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ABSTRACT

The Wage Effects of Social Norms: Evidence of Deviations from Peers' Body-Mass in Europe*

We investigate wage effects of deviations from peer group body mass index (BMI) to evaluate the influence of social norms on wages. Our approach allows for disentangling the influence of the social norm from any (anticipated) productivity effects associated with deviations from a clinically recommended BMI. Estimates of between effects models for 9 European countries for the years 1998-2001 suggest that the influence of the social norm varies considerably between countries and wage penalties are rather found for upward deviations from the norm and for men.

JEL Classification: I10, J30, J70, M51

Keywords: social norms, discrimination, body-mass-index, cross-country evidence, wage effects

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1 Introduction

Despite the manifold casual evidence that social norms influence labor market institutions and social exchange, empirical analyses of the effects of social norms have been rare.[1] A preliminary for empirical investigations on the role of social norms is the agreement on a definition for the social norm. Fehr and Gächter define a social norm as "a behavioral regularity; that is ...based on a socially shared belief of how one ought to behave; which triggers ...the enforcement of the prescribed behavior by informal social sanctions" (Fehr and Gächter (2000, p. 166)). The basic empirical problem is to infer the prevalent social norm from empirical observations. Empirical approaches in the economic literature to measure the influence of social norms have been on the relevance of social norms for the behavior of the unemployed (see e. g. Moffitt (1983), Clark (2003), and Stutzer and Lalive (2004)), sexual activity (see Castronova (2004)), criminal behavior (see e. g. Case and Katz (1991) and Glaeser, Sacerdote, and Scheinkman (1996)) and teenage behavior (see e. g. Kooreman (forthcoming)). Finally, the growing field of experimental economics offers itself to study effects of social norms. This reason is that in laboratory settings it is easier than in field settings to control for the relevant social norm for subjects' behavior, see e. g. Fehr and Gächter (2000), Falk and Fischbacher (2002), and Falk and Ichino (2006).

Even if it would be possible to observe behavior according to social norms it is difficult to link this behavior with economic consequences. If social norms prevail in employment relations one possible sanction for deviating behavior could be lower wages than workers behaving according to the implicit norm. This is possible if wages do not reflect solely the productivity of the worker but also preferences of the employer which are present during wage setting in a Becker (1957) type discrimination model.

In the present paper we suggest norms governing body mass as an avenue to study wage effects of social norms. This is possible because we argue that peers' body mass index (BMI) constitute a social norm in a sense that deviations from the peer group median BMI imply sanctions in the form of lower market wages. Importantly, our empirical strategy allows for disentangling penalties for deviations from peers' BMI (*social norm effect*) from penalties for deviations from an optimal BMI from a clinical point of view (*productivity effect*).

Productivity effect: The optimal BMI from a medical perspective is defined as

[1] However, there have been various attempts to include social norms (or related concepts like social customs and conformity) in economics models, see e. g. Akerlof (1980), Bernheim (1994), Lindbeck, Nyberg, and Weibull (1999), and more recently Sliwka (2006).

a BMI with the lowest risk of any future weight related diseases (diabetes, heart attacks etc.). Finding a wage penalty for deviations from the optimal weight to height measure in estimates controlling for current health status can be interpreted as a lower future productivity reflected in current wages. Employers might sanction anticipated future health risks associated with an unhealthy body shape with lower wages to smooth the life-time payroll. This effect is enforced by rigid labor market institutions which make it costly to dismiss an unproductive worker in the future. Lower wages might also reflect a lower productivity of the worker due to lower investments in human capital because a shorter work life due to future health risks is anticipated by the employee and the employer. Note however, that a lower wage associated with deviations from a optimal BMI might also reflect sanctions for deviations from a norm as constituted by the optimal BMI from a clinical point of view.

Social norm effect: Weight is perceived as volitional (see Goode (2001) or Saporta and Halpern (2002)) and therefore also governed by social norms regarding a "normal" BMI. While part of physical appearance is genetic, a considerable part is accounted to individual behavior and therefore potentially under the rule of a social norm according to the definition in Fehr and Gächter (2000). For instance, sociologists consider the study of obesity as particularly interesting, "because it is considered by the thin or averaged-sized majority as both physical characteristic, like blindness or paraplegia, and a form of behavioral deviance, like prostitution of alcoholism. The obese, unlike the physically disabled, are held responsible for their condition" (Goode (2001, p. 320)). This is supported by evidence that adolescent girls evaluate an obese peer less positively unless she "could offer an 'excuse' for weight, such as a glandular disorder" (DeJong (1980)). We consider it as evidence for the existence of a social norm governing body mass if we do find wage penalties for a deviation from the group norm on body mass.[2] The norm is defined by the gender, age group and region specific median BMI. Lower wages associated with deviations from the group norm reflect employers preferences to deal with workers with a norm-compatible body shape.

While it is in principle possible to investigate other labor market outcomes such as labor force participation or the incidence of unemployment spells we will restrict the current analysis to wages because productivity effects and effects of social norms due to deviations from a reference body mass are presumably easier to quantify in

[2]This approach follows the reactive definition of deviant behavior in sociology. According to the reactive definition deviant behavior (and therefor the respective reference norm) exists, if negative consequences of deviant behavior are observed (Goode (2001)).

wages and therefore easier to disentangle.

Probably it is for the volitional character of body mass that discrimination on the basis of body mass is typically not on the agenda when discussing labor market discrimination. The disregard of discrimination by body stature is astonishing in the light of existing evidence. Roehling (1999) concludes after an interdisciplinary review of empirical research on weight based discrimination in employment that "evidence of discrimination is found at virtually every stage of the employment cycle" (Roehling (1999, p.982)).

Our approach is inspired by Harper (2000), who find that relative weight measures in the form of indicator variables representing the location of the respondent in the gender distribution of body mass for given age are more relevant than absolute measures of obesity. A similar approach is followed in Saporta and Halpern (2002) who use relative weight measures to control for a potentially different distribution in body mass in a sample of lawyers. While these studies emphasize the importance of identifying the influence of weight differences from a norm there have not been any attempts to disentangle norm effects from productivity effects so far.

The present paper aims to take a careful approach on the influence of body mass on wages avoiding several shortcomings in existing studies. We take account of direct health problems related to body shape by controlling for subjective health assessments and doctor visits. Since body mass increases naturally with age, the sample is restricted to workers between 19 and 44 of age to avoid a structural break in the body mass-wage relation. By including dummy variables for deviations in the lower and upper direction of a reference body mass we allow for a non-linear relation between body mass and wage. Beside the study by García and Quintana-Domeque (2005) this is the only study providing multi-country evidence on the weight-wage relation with separate estimates for each country. The latter is, however, indispensable as different labor market institutions prevail in the different European countries.

