THE PRICE OF PREJUDICE: LABOUR MARKET DISCRIMINATION ON THE GROUNDS OF GENDER AND ETHNICITY

CHAPTER 3 OF THE 2008 OECD EMPLOYMENT OUTLOOK

TECHNICAL ANNEX

THE PRICE OF PREJUDICE: LABOUR MARKET DISCRIMINATION ON THE GROUNDS OF GENDER AND ETHNICITY

Chapter 3 of the OECD *Employment Outlook 2008,* ANNEXES 3.B to 3.C

The material presented in the following pages supplements that presented in Chapter 3 of the *OECD Employment Outlook 2008*. This material is organised into two annexes, as follows:

- Annex 3.B presents the methodology used for the cross-country regression analysis and detailed results. It discusses also methodological issues concerning regression-based wage decompositions.

- Annex 3.C presents supplementary figures referred to in the chapter

Sources and definitions used for this material are presented again at the end of this document for the reader's convenience. They replicate those presented in Annex 3.A2 of Chapter 3 of the *OECD Employment Outlook 2008*.

ANNEX 3.B
CROSS-COUNTRY REGRESSION ANALYSIS OF GENDER GAPS METHODOLOGY AND DETAILED RESULTS

Regression-based decompositions of gender and ethnic wage gaps

Possible sources of pay inequality between gender or ethnic groups are differences in human capital endowments and productivity-relevant characteristics (*e.g.* age, education and employment experience, but also less easily observed individual characteristics such as work motivation and effort) and differences in pay, "all other things equal". In particular, differences in pay "all other things equal" reflect pay discrimination. Regression-based decomposition analysis tries to identify the different components of the wage gap between two groups using the method devised by Oaxaca (1973) and Blinder (1973).

The objective of the Oaxaca-Blinder decomposition of the wage gap is to identify the contribution of observed endowments and productive characteristics. To do this, one needs to know how much the labour market "pays" for such endowments and characteristics. Different approaches exist in the literature on how to estimate these remuneration rates. The original approach suggested by Oaxaca and Blinder is to use as a benchmark a wage regression estimated on one group (possibly the largest or the least likely to be affected by selectivity into employment and/or discrimination – *e.g.* men in the case of the gender wage gap). The estimated coefficients from the benchmark regression can be interpreted as the market price for the observed characteristics that would apply to both men and women *in the absence of discrimination*. The product of these coefficients and the average gender gaps in the corresponding variables leads to a simple decomposition of the differential between average hourly wages into a part due to gaps in observed characteristics and an unexplained residual. The latter reflects gender differences in unobserved characteristics and/or discriminatory wage-setting practices that are unrelated to individual productive characteristics. Formally, this decomposition can be written as:

$$\Delta \log \overline{W_i} = \Delta \overline{X}_i \beta_i + \Delta \overline{\varepsilon}_i ,$$

where i indexes the unit of analysis (country and time or country, industry and time), $\overline{\ }$ and Δ refer to country/time (or country/industry/time) averages and gaps between men and women, respectively, W stands for gross hourly wages, X for the matrix of observable endowments and characteristics, β for the vector of estimated coefficients from the benchmark regressions and ε for the computed residuals from these regression coefficients (that is, the difference between actual and predicted values, the latter computed using the estimated coefficients from the estimated wage regression for the benchmark group).

Variations on this approach have been developed in the literature (see *e.g.* Altonji and Blank, 1999, Weichselbaumer and Winter-Ebmer, 2007, for references). Most of them concern the choice of benchmark equations and methods to use a weighted average of equations of both groups as benchmark. A few of them can provide additional light on geographical or time differences in the unexplained residual. In particular in the Juhn-Murphy-Pierce decomposition (Juhn *et al.* 1991), the difference between average unexplained residuals can be further decomposed under the extreme hypothesis that it can be entirely ascribed to differences in unobserved productive characteristics and in their remuneration. In this case,

geographical or time differences in remuneration rates for unobserved characteristics are estimated by assuming that they are fully reflected by differences between residual distributions of the benchmark group (that is assuming, in the case of the gender wage gap, that greater residual male wage dispersion reflects steeper returns to marketable characteristics). Then geographical or time differences in gaps in unobservable characteristics are obtained by subtraction. This approach is used by Blau and Kahn to underscore the role of institutions affecting the dispersion of wages in shaping the gender wage gap (see *e.g*. Blau and Kahn, 1996, 2000). However, it rules out discrimination by assumption.

Model specification for the analyses of the gender employment and wage gaps

Employment

Aggregate analysis

The following simple linear regression model is estimated for the aggregate gender employment gap:

$$EG_{it} = \alpha PMR_{it} + X_{it}\beta + \mu_i + \lambda_t + \delta_i T + \varepsilon_{it}$$

where *EG*, *PMR*, and *X* stand for the working-age population gender employment gap, product market regulation and a vector of control variables, respectively, while μ, λ and *T* stand for country *i* fixed effects, time *t* effects and (country-specific) time trends (that are included to control for the marked downward trend in both the employment gap and regulation), α and β are parameters to be estimated and ε is a standard error term. In contrast to section 3.1, the analysis focuses here on the whole working-age population rather than prime-age workers only to maximise the length of time series. In certain specifications, import penetration is used as an alternative indicator of competition or as an additional control variable. In the analysis of ratification of international anti-discrimination conventions, qualitative or quantitative indexes of convention ratifications are added to the equation above.

The gender gap in labour force participation and the aggregate employment rate are two key control variables that are systematically included in the specifications (except in sensitivity analyses that replicate results with no controls but fixed effects and trends), the former representing labour supply factors and the latter proxying the effect of aggregate labour demand (whose movements are likely to affect disproportionately groups that are at the margins of the labour market). Both of them are endogenous and the interpretation of their coefficient might be problematic. In particular, the coefficient of the participation gap might be overestimated to the extent that third factors might co-determine participation and employment gaps. For instance, lower opportunities for women in high-skilled/high-pay jobs (consistent with correspondence tests, see main text) could simultaneously reduce female employment and participation. However, as a first approximation, this might be regarded as a relatively minor problem insofar as it will leave a smaller share of the employment gap to be explained by other factors and, thus, will probably lead to an underestimate of the coefficients of these factors, including product market regulation. Conversely, even in an equation where total employment is included, insofar as product market regulation is likely to affect aggregate demand, its coefficient will probably capture the effect of regulatory reforms on labour demand and cannot be interpreted as yielding evidence on discrimination. To sort this problem out, the model above is estimated in two steps. First, the employment gap is regressed on the participation gap and the aggregate employment rate plus country and time effects and country-specific trends; second, the residual from the first step is then regressed on product market regulation, other controls and country and time effects and country-specific trends. The estimated effect of regulation can then be interpreted as its effect over and above its impact on aggregate demand. Only two-step estimates are reported, although differences from standard, single-step, OLS estimates are minor. Following Black and Lynch (2001) among others, first-step estimates are obtained on the largest possible sample, in order to maximise their efficiency, even though, depending on the specification, the second-step samples tend to be

smaller (however, the same results concerning product market regulation are obtained when the same sample is used for both the first and the second step).

