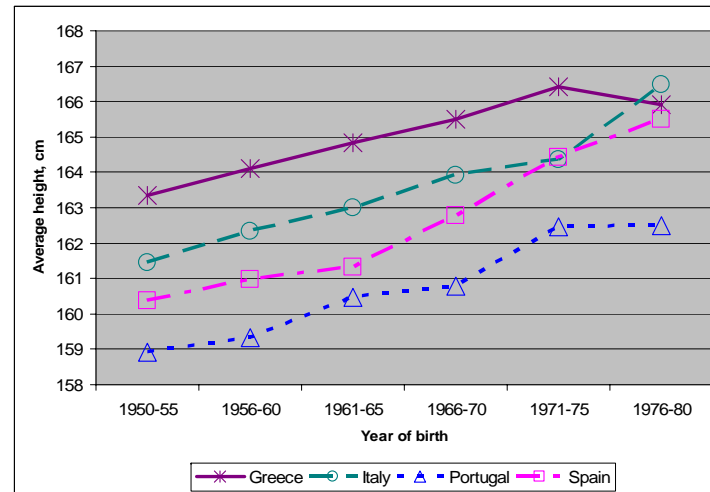


Figure 4: Southern European countries, women



APPENDIX

Table 1A. Number of observations by year of birth, men

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
Austria	119	199	173	168	187	177	180	228	231	190	175	197	222	220	166	193
Belgium	131	140	146	122	163	144	158	180	179	258	260	217	164	219	175	172
Denmark	124	177	104	141	97	150	148	145	185	146	147	123	195	148	152	170
Finland	189	146	173	157	182	133	194	147	141	167	166	154	166	156	163	145
Greece	222	313	243	260	286	284	267	277	304	326	257	299	230	297	262	272
Ireland	176	102	171	143	170	151	177	160	177	158	134	145	153	159	127	174
Italy	435	431	434	426	464	510	409	394	453	532	527	485	523	473	604	597
Portugal	259	315	298	294	311	307	330	298	325	265	299	307	326	365	295	305
Spain	263	345	293	315	345	334	346	362	354	364	412	421	388	352	405	400
Sweden	136	140	147	135	125	150	135	145	153	115	147	155	134	153	174	169
	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	
Austria	178	228	203	214	168	208	195	190	202	191	236	211	156	105	53	
Belgium	125	92	139	142	142	147	169	93	112	86	105	132	71	67	B	
Denmark	183	99	150	137	120	164	179	119	106	213	107	84	81	54	A	
Finland	138	143	137	141	108	102	154	119	136	130	164	189	180	104	69	
Greece	303	293	234	360	304	313	305	247	252	308	296	261	253	157	61	
Ireland	107	157	141	106	179	121	190	163	159	205	191	199	161	107	54	
Italy	664	620	625	559	636	593	684	616	621	515	591	489	395	237	106	
Portugal	304	256	308	284	391	426	509	393	436	543	476	398	288	204	87	
Spain	474	486	459	466	511	484	496	396	535	472	525	571	332	203	111	
Sweden	157	171	146	136	135	148	154	158	140	140	149	127	85	B	..	

Source: See Table 1.

Note: A = Less than 20 observations; B = 20-49 observations.