The study of wage effects of physical appearance attracted the interest of economic research in the nineties with the seminal work by Hamermesh and Biddle (1994) and Averett and Korenman (1996). Recently, the availability of longitudinal data providing information on weight and wages has stimulated the application of different econometric approaches to come closer to a *causal* relation between weight and wages. The more recent literature has been particularly inspired by Cawley (2000 and 2004) and Behrman and Rosenzweig (2001). We will discuss these approaches and its implications for the current work below.

The availability of standardized longitudinal European data providing information on various socio-economic characteristics stimulated a recent interest on the weight-wage relation in Europe and in a cross-country context in particular. Sousa (2005) and d'Hombres and Brunello (2005) apply a propensity score and an instrumental variables approach, respectively, to identify a causal relation between body weight and wages. However, these studies exploit the informational content of a cross-country comparison only to a limited extent. García and Quintana-Domeque (2005) is the only study providing evidence for wage effects of body weight on wages in the different European countries. None of these papers attempted to disentangle productivity effects from social norm effects in the relation between body mass and wages.

The paper is organized as follows. The next section describes the approach to identify an influence of the social norm concerning body mass on wages. Features of the data and the sample used in this paper are reported in section 3. Section 4 describes the results which are discussed in more detail in section 5. Section 6 concludes.

2 Empirical Approach

We first describe our empirical strategy to disentangle penalties for deviations from peers' BMI from penalties for deviations from optimal BMI. After that we discuss some implications from the different approaches to identify a causal relation of body mass on wages for the present paper.

2.1 Peers' body mass and the concept of an optimal BMI

Our central approach includes dummies for deviations from the social norm BMI along with dummies for deviations from the optimal BMI in a clinical sense in a wage regression. Finding a significant effect for the influence of a deviation from the social norm governing BMI and not for the clinical dummies would indicate an influence of the social norm. To be more precise, effects of the social norm on body mass are identified by those individuals who have a clinical but not socially acceptable BMI whereas any (anticipated) productivity effects of the body mass are identified by those who have a socially but not a clinically acceptable BMI. We take the gender and broad age group specific median BMI for each broad region within a country and observation year as the prevalent social norm for the weight-height relation for the individual. This approach is related to the approach formulated in Alessie and Kapteyn (1991). According to this approach a set of people who share certain characteristics form a *social group* and the social group to which an individual belongs to could serve as a proxy for his or her reference group.

Deviations from a social norm are represented in our preferred specification in Equation (1) by two dummy variables for a deviation from peers' body mass credited to the fact that a body mass index above the social norm might have different wage effects than a body mass below the social norm. In particular, we identify with γ_1^{norm} a BMI which is more than three index points *below* peers' BMI and with γ_2^{norm} a BMI which is more than three index points *above* peers' BMI. We choose a deviation of three index points because we need a fix value to make our identification strategy valid and allow a comparison between countries. The definition of the relevant deviation from the respective body mass reference value by three index points is owed to the fact that three index points are approximately the average standard deviation from the mean body mass within and across countries as displayed in Table 1.

$$\begin{aligned} \ln W_{it} &= \beta_0 + X_{it}\beta_1 + ([BMI_{it} < MEDIANBMI_{it} - 3] = 1)\gamma_1^{norm} \\ &\quad + ([BMI_{it} > MEDIANBMI_{it} + 3] = 1)\gamma_2^{norm} \\ &\quad + ([BMI_{it} < 20] = 1)\gamma_1^{medic} + ([BMI_{it} > 26] = 1)\gamma_2^{medic} + \varepsilon_{it} \,. \end{aligned} \quad (1)$$

Estimates of Equation (1) disentangle an influence of a deviation from the social norm from the influence of deviations from an optimal BMI from a medical point of view. In particular, γ_1^{medic} and γ_2^{medic} describe deviations of more than three index points from an clinically optimal BMI of 23. Negative values for γ_1^{medic} identify expected negative productivity effects stemming from expected future health limitations of a lower than the optimal body mass and γ_2^{medic} the respective productivity effect of a higher than optimal body mass controlling for current health status. In the following we report the weight associated with the average height of men and women in Europe to give an impression about the weight and the weight deviations associated with an optimal BMI of 23. BMI of 23, 20 and 26 for a given height of 1.80 meters are associated with a body weight of 74.52 kg, 64.80 kg, and 84.24 kg, respectively; the corresponding BMI for a given height of 1.65 meters are associated with a body weight of 62.62 kg, 54.45 kg, and 70.79 kg, respectively.

As a robustness check, we take the mean of the peer group body mass as the group norm and define a body mass of more than one standard deviation over the peer group mean as a body mass above the norm and define those being more than one standard deviation below the group mean as below the group norm to allow for heterogeneity in the relevant deviations within social groups. The downside of this more adequate specification of deviations from the norm is the fact that it is not meaningful to let the deviation from the clinically optimal BMI vary with the distribution of body mass in the social group. We will therefore provide estimates of specifications comparable to the approach suggested in Equation (1) and estimates of an equation including only indicator variables for more than one standard deviation below or above the peer group norm. While the latter approach does not allow for clear identification of social norm effects it provides tentative evidence on the robustness of our results. As an additional robustness check we consider deviations of 5 index points from the optimal BMI and the norm, respectively.

In the medical scholarly journals there has been some discussion on the optimal BMI value. According to Calle *et al.* (1999) the age standardized mortality rate controlled for smoking behavior and any history of disease for white men and women was lowest for a BMI in the range $22.0 - 21.9$. Willet *et al.* (1999) report empirical evidence that the risk of different diseases like hypertension and coronary heart disease begins to increase at BMIs $> 22 - 23$. Wannamethee *et al.* (1998) found for a sample of British men that the 15-year survival free of heart attack, stroke, and diabetes is highest for those with a BMI between 22.0 and 23.9. This is in line with the recommendation of a median BMI in the range 21 - 23 as the target value for an optimum balancing of the hazards associated with both underweight and overweight (cf. WHO (2000)). We therefore take an BMI of 23 as optimal. As we consider a sample of men and women in the age range between 19 and 44 for our study we do not need to take higher BMI due to increasing age into account. One should be aware that the validity of the BMI to measure obesity and predict the associated risk of cardiovascular events and total mortality is challenged by recent evidence (Romero-Corral *et al.*, 2006). Still, the identification of underweight and other weight related diseases by means of body mass information is not taken into question. Besides, our approach relies on a body fat measure related to physical appearance to be observable by peers and employers.