Two other groups of controls deserve attention. First, structural shifts towards service sectors have modified labour demand, possibly increasing opportunities for women. As the indicator of product market regulation that is used here is based on regulation in non-manufacturing industries, one can expect that its estimated coefficient partially reflects this structural shift rather than its effect on discriminatory behaviours. For this reason, the service sector share – or, alternatively, the share of industries for which regulatory indicators are constructed – is included in most regression models. Second, deregulation in the product market, by reducing the size of rents, might reduce the bargaining power of insiders, thereby increasing opportunities for women who, being newcomers in the labour market, are more represented among outsiders. To control for this effect, a few of the equations include trade union density, whose time path can proxy the evolution of insiders' strength. In addition, most models include an interaction between the aggregate employment rate and the average degree of coverage of collective bargaining agreements over the sample period, which is expected to attract a negative sign since the effect of aggregate demand on the employment of disadvantaged groups is likely to be greater, the greater the bargaining power of insiders.

The regression analysis of the impact of product market regulation on the employment rate is performed on data concerning 21 OECD countries between 1975 and 2003 for Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Netherlands, Norway, New Zealand, Portugal, Spain, Sweden, Switzerland, United Kingdom, United States. Following OECD (2004, Chapter 2) and Bassanini and Duval (2006), in both the aggregate employment and wage gap analyses, observations for Germany, Finland and Sweden in 1991-1992 are excluded from the sample and additional country-specific dummies for the post-1992 period for these countries are included in order to capture the German reunification, the impact on the Finnish economy of the fall of the Soviet Union and the Swedish housing and banking crisis.

Industry-level analysis

The role of competitive pressures in shaping gender employment gaps is analysed also on the basis of industry-level data for 13 European countries and 16 manufacturing and non-manufacturing industries from 1992 to 2002. As regulatory indicators are available for 3 industries only at the available level of disaggregation (STAN standard classification, corresponding to 2 letters of the ISIC Rev.3 classification), it was not possible to replicate meaningfully the aggregate model using data on these three industries (see below). By contrast, following Griffith, Harrison and Simpson (2006), average profitability, defined as the ratio of output to intermediate input, labour and capital costs, is used here as a proxy for product market power (and therefore of lack of competition). Boone (2000) shows that this measure of (lack of) competition is preferable to most other commonly-used measures. It is more theoretically robust, particularly than those based on market concentration and market shares: it can be shown to be equivalent to the measure proposed by Roeger (1995), and is equivalent to the price-cost margin or mark-up under the assumption of constant returns to scale.

The estimated model can be written as:

$$EG_{ijt} = \alpha P_{ijt} + X_{ijt}\beta + \mu_{it} + \eta_j + \varepsilon_{it}$$

where P stands for average profitability of industry j in country i at time t, X for a vector of controls defined at the country, time and industry level, while μ and η captures country-by-time and industry fixed effects, the former controlling for all aggregate factors including determinants of labour market participation. To control for the overall labour demand of the industry, all specifications include the

logarithm of total employment in the industry and its interaction with the average degree of coverage of collective bargaining agreements. For the same reasons as above, equations are also estimated in two steps. First, the employment gap is regressed on all controls and fixed effects; second, the residual from the first step is regressed on profitability and fixed effects. Again, only the two-step estimates are reported. In contrast with the aggregate analysis, the employment gap is defined here simply as the difference between male and female prime-age employees as a percentage of male prime-age employment. In a number of estimates, industry-by-time effects are also included to control for industry-specific trends.

One problem with the use of average profitability indicators is that they might be endogenous. First, the time path of average price-cost margins might, in some rare cases, not reflect the dynamics of competition (Boone, 2008). Second, the empirical measure of profitability used is very crude. In both these cases, measurement error is likely to bias estimates towards zero. Third, the empirical measure, due to the way it is computed, might reflect investment in intangibles, such as expenditure in research & development (R&D) activities and training. Yet, R&D intensity and training in European countries have increased the most in non-manufacturing industries (OECD, 2007, Bassanini and Brunello, 2007) where also the greatest contraction of the employment gap was observed; therefore, one can expect a negative correlation between the accumulation of intangible capital and the gender employment gap. In all these three cases, the coefficient of profitability is likely to be downward biased or underestimate the effect of competition, making it therefore more difficult to find evidence of taste-based discrimination. Fourth, mark-ups appear to have a countercyclical behaviour. Whether this makes estimates based on profitability measures more informative or, conversely, induces a bias depends on whether the countercyclical patterns are due to the fact that competition increases in upturns for reasons unrelated to regulation, as the literature seems to suggest, or reflects other factors (see Oliveira Martins and Scarpetta, 2002, and the literature cited therein). Fifth and more problematic, if firms statistically discriminate on the basis of true stereotypes, one would expect prejudiced firms to make greater profits, and this would bias upwards the estimated coefficient of profitability, due to reverse causality.

While downward biases are a minor problem – they simply make it more difficult to establish evidence of discrimination when discrimination is present – upward biases are a matter of concern. To sort this problem out, one could look at regulatory reforms in the 3 industries for which data are available for all countries and years. However, the sample size would be very small in this case, and country-by-time dummies would sweep away the effect of a large number of reforms that are quasi-simultaneous in all the three industries. For this reason, and given that our data are limited to European countries, the alternative strategy suggested by Bassanini and Brunello (2007) is followed here – the latter takes advantage of the fact that nation-wide aspects of regulation are controlled for in specifications including country-by-time effects. The sample is restricted to a time period sufficiently remote from the implementation of the European Single Market Programme (SMP) in 1992 (starting in 1994 in countries that were EU members when the SMP came into action and in 1995 in countries that were EFTA members at that time). It is then further restricted to non-manufacturing industries for which regulation data are available and manufacturing industries where, as a first approximation, no change in industry-specific anti-competitive regulation can be assumed in the post-SMP period (yielding a total of 11 industries). Then the equation above is re-estimated using industry-specific regulation data, set to be equal to an arbitrary constant in manufacturing. It can be argued, however, that, although intra-European trade barriers were lifted by the implementation of the SMP, trade barriers still exist with respect to non-European countries. A further refinement of this strategy consists in exploiting the fact that EU trade policy is common to all EU member countries. The sample is therefore further reduced to EU members only (thus excluding Norway), for which there is no cross-country variation in sector-specific trade barriers, and equations are re-estimated by including industry-by-time dummies, that control for any trade barrier that varies only across industries and

over time. [1] Furthermore, in a sensitivity analysis on the same reduced sample, the equation above is re-estimated using an instrumental-variables approach where regulatory indicators are used as an instrument for profitability.