Table 2A. Number of observations by year of birth, women

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
Austria	129	169	176	124	185	179	242	192	192	238	230	199	230	285	213	194
Belgium	159	139	168	127	144	175	216	172	236	200	248	227	221	221	216	212
Denmark	146	127	166	120	138	113	126	121	145	168	154	167	181	161	161	164
Finland	180	146	172	171	171	182	194	201	142	166	118	170	139	161	165	134
Greece	333	288	238	188	331	289	241	327	310	297	303	293	321	267	329	253
Ireland	143	135	147	156	150	141	138	192	205	163	120	163	138	146	170	138
Italy	426	424	361	443	514	468	517	523	471	507	523	526	477	521	551	535
Portugal	288	327	346	283	326	308	306	359	328	318	350	330	332	333	352	316
Spain	370	237	379	325	355	360	379	362	390	314	359	332	422	415	399	345
Sweden	170	144	146	175	148	152	142	142	143	157	151	143	142	166	173	165
	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	
Austria	188	170	131	177	206	149	189	191	177	171	206	155	132	77	69	
Belgium	194	187	151	164	111	168	142	175	159	158	105	146	104	66	B	
Denmark	186	143	152	115	147	157	173	135	143	163	90	117	80	52	B	
Finland	159	170	128	146	126	136	91	141	121	119	156	180	237	116	90	
Greece	234	267	306	281	268	262	344	298	335	264	286	322	316	184	77	
Ireland	130	160	84	156	122	142	178	174	194	169	200	180	111	97	B	
Italy	595	531	522	621	658	592	674	640	626	548	621	575	332	210	92	
Portugal	322	246	297	233	353	306	371	364	363	451	516	438	320	214	106	
Spain	421	453	479	469	510	494	481	479	531	519	469	501	318	236	94	
Sweden	151	174	144	166	130	143	153	138	165	118	125	113	86	B	..	

Source: See Table 1.

Note: See Table 1A.

Table 3A. Average heights by year of birth, men, centimeters

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
Austria	177.6	175.0	177.2	176.6	174.5	177.1	176.7	176.6	177.5	176.5	177.7	179.2	177.4	180.4	179.1	179.7
Belgium	172.9	176.7	176.6	176.3	178.1	176.5	177.7	178.4	177.2	176.3	176.8	176.8	175.7	178.2	177.4	178.0
Denmark	178.5	182.8	179.8	180.6	181.6	178.1	179.5	180.8	180.2	179.0	179.3	180.3	182.0	180.4	181.0	181.1
Finland	177.2	177.9	177.4	177.6	178.9	177.7	178.0	178.7	179.1	178.6	180.6	178.1	180.7	181.6	179.7	177.7
Greece	174.4	173.7	174.9	174.1	176.2	175.0	174.5	176.2	174.9	174.9	176.7	175.5	177.3	176.6	176.9	176.5
Ireland	173.8	174.8	175.4	176.1	174.8	174.8	176.3	175.9	174.7	175.0	179.4	176.6	175.9	175.1	176.2	176.7
Italy	171.3	171.6	172.7	173.7	171.8	173.9	174.4	174.0	174.4	174.6	174.0	173.0	175.3	175.3	176.0	174.9
Portugal	168.7	169.1	168.0	168.4	169.3	169.3	171.0	168.0	171.3	170.5	169.3	170.9	169.9	170.9	167.2	171.0
Spain	172.4	171.6	171.3	169.5	170.6	172.2	172.1	172.1	172.0	170.7	171.7	172.1	173.7	172.8	173.6	174.5
Sweden	179.0	179.8	179.7	179.6	180.4	179.5	179.1	179.6	180.2	178.9	179.1	180.4	180.9	180.7	181.3	181.2
	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	
Austria	178.8	179.5	180.1	179.5	174.7	179.7	178.1	180.5	178.5	176.9	179.6	180.3	178.2	180.5	179.2	
Belgium	179.9	179.9	182.1	176.9	178.0	178.5	178.6	181.6	176.4	181.0	180.3	180.7	179.3	178.4	[178.6]	
Denmark	182.0	180.9	182.4	182.3	180.8	178.7	180.2	182.1	182.1	183.6	181.7	186.0	182.6	185.4	NA	
Finland	179.5	177.6	177.5	177.7	177.5	178.7	178.2	180.7	176.5	176.1	179.8	179.9	178.2	180.0	175.9	
Greece	176.2	176.9	176.0	178.5	177.5	179.5	176.8	177.7	180.0	178.0	177.8	178.4	179.5	179.3	178.3	
Ireland	178.1	177.4	175.3	176.0	177.7	179.2	175.9	175.5	178.1	176.2	176.6	179.3	175.4	178.3	177.5	
Italy	173.9	175.6	175.0	174.3	174.7	175.6	174.0	174.6	176.8	175.7	176.1	175.9	177.8	178.4	177.2	
Portugal	168.5	169.2	171.1	170.1	170.2	169.9	172.2	172.4	173.2	172.9	171.2	173.8	172.0	173.9	173.7	
Spain	174.4	174.1	174.0	175.0	175.8	174.4	176.7	176.2	175.2	175.9	176.4	176.4	172.7	176.8	178.0	
Sweden	180.0	181.0	181.3	180.2	179.9	180.6	180.8	180.2	180.6	179.9	181.4	181.0	180.9	[181.3]	..	