2.2 The causal effect of body mass on wages

According to Cawley (2004) there are three reasons which might explain a negative correlation between body mass and wages which has been found in several empirical studies. First, the effect of body mass on wages might reflect a lower productivity through body size or discrimination. Second, this correlation could also identify an effect of wages on body size, for instance, via changes in the behavior of food intake or the quality of the consumed food. Least, unobservable individual effects might be correlated with both, weight and wages. Several econometric approaches are applied in the literature to explain which of the suggested explanations for the correlation between weight and wages should be followed. Estimates using lagged values of body mass in wage equations remove any contemporaneous effects if lagged body mass is independent of the residual in the current wage equation. The independence assumption is violated if any genetic and non-genetic components of lagged weight are correlated with genetic and non-genetic components of current wage. For instance, overweight during some course in life might be the result of a genetic predisposition towards overweight which might be also correlated with workplace productivity. A second approach controls for unobserved heterogeneity by taking differences with a sibling, with a close family member or alternatively by fixed effects estimates. The underlying assumption for the latter is that unobserved individual heterogeneity remains constant over time. Given the comparatively short time span of the data used in the present paper (4 years) this assumption might not be too hazardous. However, the data are in this case not very informative about the within-individual variation. Moreover, if most of the true variation in body mass is cross-sectional and body mass (and in particular the individual variation in body mass over time) is measured with error, coefficients are biased toward zero and standard errors are high (Hamermesh (2000)). d'Hombres and Brunello (2005) report according evidence that this might be the case when using ECHP data. Also the instrumental variable (IV) approach comes along with major shortcomings. Cawley (2004) uses a sibling's body mass when controlling for age and gender as an instrument. The validity of the approach hinges on the not testable assumption that sibling's BMI is uncorrelated with error term in the wage regression of the individual. In particular, as long as the precise transmission mechanism is unclear, it is equally likely that the same genetic or non-genetic characteristic, which leads to siblings' BMI being correlated also leads to other factors affecting labor market outcomes being correlated. The latter reflects a violation of the order condition and proofs the instrument to be invalid. Additional practical limitations of the approach are given by the fact that instruments based on family relations lead to a considerable reduction of sample sizes. d'Hombres and Brunello (2005) try to circumvent the data limitations in the ECHP by taking the average BMI of parents and siblings. While still reducing the sample size considerably (by excluding households without parents or siblings currently alive) the informational content of the instrument varies from individual to individual. It is due to the methodological problems associated with the IV approach and the data limitations that we follow García and Quintana-Domeque (2005) and Sousa (2005) and refrain from following the IV approach to investigate the relation between body mass and wages with ECHP data. Sousa (2005) applies instead a propensity score approach, which relies on strong distributional assumptions and the choice of the covariates included in the propensity score model. Given the comparatively short time span of the ECHP data providing information on body-mass and the limitations in sample sizes and strong assumptions associated with instrumental variable and propensity score approaches, we think that the relation between BMI and wages is best identified with cross-sectional variation. We will therefore report results for estimates of between effects models. For comparison we provide results of the estimation of a fixed effects model. However, we will be careful when interpreting any significant correlations as causal relations between weight and wages.

3 Data and Sample

The data source for this study is the anonymized user database (UDB) of the European Community Household Panel (ECHP) which provides standardized data for most of the European countries (see Peracchi (2002)). This data set has been used also by d'Hombres and Brunello (2005), Sousa (2005) and García and Quintana-Domeque (2005) in studies on the relation between overweight and earnings in Europe.

Of particular interest for the purpose of the present study is the fact that the ECHP has a longitudinal panel design and the information on weight and height of individuals is available for the countries Denmark, Belgium, Ireland, Italy, Greece, Spain, Portugal, Austria and Finland for the years 1998 to 2001. For this reason we restrict our analysis to this time span.

We calculate the body mass index using information on self-reported height and weight. This embodies the problem that this information is measured with error. The standard result for coefficients of explanatory variables which are measured with error is that the coefficients will be biased towards zero. We try to minimize this error by dropping observations from individuals for whom self-reported height changes by more than 2 centimeters from one year to another. The procedure suggested by Cawley (2004) to correct for the measurement error is not applicable due to the lack of other data providing information on body mass for European countries. However, Cawley (2000) reports that his findings do not change whether he corrects for self-reported BMI in his data or not. A particular problem in the presence of norms regarding body mass is the possibility of a systematic misreporting of weight and height to pretend to have a physical stature closer to the norm. However, in this case any impact of deviations from the social norm regarding body mass on wages would represent a lower bound of the true effect.

The dependent variable in the wage regressions is the natural logarithm of hourly wages where wages are deflated by consumer price index information. The set of explanatory variables includes beside the indicator variables for deviations from optimal or peers' BMI: age, square of age, indicators for highest level of general or higher education completed, an indicator for marital status, tenure, indicators for part-time job and permanent contract, number of days due to illness in the last four weeks before the interview, an indicator for subjective assessment on being hampered in daily work by any physical or mental illness or disability, 9 indicators for occupational group and regional controls. The degree of regional information varies from country to country and is not available for Denmark. For women also an indicator for the presence of children in the household is included to account for past pregnancies.

As common in the literature we investigate the labor outcomes of men and women separately. Because the European countries are characterized by very different institutions governing wage setting and because the influence of the social norm on the weight-height relation might differ between European countries we estimate all regression separately for the European countries in the data set. The wage information for the self-employed is not available in a comparable manner for the employed workers. Our analysis will be therefore restricted to those not working in self-employment. Wage regressions are conducted for men and women working more than 15 hours a week.

We account for the fact that weight tends to rise with age in two ways. First we restrict our sample to workers between 19 and 44 to ensure that individuals are at their adult height and to restrict age related weight rise like that for women around the years of the menopause. Second we include linear and quadratic measures of age as explanatory variables in the wage regression.

4 Results

Table 1 lists the mean, minimum and maximum of the within country body mass norms which are calculated by the gender, age group and region specific median

BMI. The number of different cells mainly reflects the level of regional disaggregation for the respective country. It gets down to 12 different cells for men and women in Denmark, where no regional information is available, representing median values for the 3 different age groups in the sample for 4 years for men and women respectively. We will put lower weight on the results for Denmark when comparing differences for the results for deviations from the norm and the clinically recommended BMI. We observe a huge variation in the social norm body mass when inspecting the minimum and maximum values of the social norm body mass within countries. Also the country-specific mean of norm BMI varies between countries, the differences are, however, moderate. The mean of the standard deviation, where the standard deviation refers to the mean of the standard deviation of the body mass per observation cell is higher for women than for men and differs considerably between countries.