Wage

For the wage gap analysis, Weichselbaumer and Winter Ebmer's meta-data (kindly provided by the authors) are matched with additional estimates of the unexplained wage-gap residual obtained for the purpose of this chapter in 13 European countries using ECHP data (see below). The resulting matched meta-dataset is restricted to OECD countries – that is to 1024 separate estimates of the wage gap in 20 OECD countries between 1975 and 2001. It is then analysed with the instruments of metadata, using a two-stage analysis. In a first stage the wage residual is regressed on meta-variables plus country-by-time fixed effects. The included meta-variables follow the preferred specification of Weichselbaumer and Winter Ebmer (2005) and are of essentially three categories: *i)* variables concerning data selection; *ii)* variables capturing econometric and decomposition methods; and *iii)* variables specifying the type of controls included in the regressions from which unexplained wage gap residuals were obtained. The objective of these meta-covariates is to make residual wage gaps comparable independently of methods, selection criteria and specifications. First-stage estimates of country-by-time effects represent therefore estimates of wage residuals that are comparable across countries and over time. Following Weichselbaumer and Winter Ebmer (2005), probability weights equal to the inverse of the number of estimates per country and year provided by each study are assigned to each observation. In a second stage, these estimated effects are regressed on policy covariates, weighting observations on the basis of first-stage variances of country-by-time effects. The second-stage specification takes the form:

$$W_{it} = \alpha PMR_{it} + X_{it}\beta + \mu_i + \lambda_t + \delta_i T + \varepsilon_{it}$$

where *W* represents first-stage country-by-time effects, while other symbols are as above. Controls include the logarithm of the relative employment rate and labour market institutions that could also capture wage dispersion (unfortunately OECD time series on wage dispersion are too patchy to be matched with wage residual data). In the analysis of ratification of international conventions, the quantitative index of convention ratifications only is included – since by 1975, the first year of the sample, most OECD countries had already ratified at least one ILO convention on discrimination, the qualitative index shows too little time variation to be used in the analysis. The final second-stage sample is strongly unbalanced with a total size of 188 observations.

The use of a two-step estimation strategy is a major difference from Weichselbaumer and Winter Ebmer (2007), who estimate everything in one step. The reason to choose it here is that half of the studies in the sample concerning OECD countries are based on US data. As a consequence, with single-stage estimates, results will be driven by one single country. This is not the case in their paper since their sample also contains non-OECD countries.

Unexplained wage-gap residuals from ECHP data are obtained by applying the Oaxaca-Blinder decomposition (see above), using estimated male regression coefficients to identify returns to characteristics in the absence of discrimination. For each country and year, the logarithm of hourly wages

1. It is important to observe here that, particularly in specifications where the sample is further restricted to EU countries only, most of the remaining regulatory changes affecting manufacturing industries – that is administrative regulation that is common to all industries in a country and tariff and non-tariff barriers that are industry-specific but common to all countries – are controlled for by country-by-time and industry-by-time dummies. In other words, in manufacturing, the correlation between profitability and employment gap should be interpreted as over and above the effect of these regulations.

of prime-age wage and salary male workers in the private sector, working at least 15 hours per week at the time of the survey, are regressed on a quadratic in potential experience, 3 levels of educational attainment, five categories of firm size, a dummy for previous unemployment experience (plus a dummy for missing values as regards to previous unemployment experience), a dummy for part-time status, regional dummies and a spline in tenure (over the ranges 0-1 year, 1-3 years, 3-6 years, 6-9 years and 9-15 years), plus a dummy for tenure greater than 15 years and a dummy for non-reported tenure values.

The meta-analysis is performed on a strongly unbalanced sample concerning 20 OECD countries between 1975 and 2001 (Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, the Netherlands, Norway, New Zealand, Portugal, Spain, Sweden, Switzerland, the United Kingdom, the United States). The second-stage sample contains a maximum of 188 country-by-year observations. Due to the small sample size, results from this wage gap analysis must be taken with caution. To improve the reliability of estimates, a standard procedure to eliminate large outliers was used. First, the dependent variable was regressed on a time trend only and, within this "neutral" specification, outliers (that is observations with excessive deviation from a common time trend) were identified using the asymptotic Welsch-Kuh distance cutoff and the covariance ratio cutoff (see Chatterji and Hadi, 1988). Then second-stage specifications corresponding to the equation above were re-estimated excluding these outliers. This correction has a noteworthy impact on the coefficient of product market regulation.

Detailed estimation results

Results on the aggregate employment gap effect of product market regulation are presented in Table 3.B.1. Industry-level results are presented in Table 3.B.2. Aggregate estimates are robust to a series of sensitivity exercises: *i)* estimating the specifications in first-differences ; *ii)* excluding time trends from the specifications ; *iii)* including the logarithm of import penetration as an additional covariate or as an alternative to regulatory indicators (the latter permitted to expand sample size to 28 countries) ; *iv)* excluding the labour market participation gap and total employment rate from the specifications, either altogether or one by one; *v)* including the gender gap in educational attainment; *vi)* including the logarithm of average years of education; *vii)* substituting the share of industries covered by the regulatory indicators for the share of total services ; and *viii)* including the output gap in the specifications. Main results are also robust to alternative specifications of the dependent variable such as the absolute gender difference in employment rates and the gender gap in non-employment rates. These results are not reported in Table 1, but are available from the OECD Secretariat on request.

The analysis of the association between convention ratifications and the employment gap is performed on two unbalanced samples: an extended sample covering all countries and years for which data are available – including 28 countries from 1960 to 2003 (all OECD countries except Iceland and Luxembourg) – and a more restricted sample – 21 countries from 1975 to 2003 as above – where product market regulation indicators are available and a larger list of controls can be included. However, since most OECD countries had already ratified at least one convention by 1975, the analysis of the association of the qualitative index with the employment gap is not repeated in the restricted sample. Results from these experiments are presented in Table 3.B.3.

The dates of ratification of international conventions are potentially endogenous variables. In particular, countries might ratify anti-discrimination conventions when female presence in the labour market becomes important, so that *i)* women can lobby for the adoption of anti-discrimination legislation and *ii)* anti-discrimination legislation, being *de facto* less binding, attracts less opposition. As this is essentially a problem of reverse causality, Granger causality tests are performed to check that there is no reverse causality bias. Performed on the 1960-2003 sample, they show evidence that indexes of convention ratifications Granger-cause the employment gap and, conversely, are not Granger-caused by it at

conventional significance levels. These results are not reported in Table 3.B.3 but are available from the Secretariat on request.

Results from wage gap equations are presented in Table 3.B.4 and Table 3.B.5. To increase sample size, the EPL indicator has been set at its 1982 values for years preceding that date. Due to the small sample size, additional institutional variables included in the specification corresponding to the fourth and eight columns of Table 1 are not included in specifications in Tables 3.B.4 and 3.B.5.

The effect of product market regulation on the wage gap is robust to the inclusion of the employment gap (see Table 3.B.4). The reverse is also true: if the weighted average of available unexplained wage-gap residuals from different studies, corrected by meta control variables – that is the dependent variable used in the second stage of wage-gap equations presented in Table 4, is included in the employment gap equations, the estimated effect of regulation increases slightly, remaining significant at the 1% level. The estimated coefficient of the wage gap variable appears to be negatively sloped, as expected, although being generally insignificant.