Source: See Table 1.

Note: NA = Not publishable (number of observations below 20). The average height for the Danish cohort of 1980 (men and women altogether) is 176.0. Means in brackets correspond to 20-49 observations.

Table 4A. Average heights by year of birth, women, centimeters

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
Austria	164.9	164.1	165.4	165.6	166.6	166.8	166.4	166.6	165.8	165.7	166.5	165.9	165.8	166.6	167.1	168.1
Belgium	161.5	163.0	163.1	164.1	163.7	164.8	165.2	163.9	165.1	165.0	165.4	165.4	163.7	165.4	164.3	166.0
Denmark	167.4	166.7	168.5	167.8	168.0	164.7	165.8	167.0	166.3	168.1	165.9	167.0	167.4	167.6	166.1	169.4
Finland	164.1	165.1	163.4	164.4	164.5	164.5	164.2	164.1	165.8	165.1	165.1	166.3	165.0	165.6	165.0	165.7
Greece	163.3	163.0	162.7	163.6	163.8	163.6	163.8	164.4	163.9	163.9	164.4	164.3	164.6	164.3	164.9	166.1
Ireland	163.1	162.2	163.1	162.3	162.9	162.4	162.5	161.4	162.5	162.3	164.7	162.0	163.7	163.6	162.5	164.2
Italy	161.4	160.6	161.4	161.6	161.7	162.0	162.4	162.4	161.6	162.3	162.9	162.4	163.8	162.3	163.4	163.2
Portugal	157.7	158.7	160.3	159.3	159.3	158.2	159.1	157.9	160.4	160.1	159.0	162.2	160.5	159.0	160.1	160.5
Spain	159.9	160.6	160.3	159.5	161.1	160.8	159.3	160.4	160.7	162.3	162.1	160.8	161.1	160.9	161.9	162.0
Sweden	165.4	165.5	164.7	165.0	165.8	165.7	166.1	166.3	167.1	166.3	166.1	166.4	167.6	166.8	166.2	166.3
	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	
Austria	166.1	167.3	164.9	166.9	166.2	166.8	168.6	167.2	167.7	168.1	166.5	166.5	168.7	166.2	167.6	
Belgium	167.0	165.5	167.4	165.3	166.7	166.2	167.7	164.4	167.0	165.7	166.1	166.8	167.7	170.5	[168.1]	
Denmark	167.8	168.6	168.1	168.9	169.0	166.4	167.5	167.9	168.7	169.9	170.7	167.0	168.7	167.5	[169.1]	
Finland	167.0	166.4	165.3	163.9	164.9	166.2	164.3	163.5	166.1	165.9	166.5	164.6	165.9	167.6	165.0	
Greece	165.3	165.8	165.4	165.7	165.3	166.8	166.5	166.7	166.3	165.9	166.0	165.6	165.9	165.5	166.6	
Ireland	165.9	165.1	166.0	162.6	160.8	164.3	164.5	165.8	163.4	165.5	164.6	164.2	165.0	164.7	[163.5]	
Italy	164.0	163.2	163.8	164.4	164.1	163.7	163.9	163.7	164.9	165.7	165.9	165.5	166.8	166.6	167.8	
Portugal	160.0	161.5	161.4	162.0	159.1	162.2	160.8	162.4	163.4	163.6	161.8	162.6	162.2	162.3	163.7	
Spain	161.9	162.4	162.4	163.6	163.7	163.9	164.2	164.7	164.7	164.7	164.0	165.0	165.3	167.0	166.2	
Sweden	165.8	166.8	167.3	167.5	167.2	167.0	166.2	166.7	167.0	166.4	167.0	166.1	165.7	[170.2]	..	