Table 1: Descriptive Statistics for gender and broad age group specific median of the BMI for each region an observation year

	Men					Women				
	Mean	Min	Max	Mean of Standard Deviation.	No. of different cells	Mean	Min	Max	Mean of Standard Deviation	No. of different cells
Austria	24.50	22.46	25.79	3.14	34	22.18	20.57	23.15	3.51	30
Belgium	24.17	20.98	25.00	3.52	33	22.03	19.61	23.42	3.84	35
Denmark	24.56	22.86	25.18	3.48	12	22.82	21.97	23.31	3.94	12
Finland	24.69	21.94	26.04	3.39	54	23.11	20.70	24.43	3.91	54
Greece	25.31	23.06	26.30	2.93	31	22.78	20.20	25.83	3.58	40
Ireland	25.20	21.33	26.88	3.06	18	23.14	21.20	24.56	3.59	22
Italy	24.25	21.33	26.09	3.08	105	21.66	19.63	23.88	3.22	100
Portugal	24.83	22.53	26.40	2.95	72	23.29	20.94	26.56	3.62	74
Spain	25.08	21.97	27.58	3.47	78	22.06	19.66	24.24	3.43	76

Note: ECHP data, years 1998-2001. For details on the selected sample see text. The information is displayed for the sample as used in the regressions (observation numbers see Table 2). The unit of observation is the peer group. The standard deviation refers to the standard deviation of the mean BMI within a peer group.

Table 2 lists the average logarithmic hourly wages for those within a range of 3 index points above or below the clinically optimal and peer group median BMI, respectively, as well as the average for those being more than 3 index points below or above the respective reference value for each country and separately for men and women. For men, we observe that workers in the range of a healthy BMI earn higher wages than unhealthy thin or overweight workers in 5 out of 9 countries, while having a BMI in the range of the social norm is rewarded with higher wages in 7 out of 9 countries. However, differences in logarithmic wages are small. Similar to men, a clinically recommended body mass leads in 6 out of 9 countries to higher wages for female workers. This is different for the wages of women in the range of the social norm BMI compared to the wages of deviators in body mass. Here, higher wages are found in only 2 out of 9 countries. At this stage we can neither say whether wage differences are significant nor are we able to disentangle any productivity effects from effects of the social norm. The numbers in italics give the percentage of workers observed in the respective groups. The group with a body mass below the clinically recommended range is very small for men. In all countries and for men and women there are considerable fractions in the range of the social norm body mass and above. However, the distribution between countries differs considerably.

Results for our preferred specification, the between effects model, are presented in Table 3. Each line represents a separate estimation of the wage regression as stated in Equation (1) for a country. The upper panel presents estimates for men and the lower panel for women. Other variables included and sample restrictions are discussed in section 3. We will not discuss the coefficient estimates for other variables but the indicator variables identifying productivity effects associated with deviations from the clinically recommended BMI: MedLighter (below BMI of 20) and MedHeavier (above BMI of 26), and those identifying deviations from the norm: NormLighter (below peer group median BMI - 3) and NormHeavier (above peer group median BMI + 3) in detail.

There are three interesting observations. First, deviations from the social norm matter in wage setting. When comparing the coefficients which are at least weakly significant we observe 8 relevant wage effects for deviations from the norm and 6 statistically relevant correlations between deviations from the optimal BMI and wages. This indicates that overall the influence of the social norm is more important than the health effect of body mass. Second, significant coefficients for deviations from the reference BMI (optimal or social norm) indicate wage penalties rather than wage premiums. Notably exceptions are weakly significant wage premiums for slim

Table 2: Average logarithmic hourly wages for those deviating from optimal BMI or peer group BMI.

Men	Deviations from optimal BMI			Deviations from social norm BMI			
	BMI<20	20 ≤ BMI ≤ 26	BMI>26	BMI < Norm-BMI – 3	Norm-BMI – 3 ≤ BMI ≤ Norm-BMI + 3	BMI > Norm-BMI + 3	Obser-vations
Austria	**4.78**	**4.90**	**4.88**	**4.95**	**4.90**	**4.83**	**3823**
(percentages)	*2*	*57*	*41*	*8.5*	*63.5*	*28*	
Belgium	**5.95**	**6.11**	**6.05**	**6.08**	**6.12**	**6.02**	**1530**
(percentages)	*4.4*	*49.6*	*46*	*10.9*	*51.6*	*37.5*	
Denmark	**4.67**	**4.83**	**4.8**	**4.79**	**4.84**	**4.77**	**2585**
(percentages)	*2.5*	*52.4*	*45.1*	*11*	*56.7*	*32.3*	
Finland	**3.94**	**4.12**	**4.11**	**4.08**	**4.13**	**4.08**	**3302**
(percentages)	*2.6*	*42.3*	*39.7*	*10.9*	*63.5*	*25.6*	
Greece	**6.82**	**7.24**	**7.25**	**7.24**	**7.29**	**7.21**	**3567**
(percentages)	*0.9*	*31.8*	*67.3*	*5.6*	*42.2*	*52.2*	
Ireland	**1.63**	**1.97**	**1.97**	**1.94**	**2.03**	**1.93**	**2511**
(percentages)	*1.8*	*26.6*	*71.6*	*6.1*	*35.2*	*58.7*	
Italy	**2.51**	**2.64**	**2.65**	**2.6**	**2.65**	**2.62**	**6583**
(percentages)	*2.9*	*74.5*	*32.6*	*7.3*	*71*	*21.7*	
Portugal	**6.27**	**6.36**	**6.4**	**6.39**	**6.39**	**6.36**	**6038**
(percentages)	*2.1*	*50.2*	*47.7*	*9.2*	*58.9*	*31.9*	
Spain	**6.78**	**6.92**	**6.82**	**6.96**	**6.94**	**6.79**	**7058**
(percentages)	*1.2*	*26.5*	*72.3*	*5.5*	*32.1*	*62.4*	
Women	Deviations from optimal BMI			Deviations from social norm BMI			
	BMI<20	20 ≤ BMI ≤ 26	BMI>26	BMI < Norm-BMI – 3	Norm-BMI – 3 ≤ BMI ≤ Norm-BMI + 3	BMI > Norm-BMI + 3	Obser-vations
Austria	**4.70**	**4.70**	**4.72**	**4.77**	**4.70**	**4.71**	**2531**
(percentages)	*17.8*	*56.6*	*25.6*	*8.5*	*62.3*	*29.2*	
Belgium	**5.99**	**6.04**	**5.97**	**5.99**	**6.04**	**5.96**	**1386**
(percentages)	*18.0*	*57.5*	*24.5*	*8.2*	*63.2*	*28.6*	
Denmark	**4.73**	**4.72**	**4.67**	**4.76**	**4.72**	**4.67**	**2250**
(percentages)	*11.3*	*55.6*	*33.1*	*10.4*	*55.1*	*34.5*	
Finland	**3.93**	**4.01**	**3.95**	**4.01**	**4.00**	**3.94**	**2873**
(percentages)	*12.4*	*60*	*27.6*	*12.5*	*60.5*	*27.0*	
Greece	**7.16**	**7.24**	**7.19**	**7.24**	**7.18**	**7.22**	**2516**
(percentages)	*9.9*	*39.6*	*50.5*	*8.1*	*51.9*	*50*	
Ireland	**1.81**	**1.92**	**1.84**	**1.94**	**1.84**	**1.90**	**1997**
(percentages)	*6.1*	*33.1*	*60.8*	*6.4*	*33.3*	*60.3*	
Italy	**2.58**	**2.62**	**2.55**	**2.58**	**2.61**	**2.55**	**4343**
(percentages)	*24.2*	*60.5*	*15.3*	*7.6*	*71.9*	*20.5*	
Portugal	**6.37**	**6.34**	**6.22**	**6.53**	**6.30**	**6.23**	**4296**
(percentages)	*9.6*	*55.9*	*34.5*	*11*	*57.2*	*31.8*	
Spain	**6.78**	**6.82**	**6.66**	**6.90**	**6.80**	**6.67**	**4176**
(percentages)	*10.7*	*32.5*	*56.8*	*5*	*36.5*	*58.5*	