Table 3.B.1 **Determinants of the gender employment gap**

Working-age population, 1975-2003

	No interactions				Including the interaction between collective bargaining coverage and total employment rate			
First-stage estimates								
Total employment rate (in percent)	-0.10***				-0.09***			
	[3.69]				[3.14]			
Gender gap in labour participation rates (in percent)	0.91***				0.91***			
	[40.39]				[38.80]			
Interaction between collective bargaining coverage and total employment rate					-0.01***			
					[4.10]			
Observations	698				664			
R-squared	0.997				0.997			
Second stage estimates								
Product market regulation	**1.09*** [7.01]**	**0.87*** [4.42]**	**0.87*** [4.03]**	**1.06*** [3.88]**	**1.14*** [7.60]**	**0.94*** [4.90]**	**0.97*** [4.66]**	**1.26*** [4.82]**
Share of services in GDP		-12.73***	-15.30***	-25.72***		-13.50***	-14.56***	-24.96***
		[3.41]	[3.76]	[4.17]		[3.34]	[3.62]	[4.12]
Union density		0.06**	0.08***	-0.02		0.06**	0.08**	-0.03
		[2.23]	[2.69]	[0.27]		[2.14]	[2.55]	[0.44]
EPL index			-0.01	0.31			-0.03	0.41
			[0.02]	[0.69]			[0.09]	[0.92]
High corporatism dummy			-0.61	0.94			-0.73*	1.28*
			[1.39]	[1.19]			[1.67]	[1.72]
Tax wedge (couples)			-0.04*	0.06			-0.04*	0.07
			[1.7]	[0.94]			[1.89]	[1.03]
Average benefit replacement rate			-0.00	0.10**			0.00	0.11***
			[0.12]	[2.38]			[0.18]	[2.61]
Leave weeks				-0.00				-0.00
				[0.70]				[0.75]
Relative marginal tax rate on the second earner				1.55**				1.29**
				[2.45]				[2.08]
Tax incentives to work part-time				0.10				0.10
				[1.47]				[1.47]
Family cash benefits				-0.18**				-0.14*
				[2.03]				[1.67]
Observations	602	436	414	244	573	414	414	244
R-squared	0.198	0.377	0.393	0.585	0.209	0.362	0.376	0.598
Country dummies	yes				yes			
Time dummies	yes				yes			
Country-specific time trends	yes				yes			

Notes: In the first stage the dependent variable is the gender employment gap (in percentages) in the working-age population and specifications include variables indicated in the top panel plus country dummies, time dummies and country-specific time trends. In the second stage, the residual from the first stage is regressed on variables in the bottom panel plus country dummies, time dummies and country-specific time trends. Product market regulation theoretically varies between 0 and 6 from the least to the most regulated. Observations and R-squared statistics at the bottom of each panel refer to either the first stage (top panel) or the second stage (bottom panel). First-stage estimates are based on the largest possible sample including the same countries, which implies that: a) observations are not the same in the two stages; and b) several second-stage estimates share the same first stage. In interactions, variables are defined as deviations from the sample mean, to preserve comparability of coefficients of non-interacted variables. Robust t statistics in brackets. * significant at 10%; ** significant at 5%; *** significant at 1%

Source: OECD estimates.

Table 3.B.2 **The effect of competition and regulation on industry-level gender employment gaps**

Prime-age workers, 1992-2002

Second stage estimates	**Largest sample**		**Reduced sample**				**Reduced sample (excluding Norway)**	
Profitability	30.99***	31.81***	19.64**		22.82***		16.84*	
	[3.05]	[2.73]	[2.47]		[2.84]		[1.837]	
Product market regulation				2.10***		1.89**		3.16***
				[2.73]		[2.11]		[3.71]
Basic controls	yes	yes	yes	yes	yes	yes	yes	yes
Extended controls	no	yes	no	no	yes	yes	yes	yes
Country by year dummies	yes	yes	yes	yes	yes	yes	yes	yes
Industry dummies	yes	yes	yes	yes	yes	yes	yes	yes
Industry by year dummies	no	yes	no	no	yes	yes	yes	yes
Observations	1,828	1,670	1,053	1,166	998	1,089	921	1,012
R-squared (second-stage)	0.02	0.02	0.11	0.10	0.11	0.11	0.12	0.13
Difference in the impact of profitability between manufacturing and non-manufacturing	2.54	3.25	-0.60	..	5.37	..	43.63	..
	[0.11]	[2.57]	[0.03]		[0.21]		[1.61]	

Notes: In the first stage, the dependent variable is the gender wage and salary employment gap (in percentages) in the population aged between 25 and 54 years. In the second stage, the residual from the first stage is regressed on variables presented in the table plus country dummies, time dummies and country-specific time trends. Profitability is defined as the ratio of output to intermediate input, labour and capital costs, and varies between .94 and 1.79 in the sample. Product market regulation varies between 0 and 6 from the least to the most regulated. Basic controls are the logarithm of total employment in the industry and its interaction with the average coverage of collective agreements. Extended controls include: the share of employees aged between 45 and 54 years, the share of employees with more than upper secondary education, the share of part-time employees and the share of employees working in firms with 10 employees or less. Observations and R-squared statistics refer to the second stage. The largest sample is an unbalanced sample including 8 manufacturing and 8 non-manufacturing industries in Norway and pre-enlargement EU countries, excluding Greece, Luxembourg and Sweden, from 1992 to 2002. The reduced sample is an unbalanced sample including 8 manufacturing and 3 non-manufacturing industries in the same countries from 1994 to 2002, except for Austria, Finland and Norway, where the sample is further restricted to 1995-2002. The last line of the table reports for each column, the coefficient difference between manufacturing and non-manufacturing for variants of the same specifications in which the coefficient of profitability is allowed to vary across groups of industries. This test is not available for specifications with regulatory indicators since the latter are set equal to an arbitrary constant in manufacturing. Robust t statistics in brackets. * significant at 10%; ** significant at 5%; *** significant at 1%

Interpretation: The table shows that a 1 point fall in anti-competitive regulation (almost corresponding to the difference between the OECD average and the least regulated country in 2002) would decrease the employment gap by between 0.9 and 1.9 percentage points. Similarly, a 0.04 increase in profitability (corresponding to the average increase in profitability between 1992 and 2002 in the sample) would increase the gender employment gap by between 0.7 and 1.3 percentage points.

Source: OECD estimates.