Source: See Table 1.

Note: See Table 3A.

Table 5A. Standard deviation of heights by year of birth, men, centimeters

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
Austria	7.0	7.8	7.9	6.2	7.6	6.4	6.4	5.4	7.5	6.5	7.9	5.5	7.7	6.5	6.5	6.0
Belgium	7.4	5.5	7.0	7.8	6.5	6.2	5.9	7.2	6.9	6.6	6.6	7.1	8.2	7.9	5.0	7.3
Denmark	5.8	7.7	7.1	7.6	6.9	6.0	6.1	6.6	5.4	5.4	7.0	5.0	5.6	5.8	5.8	9.3
Finland	6.4	5.3	5.6	5.7	6.2	7.6	6.8	5.9	6.7	6.7	7.0	5.9	7.9	7.1	6.7	5.7
Greece	6.2	6.1	7.4	6.7	7.1	6.8	6.3	6.7	6.3	6.6	6.7	5.8	6.7	5.4	6.3	6.6
Ireland	7.0	7.2	8.3	4.8	6.7	6.9	6.1	5.5	7.9	6.8	6.5	6.2	7.2	5.5	7.1	6.7
Italy	5.8	6.8	7.0	8.1	6.7	6.2	7.2	7.0	6.6	6.0	7.4	7.0	6.7	8.0	7.1	6.5
Portugal	6.9	7.5	6.4	6.6	5.9	5.9	7.1	6.6	5.6	6.1	6.3	6.3	7.3	7.1	5.5	5.8
Spain	6.3	6.6	7.5	7.1	7.0	6.3	7.6	6.9	6.5	7.4	6.5	6.8	6.4	7.5	7.3	6.5
Sweden	6.9	7.0	7.3	7.3	6.6	6.8	6.3	7.2	7.0	7.1	6.6	6.9	7.4	6.6	7.7	7.5
	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	
Austria	6.7	5.7	7.4	6.3	9.1	5.6	6.8	7.3	6.5	8.7	6.0	7.1	8.0	7.1	6.1	
Belgium	7.9	5.0	5.8	6.6	6.6	9.0	7.3	7.0	8.7	6.1	10.1	6.0	6.0	8.6	[6.6]	
Denmark	8.5	6.5	7.7	6.7	5.9	6.8	5.7	7.1	7.9	5.9	7.8	5.5	6.8	6.8	NA	
Finland	7.5	5.6	6.2	7.1	6.5	6.8	5.9	6.9	6.5	7.9	6.2	7.2	7.4	8.4	5.9	
Greece	6.7	6.1	8.6	6.5	6.5	7.6	6.3	6.8	7.8	7.0	6.2	6.4	7.6	7.6	7.6	
Ireland	6.6	6.8	6.5	6.0	6.5	6.2	8.3	8.7	5.9	9.1	7.6	7.5	7.4	8.9	6.3	
Italy	6.6	7.0	7.1	6.9	6.8	7.6	7.0	6.7	6.6	6.6	6.4	7.4	6.3	7.2	6.0	
Portugal	6.5	6.2	6.2	6.3	5.7	6.4	6.1	6.7	6.8	7.6	7.5	6.8	7.7	7.6	8.2	
Spain	7.6	6.6	7.8	7.1	6.5	6.4	7.4	7.5	7.3	8.6	6.7	7.3	8.1	7.4	6.9	
Sweden	6.9	7.7	7.5	7.2	7.0	7.5	6.8	6.7	6.1	6.6	7.6	6.5	6.8	[7.5]	..	

Source: See Table 1.

Note: NA = Not publishable (number of observations below 20). The standard deviation of height for the Danish cohort of 1980 (men and women altogether) is 6.1. Means in brackets correspond to 20-49 observations.