Notes: The wage is measured in local currencies. Averages of logarithmic wages between countries should not be compared. The optimal BMI in a clinical sense is defined by a BMI of 23, see text for more details. The norm BMI is given by the median BMI value of the social comparison group. See text for more details.

women and men in three countries. However, the finding for men goes along with a somewhat weird wage premium for those with unhealthy overweight. Third, wage penalties for deviations from the norm are an issue for men but not for women. This is surprising in the light of the existing evidence in the literature on the weight-wage relation.

Let us first discuss the results for men in detail. In Greece and Ireland we find huge wage penalties of around 30 percent lower hourly wages for having underweight. The total observation number in this group is small (0.9 percent in Greece and 1.8 percent in Ireland) and the effect is potentially driven by seriously underweight individuals signalling a long term productivity disadvantage through their body mass. In Denmark, we find a significant wage penalty of 7 percent lower hourly wages for being overweight indicating a higher importance of productivity effects compared to deviations from a social norm. However, the social norm is only weakly identified due to the lack of regional variation.

Table 3: Between effects estimates of wage effects for deviations of 3 index points from medically recommended and peer group median BMI in Europe.

Men										
	MedLighter (0/1)		MedHeavier (0/1)		NormLighter (0/1)		NormHeavier (0/1)		R^2	Observations
Austria	-0.047	(0.068)	0.040	(0.030)	0.017	(0.038)	-0.070**	(0.031)	0.343	3823
Belgium	-0.055	(0.059)	-0.022	(0.038)	-0.015	(0.040)	-0.024	(0.038)	0.415	1530
Denmark	0.000	(0.073)	-0.070**	(0.035)	-0.063*	(0.037)	0.017	(0.035)	0.375	2585
Finland	-0.034	(0.069)	-0.026	(0.030)	-0.075**	(0.035)	0.018	(0.032)	0.441	3302
Greece	-0.301***	(0.110)	0.014	(0.031)	-0.019	(0.050)	-0.076***	(0.027)	0.535	3567
Ireland	-0.293**	(0.115)	0.063	(0.049)	0.067	(0.067)	-0.051	(0.041)	0.488	2511
Italy	-0.041	(0.043)	0.009	(0.020)	-0.026	(0.029)	0.002	(0.023)	0.459	6583
Portugal	-0.011	(0.067)	0.020	(0.025)	0.011	(0.035)	-0.004	(0.025)	0.492	6038
Spain	-0.062	(0.066)	0.052*	(0.027)	0.067*	(0.036)	-0.075***	(0.023)	0.524	7058
Women										
	MedLighter (0/1)		MedHeavier (0/1)		NormLighter (0/1)		NormHeavier (0/1)		R^2	
Austria	-0.002	(0.043)	-0.021	(0.066)	0.048	(0.059)	0.046	(0.065)	0.349	2531
Belgium	-0.002	(0.036)	0.030	(0.055)	-0.055	(0.050)	-0.035	(0.053)	0.423	1386
Denmark	0.011	(0.080)	-0.043	(0.076)	0.027	(0.083)	0.038	(0.076)	0.496	2250
Finland	-0.064	(0.044)	-0.052	(0.048)	0.066	(0.044)	0.011	(0.047)	0.473	2873
Greece	0.014	(0.051)	-0.047	(0.075)	-0.044	(0.057)	0.038	(0.075)	0.646	2516
Ireland	-0.185**	(0.079)	-0.124	(0.104)	0.140*	(0.079)	0.109	(0.104)	0.660	1997
Italy	-0.044**	(0.021)	-0.006	(0.037)	-0.003	(0.032)	-0.029	(0.035)	0.517	4343
Portugal	-0.059	(0.042)	-0.025	(0.045)	0.061	(0.042)	0.023	(0.046)	0.683	4296
Spain	-0.034	(0.038)	-0.010	(0.067)	0.089*	(0.053)	-0.040	(0.068)	0.635	4176

Notes: Robust standard errors in parentheses. The dependent variable is the logarithm of hourly wages. The variable MedLighter indicates a BMI<20 and MedHeavier a BMI > 26. The variable NormLighter indicates a BMI which is more than 3 index points below the age and gender specific median BMI within a region and NormHeavier indicates a BMI which is more than 3 index points higher than the respective peer group body mass. Each line represents a separate regression. See text for more information on other variables included in the regressions.