Table 3.B.3 **Ratification of anti-discrimination conventions and the gender employment gap**

Determinants of the gender employment gap (in percentage), working-age population

	Qualitative index				**Quantitative index**						
	Period 1960-2003				Period 1960-2003				Period 1975-2003		
Second stage estimates											
Anti-discrimination conventions (qualitative index)	-1.15***	-1.11***	-1.17***	-1.19***							
	[6.80]	[6.74]	[6.93]	[6.96]							
Anti-discrimination conventions (quantitative index)					-0.18*	-0.16*	-0.18**	-0.20**	-0.41*	-0.44**	-0.44*
					[1.96]	[1.77]	[2.00]	[2.12]	[1.92]	[2.06]	[1.84]
Work ban conventions		0.88***	0.89***	0.87***		0.90***	0.93***	0.91***	0.51***	0.58***	0.58***
		[6.81]	[6.83]	[6.66]		[6.96]	[7.04]	[6.89]	[2.59]	[2.89]	[2.61]
Log import penetration			-0.89**	-0.80*			-0.77*	-0.71*	-2.88***	-2.59***	-2.46***
			[2.17]	[1.93]			[1.84]	[1.66]	[4.39]	[3.94]	[3.46]
Collective bargaining conventions				0.17				0.14			
				[0.88]				[0.73]			
Product market regulation									0.83***	0.86***	0.86***
									[4.34]	[4.59]	[4.09]
Share of services in GDP									-9.66***	-11.19***	-13.00***
									[2.66]	[3.04]	[3.23]
Union density										0.06**	0.08***
										[2.4]	[2.7]
EPL index											-0.08
											[0.28]
High corporatism dummy											-0.43
											[1.08]
Tax wedge (couples)											-0.02
											[0.83]
Average benefit replacement rate											-0.01
											[0.34]
Country dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Ttime dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Country-specific time trends	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Observations	971	971	953	953	971	971	953	953	436	436	414
R-squared	0.046	0.093	0.100	0.101	0.005	0.053	0.058	0.059	0.400	0.414	0.425

Note: See Table 3.B.1. Robust t statistics in brackets. * significant at 10%; ** significant at 5%; *** significant at 1%.

Source: OECD estimates.

Table 3.B.4 **Determinants of the logarithm of the gender wage gap**

Meta-analysis of the unexplained wage gap residual, 1975-2001

	No control for outliers				**Excluding outliers**			
Second stage estimates								
Product market regulation	**0.059****	**0.066*****	**0.068*****	**0.056****	**0.032***	**0.038****	**0.041****	**0.034***
	[2.52]	**[2.79]**	**[2.85]**	**[2.11]**	**[1.82]**	**[2.18]**	**[2.27]**	**[1.70]**
EPL index		-0.072*	-0.070*	-0.076*		-0.064**	-0.063**	-0.060*
		[1.78]	[1.74]	[1.81]		[2.15]	[2.10]	[1.93]
Log gender employment gap			-0.233	-0.345			-0.199	-0.452
			[0.67]	[0.72]			[0.78]	[1.25]
Average benefit replacement rate				-0.001				0
				[0.44]				[0.07]
High corporatism dummy				0.014				0.025
				[0.28]				[0.67]
Tax wedge (couples)				0.001				0.002
				[0.22]				[0.65]
Union density				0				0
				[0.11]				[0.10]
Country dummies	yes	yes	yes	yes	yes	yes	yes	yes
Time dummies	yes	yes	yes	yes	yes	yes	yes	yes
Country-specific time trends	yes	yes	yes	yes	yes	yes	yes	yes
Observations	188	188	188	180	185	185	185	177
R-squared	0.735	0.742	0.743	0.739	0.79	0.798	0.799	0.782

Notes: In the first stage the dependent variable is the unexplained residual of gender wage gap obtained in various studies through regression-based decompositions and co-variates includes country-year fixed effects plus meta-variables capturing regression and decomposition methods, selection criteria and specifications (in first-stage regressions, probability weights equal to the inverse of the number of estimates per country and year provided by each study are assigned to each observation). In the second stage, the country-year fixed effects from the first stage are regressed on the variables in the bottom panel plus country dummies, time dummies and country-specific time trends (observations are weighted by the inverse of their first-stage variances). Product market regulation theoretically varies between 0 and 6 from the least to the most regulated. Observations and R-squared statistics refer to the second stage. 3 outliers have been identified applying the asymptotic Welsch-Kuh distance cut-off and the covariance ratio cut-off to a regression of the second-stage dependent variable on a linear trend. Robust t statistics in brackets. * significant at 10%; ** significant at 5%; *** significant at 1%

Source: OECD estimates.

Table 3.B.5 **Ratification of anti-discrimination conventions and the gender wage gap**

Meta-analysis of the unexplained wage gap residual, 1975-2001

	No control for outliers			**Excluding outliers**		
Second stage estimates						
Anti-discrimination conventions (quantitative index)	-0.071**	-0.065**	-0.070**	-0.050**	-0.044*	-0.047*
	[2.19]	[2.02]	[2.13]	[2.05]	[1.82]	[1.94]
Work ban conventions			0.014			0.010
			[0.54]			[0.52]
Product market regulation	0.066***	0.071***	0.072***	0.037**	0.042**	0.043**
	[2.81]	[3.03]	[2.94]	[2.10]	[2.39]	[2.36]
EPL index		-0.063	-0.062		-0.057*	-0.056*
		[1.57]	[1.53]		[1.94]	[1.88]
Log gender employment gap			-0.276			-0.228
			[0.78]			[0.87]
Country dummies	yes	yes	yes	yes	yes	yes
Time dummies	yes	yes	yes	yes	yes	yes
Country-specific time trends	yes	yes	yes	yes	yes	yes
Observations	188	188	188	185	185	185
R-squared	0.745	0.75	0.753	0.797	0.803	0.805

Note: See Table 3.B.4. Robust t statistics in brackets. * significant at 10%; ** significant at 5%; *** significant at 1%.

Source: OECD estimates.

ANNEX 3.C
SUPPLEMENTARY FIGURES

Figure 3.C.1 **Average gender wage gap and employment rate gap for prime age, by education, 2001**