Table 6A. Standard deviation of heights by year of birth, women, centimeters

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
Austria	5.0	4.9	7.1	5.1	4.3	5.2	5.6	6.7	4.7	6.4	5.1	5.2	6.2	5.5	4.1	4.3
Belgium	5.7	8.2	6.6	5.8	5.9	5.8	6.0	5.5	6.0	5.9	6.0	6.6	6.6	6.5	5.8	5.9
Denmark	5.7	5.3	5.5	5.0	6.0	5.8	6.1	5.4	5.1	6.0	5.8	5.9	6.3	4.4	5.6	6.0
Finland	6.4	6.7	5.4	6.3	6.5	6.5	5.0	5.7	6.5	6.9	6.6	6.3	5.3	5.4	5.9	7.2
Greece	5.6	5.2	5.0	5.2	6.1	5.3	5.0	5.8	5.6	5.4	5.7	6.2	5.0	5.3	5.1	4.9
Ireland	6.7	6.6	6.3	6.6	5.7	6.7	6.0	6.1	7.3	6.6	5.2	7.4	7.0	5.4	7.2	7.9
Italy	6.6	6.9	5.6	5.8	6.6	6.8	5.8	5.6	6.0	5.7	5.8	6.1	5.5	5.9	6.3	5.6
Portugal	5.9	8.7	5.1	5.6	5.7	5.6	5.3	7.7	5.3	5.1	5.9	5.0	5.7	6.0	5.6	5.3
Spain	5.6	6.2	5.7	5.8	6.0	5.5	5.7	6.4	5.7	5.8	5.8	6.4	7.0	5.2	6.4	6.1
Sweden	5.6	6.7	5.8	5.3	6.2	6.0	6.8	6.8	5.2	6.5	6.7	6.5	6.4	6.2	5.7	5.7
	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	
Austria	5.2	5.7	5.6	6.3	12.3	5.5	5.8	5.4	5.0	6.3	4.9	5.8	4.9	4.6	5.6	
Belgium	7.2	6.4	5.8	5.2	6.9	5.2	5.7	9.3	6.3	5.5	6.8	6.3	6.7	5.7	[5.3]	
Denmark	6.8	6.6	7.0	7.1	6.8	5.5	5.5	5.0	5.5	5.5	4.3	5.6	7.4	4.3	[7.4]	
Finland	5.8	6.7	6.2	7.6	6.2	5.9	4.1	11.7	6.1	4.3	6.0	6.3	5.3	6.7	6.5	
Greece	5.4	4.9	6.2	5.6	5.1	6.2	5.4	6.1	6.6	5.3	5.1	5.9	4.6	6.7	7.3	
Ireland	6.0	5.2	6.3	6.2	6.2	6.1	6.9	5.9	6.7	6.8	6.1	6.2	7.5	6.0	[7.6]	
Italy	6.5	6.7	5.1	5.8	6.2	6.0	6.0	5.5	5.4	6.1	6.0	6.4	6.3	6.1	6.1	
Portugal	5.8	4.3	5.4	6.2	6.1	4.7	6.0	6.7	6.9	7.0	6.4	5.9	5.9	5.8	5.3	
Spain	5.5	6.2	5.4	7.0	5.3	6.1	6.2	6.5	5.4	6.9	5.4	7.2	5.9	6.6	6.2	
Sweden	8.2	6.2	5.5	6.1	6.6	6.5	5.6	6.4	5.5	5.8	6.2	5.1	4.4	[6.5]	..	

Source: See Table 1.

Note: See Table 5A.

* We thank Carlos Bozzoli, Angus Deaton and John Komlos for useful comments and suggestions. Garcia acknowledges financial support from SEJ2005-08783-C04-01, and Quintana-Domeque from the Bank of Spain. The source of the data set used in this paper is European Commission, Eurostat, European Community Household Panel (ECHP), 1994-2001 waves, contract No. ECHP/31/00 BIS. Eurostat has no responsibility for the results and conclusions of the researchers. All remaining errors are ours.

¹ More detailed information on the ECHP is provided by Peracchi (2002) and The Europanel Users Network (<http://epunet.essex.ac.uk>).

² Evidence in both Thomas and Frankenberg (2002) and in Ezzati et al. (2006) suggests that older people do not update their height, reporting measurement taken from early adulthood.

³ Six-year cohorts are reported for 1950-1955.