For men we find in Austria a wage penalty of 7 percent lower hourly wages for being more than three index points above the norm. A comparable wage penalty is also found for those men over the body mass norm in Greece (7.6 %) and Spain (7.5 %). With the exception of Finland the wage effects for being more than three index points below the norm are only weakly significant. The significant wage penalty of 7.5 % for downward deviators in Finland is about the same size as the penalties for upward deviators in Austria, Greece and Spain. While those below the norm are also penalized in Denmark, the weakly significant wage effect for downward deviators in Spain reveals a wage premium.

For women, we find highly significant lower hourly wages for being below the clinically recommended body mass in Ireland and Italy. While the penalty of 18.5 percent lower wages covers only 6 percent of all women in the sample for Ireland, in Italy 25% of all women in the sample have a body mass index below 20 and incur a wage penalty of 4.4 % according to the between effects estimates. However in Ireland and Spain we find a weakly significant positive coefficient for being below the social norm on body mass indicating a wage premium for the slim.

In the appendix we report several robustness checks for the estimates of our preferred specification. In Table A1 we report between effects estimates where we define deviations from the reference BMI value by deviations of more than one standard deviation from the mean body mass index of the peer group or optimal BMI, respectively. As already discussed above, variation in the deviation form the clinically optimal BMI is not very meaningful. We therefore do not discuss the results for the productivity effects in detail. The results for being slimmer than the norm differ for men and women from the results in Table 3. Importantly, we found significant wage penalties for men above the social norm for the same countries as in our preferred specification. The wage penalties for heavier men in Greece and Spain are lower than in Table 3. Tentatively similar results, however with a only weakly significant wage penalty in Austria, are found for specifications excluding dummies indicating a deviation from the optimal BMI. The estimates reported in the appendix Table A4 do not allow disentangling productivity effects from the influence of the social norm. The results for both specifications which use the standard deviation as the definition of the relevant BMI deviation provide corroborative evidence that the results displayed in Table 3 are not driven by the concept of a norm deviation favored in the preferred specification. In Table A2 we report between effects estimates when unhealthy body weight and deviations from the norm are defined by deviations of more than 5 index points from the clinically recommended BMI or peer group median BMI, respectively. The identification in these estimations is confined to much less individuals than in the case of deviations of 3 index points which explains the differences in the results. The highly significant penalty of about 10 % lower wages for those well above the social norm in Greece and huge wage penalties for those deviating more than 5 index points in the downward direction in Belgium and Greece are notable effects. The latter effects have not been present when defining the relevant deviation by a deviation of 3 or more index points. Fixed effects estimates are reported in Table A3. The between R-squared as reported in Table 3 is in all regressions well above the within R-squared as reported in Table A3. According to these estimates only the finding for Austria is robust when applying the fixed effects estimator. However, the within estimates are not based on a lot of information (four years) and the comparison of the R-squared values clearly indicate that most of the variation is cross-sectional. We therefore do not discuss the findings for the fixed effects model in detail.

5 Discussion of Results

Table 4: Institutional background on wage bargaining system and employment protection strictness in Europe

	Bargaining Coverage Rate (1994)[a]	Centralization (1994)[b]	Coordination (1994)[b]	Overall Employment protection strictness (Late 1990s)[c]
Austria	98	2+	3	2.2
Belgium	90	2+	2	2.1
Denmark	69	2	2+	1.2
Finland	95	2+	2+	2.0
Greece	n.a.	n.a. [d)]	n.a. [e)]	3.6
Ireland	n.a.	n.a.	n.a.	0.9
Italy	82	2	2	3.3
Portugal	71	2	2	3.7
Spain	78	2	2	3.1

Notes: [a]) Information is taken from OECD Employment Outlook1997, Table 3.3. [b]) Information is taken from OECD Employment Outlook 1997, Table 3.3. The characteristics are assigned values between 1 (decentralized/ uncoordinated) and 3 (centralized/ coordinated). [c]) Information is taken from OECD Employment Outlook, 1999, Table 2.5. The number provides the average of indicators for regular contracts and temporary contracts. A lower number denotes less strict employment protection legislation.[d)] According to Visser (2000) the centralization level of bargaining in 1997 is 1 on a intersectoral level, 3 on a sectoral level and 1 on a company level, where 5 denotes the value for full centralization. [e)]According to the same source, coordination is assessed “major by national agreement”.

Two questions arise when inspecting the results. First, what is particular about countries where we find significant correlations between wages and social norms on body-mass? Second, why are effects of the social norm rather found for men than for women? Regarding the first question, one could hypothesize that countries with more competitive labor markets should provide less evidence for wage effects of social norms.

Table 4 provides information on the degree of centralization and coordination of wage bargaining as well as an index for the degree of employment protection strictness. Differences in the degree of centralization and coordination of bargaining between countries are small. Still, two of the three countries with significant influence of the social norm on wages, namely Greece and Spain show a very high degree of employment protection. In fact, we have at least some evidence that labor markets where social norms impact strongly on wages are less competitive.

Concerning the second question we cannot exclude the possibility that our findings for women are owed to the definition of the social norm in the present paper. In particular, the social norm on body mass for women might be constituted by an ideal body mass rather than the median body mass of peers. Or, taken differently, our assumption of the relevant social comparison group for women might be wrong. In this case our identification strategy is invalid for women. The observations on the influence of the social norm should be taken with a pinch of salt in the case of women.

6 Conclusion

In economics, social norms are typically considered as the residual part of observed behavior which cannot be explained by economic theory. Empirical studies which quantify any effects of social norms are rare. In this paper we suggested wage sanctions associated with deviations from a social norm on body mass as an avenue to quantify the effects of social norms. Our empirical strategy allowed for disentangling wage effects of deviations from the social norm from a wage reduction incurred by the employee for an anticipated lower future productivity. To this end we compared wage effects of deviations from a social norm as measured by the median BMI of the relevant peer group with wage effects of deviations from a medical optimal BMI. We argued that the future productivity could be foreseen by the health risk associated with deviations from an optimal BMI in a clinical sense. We were able to conduct these estimates with standardized data for 9 European countries along with detailed controls for present health limitations among others. Our results suggest that social norms set the relevant standard to evaluate mens' physical appearance in Austria, Finland, Greece and Spain. In particular, deviations of more than three index points in body mass in the upward direction from the norm is sanctioned with around seven percent lower hourly wages in Austria, Greece and Spain. However, as extensively discussed above, given the limitations of the available data and our empirical approach we cannot provide compelling evidence the correlations reflect causal relationships between body mass and wages. We explain the fact that our results for women differ from what is typically found in the literature on the weight-wage relation by reasoning that our estimation strategy is prone to fail if the social norm body mass is embodied by an ideal body mass rather than a peer group median body mass.