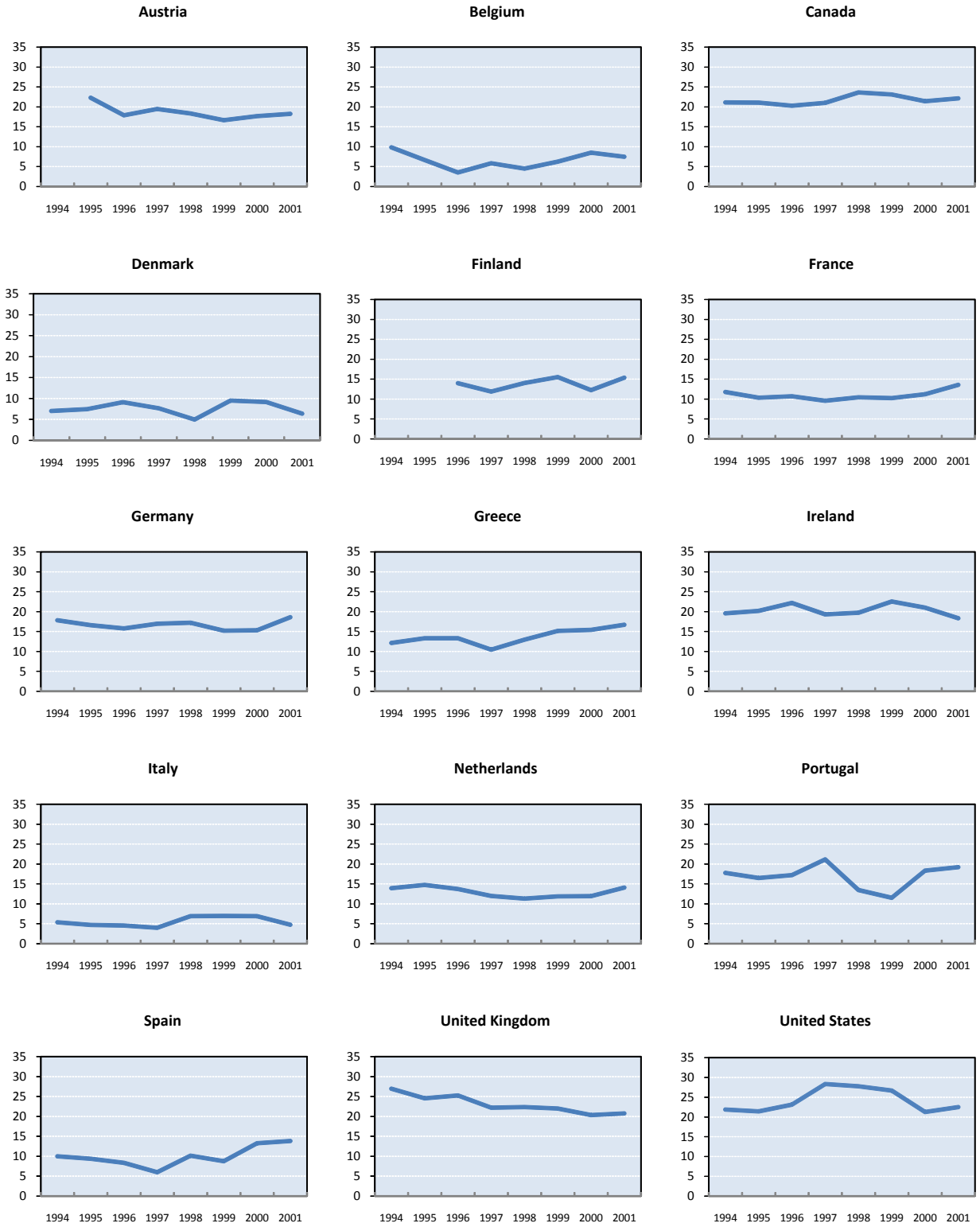
Percentages

Note: Data refer to 2000 for Sweden.

Source: See below.

Figure 3.C.2. **Trends in median gender wage gaps for prime age workers, 1994-2001**

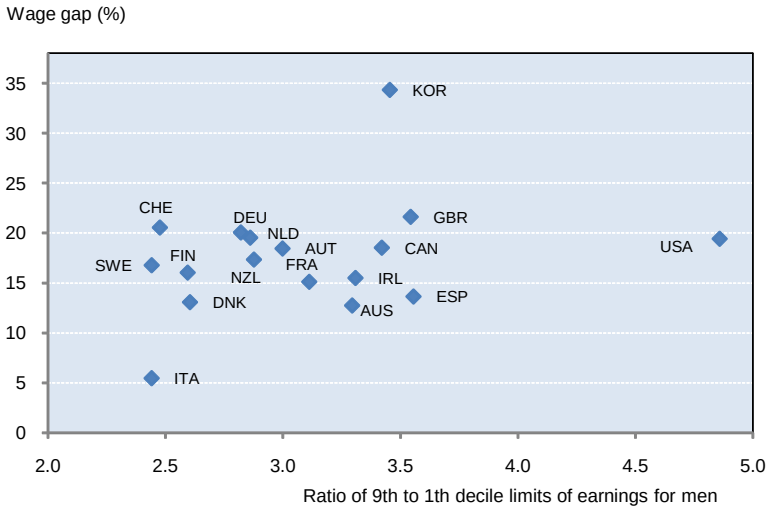
Percentages



Source: See below.

Figure 3.C.3 **Wage dispersion and the average gender wage gap**

Gender wage gaps and ratio of 9th to 1th decile for men in 2001[a]



a) For earnings dispersion, data refer to 2004 for Australia, 2002 for France, Spain and Switzerland, 2000 for Ireland, 1996 for Italy and 1999 for Korea.

Source: Earnings dispersion: OECD database on Earnings Distribution; Wage gap: see below.

DATA SOURCES AND DEFINITIONS

Details on definitions and sources for the regression analysis

Aggregate variables

	Definitions	Sources
Aggregate employment rate	Employed workers as share of the working-age population (15-64 age group), in %. Data adjustment: While the primary source is the OECD Database on Labour Force Statistics, Annual Labour Force Statistics –which tend to be available over longer time periods– were also used in some cases to extrapolate employment rates backwards (under the assumption of similar percentage changes in unemployment and employment rates in both sources). Missing observations are obtained by linear interpolation when possible.	OECD, Database on Labour Force Statistics; OECD, Annual Labour Force Statistics.
Group-specific employment rates	Employed workers as share of the corresponding population group, in %.	OECD, Database on Labour Force Statistics.
Wage gaps	Unexplained wage gap residuals from regression-based decompositions. The primary source is the meta-dataset of Weichselbaumer and Winter-Ebmer (2005), kindly provided by the authors. Additional estimates for 13 European countries using ECHP data, by applying the Oaxaca-Blinder decomposition and using estimated male regression coefficients to identify returns to characteristics in the absence of discrimination. For each country and year, the logarithm of hourly wages of prime-age wage and salary male workers in the private sector, working at least 15 hours per week at the time of the survey, is regressed on a quadratic in potential experience, 3 levels of educational attainment, five categories of firm size, a dummy for previous unemployment experience (plus a dummy for missing values as regards to previous unemployment experience), a dummy for part-time status, regional dummies and a spline in tenure (over the ranges 0-1 year, 1-3 years, 3-6 years, 6-9 years and 9-15 years), plus a dummy for tenure greater than 15 years and a dummy for non-reported tenure values.	Weichselbaumer and Winter-Ebmer (2005); OECD calculations from the European Community Household Panel (ECHP)
Meta control variables	Meta control variables are defined as in the preferred specification of Weichselbaumer and Winter-Ebmer (2005). They concern data selection variables, econometric and decomposition methods and the type of controls included in the regressions from which unexplained wage gap residuals were obtained.	Weichselbaumer and Winter-Ebmer (2005); OECD calculations from the European Community Household Panel (ECHP)