The findings in this paper are important in two dimensions: First, from a more general point of view the evidence presented in the paper is surprising and disturbing. Social norms seem to play an important role. For some countries, even comparatively moderate deviations from a norm on body mass lead to substantially lower hourly wages. This should arise awareness of many different other factors potentially influencing wage setting and employment relations which have not been considered so far.

Second, the paper contributes novel insights to the literature on the weight–wage relation. In contrast to the findings in the recent literature a negative relation between body mass and wages is neither confined to severe obese employees nor to women alone. There is not one body mass–wage relation for the western world. Our findings provide evidence that the body mass–wage relation is in many countries non-linear. While the findings differ substantially between countries the negative association between wages and indicators for a higher or lower body mass index than the reference point (as set by the norm or a clinically recommended BMI) is rather confined to men. Given the problems related to the identification of causal effects of body mass on wages and pointed out above, additional research is required to get closer to a true effect of body mass on wages.

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Table A1: Between effects estimates of wage penalties for deviations of one standard deviation from medically recommended and peer group mean BMI in Europe.

Men										
	MedLighter (0/1)		MedHeavier (0/1)		NormLighter (0/1)		NormHeavier (0/1)		R^2 (between)	Observations
Austria	-0.052	(0.069)	0.045	(0.029)	0.015	(0.035)	-0.073**	(0.030)	0.343	3823
Belgium	-0.056	(0.069)	-0.033	(0,036)	-0.024	(0.038)	-0.020	(0.037)	0.416	1530
Denmark	0.014	(0.087)	-0.051	(0.035)	-0.057	(0.035)	0.002	(0.036)	0.374	2585
Finland	-0.062	(0.073)	0.007	(0.029)	-0.043	(0.032)	-0.016	(0.033)	0.439	3302
Greece	-0.344***	(0.106)	-0.012	(0.032)	-0.033	(0.044)	-0.064**	(0.027)	0.536	3567
Ireland	-0.247**	(0.114)	0.031	(0.049)	0.013	(0.064)	-0.033	(0,041)	0.487	2511
Italy	0.026	(0.042)	0.010	(0.020)	-0.052**	(0.024)	-0.003	(0.023)	0.459	6583
Portugal	0.014	(0.063)	0.000	(0.024)	-0.030	(0.032)	0.007	(0.025)	0.492	6038
Spain	-0.054	(0.076)	0.021	(0.027)	0.011	(0.034)	-0.058**	(0.024)	0.523	7058
Women										
	MedLighter (0/1)		MedHeavier (0/1)		NormLighter (0/1)		NormHeavier (0/1)		R^2 (between)	
Austria	-0.029	(0.049)	0.027	(0.084)	0.083	(0.052)	0.009	(0.085)	0.351	2531
Belgium	-0.062	(0.059)	0.137	(0.094)	0.021	(0.064)	-0.146	(0.094)	0.424	1386
Denmark	-0.145**	(0.057)	-0,058	(0.069)	0.114***	(0.045)	0.059	(0.071)	0.499	2250
Finland	-0.080*	(0.048)	-0.063	(0.046)	0.041	(0.035)	0.029	(0.049)	0.472	2873
Greece	-0.011	(0.054)	0.007	(0.072)	-0.026	(0.053)	-0.016	(0.072)	0.646	2516
Ireland	-0.053	(0.092)	-0.104	(0.094)	0.020	(0.063)	0.102	(0.093)	0.657	1997
Italy	-0.062**	(0.025)	0.016	(0.046)	0.014	(0.032)	-0.048	(0.045)	0.518	4343
Portugal	-0.105**	(0.050)	0.099*	(0.052)	0.099**	(0.043)	-0.092*	(0.053)	0.684	4296
Spain	-0.091*	(0.048)	-0.021	(0.087)	0.134**	(0.055)	-0.028	(0.088)	0.636	4176

Notes: Robust standard errors in parentheses. The dependent variable is the logarithm of hourly wages. The variable MedLighter indicates a BMI<23 – sd and MedHeavier a BMI > 23 + sd, where sd refers to one standard deviation from the mean BMI of the peer group. The variable NormLighter indicates a BMI which is more than one standard deviation below the age and gender specific mean BMI within a region and NormHeavier indicates a BMI which is more than one standard deviation higher than the respective mean of peer group body mass. Each line represents a separate regression. See text for more information on other variables included in the regressions.

Table A2: Between effects estimates of wage effects for deviations of 5 index points from medically recommended and peer group median BMI in Europe.

Men									
	MedLighter (0/1)		MedHeavier (0/1)		NormLighter (0/1)		NormHeavier (0/1)		R^2 (between)	Observations
Austria	-0.170	(0.146)	-0.062	(0.041)	0.139	(0.085)	0.022	(0.044)	0.345	3823
Belgium	0.259	(0.170)	-0.073	(0.050)	-0.208**	(0.085)	0.036	(0.051)	0.418	1530
Denmark	0.082	(0.267)	0.030	(0.048)	-0.128	(0.091)	-0.069	(0.050)	0.373	2585
Finland	-0.365	(0.228)	0.049	(0.035)	-0.118	(0.082)	-0.064	(0.042)	0.442	3302
Greece	0.055	(0.432)	0.039	(0.039)	-0.351***	(0.120)	-0.107***	(0.038)	0.536	3567
Ireland	0.204	(0.382)	0.012	(0.061)	-0.186*	(0.107)	-0.014	(0.059)	0.485	2511
Italy	0.050	(0.121)	-0.002	(0.029)	-0.040	(0.064)	0.014	(0.032)	0.458	6583
Portugal	-0.003	(0.221)	0.039	(0.034)	0.012	(0.076)	-0.039	(0.036)	0.492	6038
Spain	0.265	(0.195)	-0.032	(0.033)	-0.057	(0.069)	-0.014	(0.031)	0.524	7058
Women										
	MedLighter (0/1)		MedHeavier (0/1)		NormLighter (0/1)		NormHeavier (0/1)		R^2 (between)	
Austria	-0.013	(0.100)	-0.075	(0.099)	0.109	(0.133)	0.101	(0.096)	0.350	2531
Belgium	-0.041	(0.073)	-0.063	(0.065)	0.170	(0.141)	0.053	(0.064)	0.423	1386
Denmark	0.130	(0.150)	0.175*	(0.104)	-0.276	(0.172)	-0.174*	(0.104)	0.498	2250
Finland	-0.108	(0.091)	-0.089	(0.064)	0.046	(0.082)	0.047	(0.065)	0.472	2873
Greece	-0.022	(0.091)	0.033	(0.086)	-0.059	(0.117)	-0.035	(0.087)	0.646	2516
Ireland	0.067	(0.225)	-0.020	(0.096)	-0.089	(0.205)	0.022	(0.097)	0.657	1997
Italy	-0.028	(0.039)	-0.037	(0.050)	0.006	(0.103)	0.015	(0.045)	0.515	4343
Portugal	-0.000	(0.098)	0.075	(0.066)	0.086	(0.079)	-0.083	(0.067)	0.683	4296
Spain	-0.089	(0.083)	0.016	(0.105)	0.287*	(0.154)	-0.065	(0.106)	0.635	4176