Product market regulation	OECD summary indicator of regulatory impediments to product market competition in seven non-manufacturing industries. The data cover regulations and market conditions in seven energy and service industries: gas, electricity, post, telecommunications (mobile and fixed services), passenger air transport, railways (passenger and freight services) and road freight. Detailed indicators exist also at the 1-digit ISIC rev. 3 classification for 3 industries (energy, transports and communications).	Conway *et al.* (2006)
Quantitative index of anti-discrimination convention ratifications	Number of conventions that are ratified and not denounced by a country at a given date, among ILO's Convention on Equal Remuneration for Men and Women Workers for Work of Equal Value (ILO C100), ILO's Convention on Discrimination in Respect of Employment and Occupation (ILO C111) and the UN's Convention on the Elimination of All Forms of Discrimination against Women (CEDAW). *Data adjustment*: in the case of the CEDAW, 1/3 of unit is subtracted for reservation to art. 11(1b), and 1/6 of unit is subtracted for each reservation to art. 11(1c), art. 11(1d) and art. 11(2). The qualitative index is a dichotomous variable taking value 1 if at least one of the conventions is ratified and not denounced.	ILOLEX, http://www.ilo.org/ilolex/english/docs/declprint.htm CEDAW, http://www.un.org/womenwatch/daw/cedaw/states.htm.
Qualitative index of anti-discrimination convention ratifications	Dichotomous variable taking value 1 if at least one of the following conventions is ratified and not denounced: ILO's Convention on Equal Remuneration for Men and Women Workers for Work of Equal Value (C100), ILO's Convention on Discrimination in Respect of Employment and Occupation (C111) and the UN's Convention on the Elimination of All Forms of Discrimination against Women (CEDAW).	ILOLEX, http://www.ilo.org/ilolex/english/docs/declprint.htm CEDAW, http://www.un.org/womenwatch/daw/cedaw/states.htm.
Index of work-ban convention ratifications	Number of conventions that are ratified and not denounced by a country at a given date, among ILO's Conventions on the Employment of Women on Underground Work in Mines of all Kinds (C45) and Night Work of Women Employed in Industry (C89).	ILOLEX, http://www.ilo.org/ilolex/english/newratframeE.htm.
Index of collective bargaining convention ratifications	Number of conventions that are ratified and not denounced by a country at a given date, among ILO's Conventions on Freedom of Association and Protection of the Right to Organise (C87) and the Application of the Principles of the Right to Organise and to Bargain Collectively (C98).	ILOLEX, http://www.ilo.org/ilolex/english/docs/declprint.htm.
Union density	Trade union density rate, *i.e.* the share of workers affiliated to a trade union, in %.	Bassanini and Duval (2006)
Union coverage	Collective bargaining coverage rate, *i.e.* the share of workers covered by a collective agreement, in %.	Bassanini and Duval (2006)
Degree of corporatism	Indicator of the degree of centralisation/co-ordination of the wage bargaining processes, which takes values 1 for decentralised and uncoordinated processes, and 2 and 3 for intermediate and high degrees of centralisation/co-ordination, respectively. The "high corporatism" dummy variable frequently used in this paper takes value 1 when bargaining is centralised or coordinated and zero otherwise.	Bassanini and Duval (2006)
EPL index	OECD summary indicator of the stringency of employment protection legislation incorporating both regular contracts and temporary work. *Data adjustment*: in the aggregate wage gap regressions, this indicator is assumed to be constant at its 1982 value between 1975 and 1982.	OECD (2004)
Labour tax wedge	Tax wedge between the labour cost to the employer and the corresponding net take-home pay of the employee for a single-earner couple with two children earning 100% of APW earnings. The tax wedge expresses the sum of personal income tax and all social security contributions as a percentage of total labour cost.	Bassanini and Duval (2006)
Average unemployment benefit replacement rate	Average unemployment benefit replacement rate across two income situations (100% and 67% of APW earnings), three family situations (single, with dependent spouse, with spouse in work) and three different unemployment durations (first year, second and third years, and fourth and fifth years of unemployment).	Bassanini and Duval (2006)
Weeks of unpaid parental leave	Maximum number of leave weeks that can be taken by a mother for the birth of a first child as maternity leave, parental leave and childcare leave. Focus is on the most generous provisions that can be obtained, even though these may not apply to all women depending on their employment history or income. Only leave provided under national legislation is used (variations in schemes by region, province, länder, or canton are not included).	Bassanini and Duval (2006)

Tax incentives for part-time work	Increase in household disposable income between a situation where the husband earns the entire household income (133% of average production worker earnings) and a situation where husband and wife share earnings (100% and 33% of average production worker earnings respectively) for a couple with two children. Denoting the first scenario by A and the second by B, the calculation is: $Tax incentives to part-time = \frac{(Household net income)_A - (Household net income)_B}{(Household net income)_A}$	Bassanini and Duval (2006)
Relative marginal tax rates on second earners	Ratio of the marginal tax rate on the second earner to the tax wedge for a single-earner couple with two children earning 100% of APW earnings (see definition of the "labour tax wedge" above). The marginal tax rate on the second earner is in turn defined as the share of the wife's earnings which goes into paying additional household taxes: $Tax\ 2nd\ earner = 1 - \frac{(Household\ Net\ Income)_B - (Household\ Net\ Income)_A}{(Household Gross\ Income)_B - (Household Gross\ Income)_A}$ where A denotes the situation in which the wife does not earn any income and B denotes the situation in which the wife's gross earnings are X% of APW. Two different tax rates are calculated, depending on whether the wife is assumed to work full-time (X = 67%) or part-time (X = 33%). In all cases it is assumed that the husband earns 100% of APW and that the couple has two children. The difference between gross and net income includes income taxes, employee's social security contribution, and universal cash benefits. Means-tested benefits based on household income are not included (apart from some child benefits that vary with income) due to lack of time-series information. However, such benefits are usually less relevant at levels of household income above 100% of APW. *Data adjustments*: as this series began after 1980 for some countries, missing data prior to the first observation were replaced with the value of the variable in the first year it was available.	Bassanini and Duval (2006).
Family cash benefits	Increase in household disposable income from child benefits (including tax allowances) for a single-earner couple earning 100% of APW earnings. It is calculated as follows: $Child\ Benefits = \frac{(Household\ Net\ Income)_B - (Household\ Net\ Income)_A}{(Household\ Net\ Income)_A}$ where A denotes a household earning 100 % of APW without children, and B denotes a household earning 100% of APW with two children.	Bassanini and Duval (2006).
Female (male) education	Number of years of education of the female population aged 25 and over.	Bassanini and Duval (2006)
Average years of education	Number of years of education of the population aged 25 and over.	Arnold, Bassanini and Scarpetta (2007)
Output gap	OECD measure of the gap between actual and potential output as a percentage of potential output.	Bassanini and Duval (2006)
Service sector share	Share of G to Q industries' nominal value-added (ISIC Rev. 3 classification) in the GDP.	OECD, STAN Database.
Network industries share	Share of the nominal value-added of industries E and I (energy, transport and communications, ISIC Rev. 3 classification) in total GDP. These industries are those for which product market regulation indicators are defined.	OECD, STAN Database.

Industry-level variables

	Definitions	**Sources**
Profitability indicator	Ratio of industry output to intermediate input, labour and capital costs. *Data adjustments*: Capital stock is constructed by perpetual inventory method for countries where it is not provided in national accounts at a sufficiently disaggregated level. However, since reconstructed capital stocks are available only in volume terms, in practice nominal capital stocks are obtained by dividing them by value added in volume terms and pre-multiplying them by nominal value added from STAN. In the calculation of the cost of capital, following Griffith et al. (2006), it is assumed that capital flows freely across borders so that all countries face a world interest rate, for which the US long-term interest rate (from Bassanini and Duval, 2006) is used.	All data come from the OECD STAN database, except for data use to compute capital costs that come from OECD ECO/CPE/WP1 (2008)4.
Employment	Number of wage and salary employees	OECD STAN Database
Gender employment gap	*Definition*: Ratio of the male-female difference in the number of wage and salary employees aged 25-54 years and the number of male wage and salary employees aged 25-54 years.	European Labour Force Survey
Share of employees aged between 45 and 54 years	Ratio between the number of wage and salary employees aged 45-54 years and the number of wage and salary employees aged 25-54 years.	European Labour Force Survey
Share of employees with more than upper secondary education	Ratio between the number of wage and salary employees aged 25-54 years with more than upper secondary education and the number of wage and salary employees aged 25-54 years.	European Labour Force Survey
Share of part-time employees	Ratio between the number of wage and salary employees aged 25-54 years working less than 30 hours a week and the number of wage and salary employees aged 25-54 years.	European Labour Force Survey
Share of employees in firms with 10 employees or less	Ratio between the number of wage and salary employees aged 25-54 years working in firms with 10 employees or less and the number of wage and salary employees aged 25-54 years.	European Labour Force Survey

Note: all variables coming from the European Labour Force Survey refer to employees working at least 15 hours a week and living in the same country.