Notes: Robust standard errors in parentheses. The dependent variable is the logarithm of hourly wages. The variable MedLighter indicates a BMI<18 and MedHeavier a BMI > 28. The variable NormLighter indicates a BMI which is more than 5 index points below the age and gender specific median BMI within a region and NormHeavier indicates a BMI which is more than 5 index points higher than the respective peer group body mass. Each line represents a separate regression. See text for more information on other variables included in the regressions.

Table A3: Fixed effects estimates of wage effects for deviations of 3 index points from medically recommended and peer group median BMI in Europe.

Men										
	MedLighter (0/1)		MedHeavier (0/1)		NormLighter (0/1)		NormHeavier (0/1)		R^2 (within)	Observations
Austria	0.017	(0.040)	0.012	(0.015)	-0.012	(0.022)	-0.039**	(0.018)	0.094	3823
Belgium	-0.152**	(0.070)	0.055	(0.036)	-0.047	(0.046)	-0.114***	(0.040)	0.131	1530
Denmark	0.046	(0.052)	0.016	(0.022)	0.003	(0.030)	0.012	(0.025)	0.092	2585
Finland	-0.018	(0.049)	0.025	(0.023)	-0.008	(0.032)	-0.018	(0.026)	0.086	3302
Greece	-0.114	(0.070)	0.007	(0.022)	0.032	(0.027)	-0.035	(0.024)	0.065	3567
Ireland	0.049	(0.071)	-0.000	(0.031)	0.015	(0.048)	0.080**	(0.038)	0.182	2511
Italy	0.038	(0.026)	-0.004	(0.011)	-0.024	(0.015)	-0.009	(0.013)	0.041	6583
Portugal	-0.040	(0.034)	0.010	(0.016)	-0.014	(0.018)	0.010	(0.017)	0.176	6038
Spain	-0.005	(0.051)	0.012	(0.017)	0.025	(0.023)	-0.029	(0.018)	0.111	7058
Women										
	MedLighter (0/1)		MedHeavier (0/1)		NormLighter (0/1)		NormHeavier (0/1)		R^2 (within)	
Austria	-0.048**	(0.022)	0.028	(0.034)	-0.021	(0.026)	-0.007	(0.029)	0.120	2531
Belgium	0.035	(0.044)	0.025	(0.062)	-0.011	(0.049)	-0.142**	(0.056)	0.144	1386
Denmark	-0.056*	(0.032)	-0.004	(0.028)	0.059*	(0.032)	-0.009	(0.027)	0.067	2250
Finland	-0.000	(0.024)	0.018	(0.027)	-0.008	(0.023)	-0.041	(0.028)	0.056	2873
Greece	0.016	(0.034)	-0.007	(0.044)	0.011	(0.030)	0.030	(0.042)	0.074	2516
Ireland	-0.063	(0.045)	0.052	(0.051)	0.045	(0.042)	-0.039	(0.052)	0.312	1997
Italy	0.020	(0.013)	0.036*	(0.022)	-0.024	(0.018)	-0.012	(0.017)	0.065	4343
Portugal	-0.025	(0.021)	-0.005	(0.022)	0.029*	(0.017)	0.009	(0.021)	0.126	4296
Spain	-0.008	(0.026)	-0.067*	(0.035)	-0.014	(0.029)	0.075**	(0.033)	0.140	4176

Notes: Robust standard errors in parentheses. The dependent variable is the logarithm of hourly wages. The variable MedLighter indicates a BMI<20 and MedHeavier a BMI > 26. The variable NormLighter indicates a BMI which is more than 3 index points below the age and gender specific median BMI within a region and NormHeavier indicates a BMI which is more than 3 index points higher than the respective peer group body mass. Each line represents a separate regression. See text for more information on other variables included in the regressions.

Table A4: Between effects estimates of wage effects for deviations of one standard deviation from peer group mean BMI in Europe.

Men						
	NormLighter (0/1)		NormHeavier (0/1)		R^2 (between)	Observations
Austria	-0.010	(0.029)	-0.036*	(0.019)	0.342	3823
Belgium	-0.034	(0.033)	-0.048**	(0.021)	0.415	1530
Denmark	-0.044	(0.031)	-0.042**	(0.021)	0.372	2585
Finland	-0.056**	(0.028)	-0.010	(0.023)	0.439	3302
Greece	-0.080**	(0.038)	-0.072***	(0.018)	0.532	3567
Ireland	-0.061	(0.053)	-0.012	(0.026)	0.484	2511
Italy	-0.046**	(0.019)	0.006	(0.014)	0.459	6583
Portugal	-0.026	(0.026)	0.007	(0.017)	0.492	6038
Spain	-0.006	(0.030)	-0.042***	(0.013)	0.523	7058
Women						
	NormLighter (0/1)		NormHeavier (0/1)		R^2 (between)	
Austria	-0.028	(0.022)	0.010	(0.019)	0.250	2531
Belgium	-0.035	(0.035)	-0.010	(0.023)	0.422	1386
Denmark	0.026	(0.027)	0.002	(0.017)	0.494	2250
Finland	0.009	(0.027)	-0.029	(0.022)	0.470	2873
Greece	-0.033	(0.042)	-0.008	(0.020)	0.646	2516
Ireland	0.001	(0.047)	0.003	(0.022)	0.656	1997
Italy	-0.040*	(0.024)	-0.022	(0.018)	0.516	4343
Portugal	0.033	(0.032)	0.006	(0.020)	0.683	4296
Spain	0.056	(0.036)	-0.041**	(0.016)	0.635	4176

Notes: Robust standard errors in parentheses. The dependent variable is the logarithm of hourly wages. The variable NormLighter indicates a BMI which is more than one standard deviation below the age and gender specific mean BMI within a region and NormHeavier indicates a BMI which is more than one standard deviation higher than the respective mean of the peer group body mass. Each line represents a separate regression. See text for more information on other variables included in the regressions.