Employment and wage data used in the supplementary figures

Employment rates: Unless otherwise specified, employment data come from the OECD database on Labour Force Statistics. Employment rates by educational attainment are taken from OECD (2007), *Education at a Glance – OECD Indicators*, September, Paris. When necessary (Figure 1) adjustments were made to correct for minor discrepancies between the total employment rate according to the Education at a Glance database and the OECD database on Labour Force Statistics.

Wage data

	Sources
European countries	Unless otherwise specified, data are estimated by the OECD using the European Community Household Panel (ECHP). Hourly wages refer to gross monthly earnings in the main job divided by 52/12 and then by usual weekly hours of work for employees working for at least 15 hours a week. Overtime pay and hours are included.
Australia	Data are derived from the August 2000 Labour Force Survey and the supplementary survey "Employee Earnings, Benefits and Trade Union Membership". Average gross hourly wages are calculated using total weekly earnings divided by actual hours worked.
Canada	Hourly wages are estimated using the Cross National Equivalent File (CNEF). Earnings are gross annual labour earnings divided by annual hours worked.
Korea	Hourly wages are estimated using the Korean Labor and Income Panel Study, wave 4 (2001). For employees paid by the hour, they refer to gross hourly earnings. For employees paid daily, weekly or monthly, hourly earnings are estimated as gross weekly earnings (daily earnings are multiplied by 5 and monthly are divided by 52/12) divided by average weekly hours of work.
New Zealand	Data are from the New Zealand Income Survey which is run annually as a supplement to the Household Labour Force Survey in the June quarter. Data refer to the June 2001 quarter. Information on earnings includes actual and usual wages and salaries (including ordinary time, overtime and other income) for the main job and up to two other jobs. The earnings measure used in the tables is average usual hourly earnings from all wage and salary jobs.
Sweden	The data were provided by Statistics Sweden based on the Statistics Yearbook of Salaries and Wages, 2000. The data come from five different sources, three of which pertain to the public sector and cover the entire population; the other two sources are based on enterprise sample surveys covering the private sector. The wages are gross wages and include agreed bonuses but exclude overtime and profit-sharing. In the public sector the hourly wages were calculated by dividing the monthly wage by 165, the average worked hours per month. In the private sector the hourly wages were calculated by dividing the total wage by contractual worked hours (overtime hours are excluded).
Switzerland	Hourly wages were calculated by the Swiss Statistical Office based on the 2001 Enquête de la Population Active by dividing gross annual earnings by 52 and then by usual weekly hours of work.
United States	Hourly wages are estimated using the March Outgoing Group of the Current Population Survey (CPS). Earnings are gross annual labour earnings divided by annual hours worked. Estimated average wage gaps may be biased by the fact that wage data in the CPS are top coded. This does not hold in the case of median wage gaps.

BIBLIOGRAPHY

Aghion P, *et al.* (2005) Competition and Innovation: An Inverted U Relationship, *Quarterly Journal of Economics*, Vol. 117, pp. 701-772.

Altonji, J., and R. Blank (1999), Race and Gender in the Labor Market, in C. Ashenfelter and D. Card (eds.), *Handbook of Labor Economics*, Vol. 3C, Amsterdam: North-Holland.

Arnold, J., A. Bassanini and S. Scarpetta (2007), Solow or Lucas, "Testing growth models using panel data from OECD countries", *OECD Economics Department Working Paper* No. 582.

Bassanini, A., and G. Brunello (2007), "Barriers to Entry, Deregulation and Workplace Training", *IZA Discussion Paper* No. 2746.

Bassanini, A., and R. Duval (2006), "Employment Patterns in OECD Countries: Reassessing the Role of Policies and Institutions", *OECD Social, Employment and Migration Working Paper* No. 35.

Black, S.E., and L. Lynch (2001), "How to Compete: The Impact of Workplace Practices and Information Technology on Productivity", *Review of Economics and Statistics*, Vol. 83(3), pp. 434-445.

Blau, F.D., and L.M. Kahn (1996), "International Differences in Male Wage Inequality: Institutions versus Market Forces", *Journal of Political Economy*, Vol. 104, pp. 791–837.

Blau, F.D., and L.M. Kahn (2000), "Gender differences in pay", *Journal of Economic Perspectives*, Vol. 14(4), pp. 75–99.

Blinder, A.S. (1973), Wage discrimination: Reduced form and structural estimates, *Journal of Human Resources*, Vol. 8(4), 436–55.

Boone, J. (2000), Competition, *CEPR Discussion Paper* No. 2636.

Boone, J. (2008), "A New Way to Measure Competition", *Economic Journal*, forthcoming.

Conway, P., *et al.* (2006), "Regulation, Competition, and Productivity Convergence", *OECD Economics Department Working Paper* No. 509.

Griffith, R., R. Harrison and H. Simpson (2006), "Product market reform and innovation in the EU", *CEPR Discussion Paper* No. 5849.

Juhn, C., K.M. Murphy and P., Brooks (1991), "Accounting for the Slowdown in Black-White Wage Convergence", in M.H. Kosters (eds.), *Workers and Their Wages*, Washington DC: AEI

Oaxaca, R. (1973), "Male–female wage differentials in urban labor markets", *International Economic Review*, Vol. 14, pp. 693–709.

OECD (2004), *Employment Outlook*, OECD, Paris

OECD (2007), *Science, Technology and Industry Scoreboard*, OECD, Paris

Oliveira-Martins, J., and S. Scarpetta (2002), "Estimation of the cyclical behaviour of mark-ups: a technical note", *OECD Economic Studies* No. 34(1), pp. 173-188.

Roeger, W. (1995), "Can Imperfect Competition Explain the Difference Between Primal and Dual Productivity Measures?" Estimates for US Manufacturing, *Journal of Political Economy*, Vol. 103, pp. 316-330.

Weichselbaumer, D., and R. Winter-Ebmer (2005), "A meta-analysis of the international gender wage gap", *Journal of Economic Surveys*, Vol. 19(3), pp. 479-511.

Weichselbaumer, D., and R. Winter-Ebmer (2007), "The effect of competition and equal treatment laws on gender wage differentials", *Economic Policy*, Vol. 22, pp. 235-287.