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MARKUPS IN THE EURO AREA AND THE US OVER THE PERIOD 1981-2004

A COMPARISON OF 50 SECTORS

by Rebekka Christopoulou and Philip Vermeulen





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Abstract

This paper provides estimates of price-marginal cost ratios or markups for 50 sectors in 8 euro area countries and the US over the period 1981-2004. The estimates are obtained applying the methodology developed by Roeger (1995) on the EU KLEMS March 2007 database. Five stylized facts are derived. First, perfect competition can be rejected for almost all sectors in all countries; markup ratios are generally larger than 1. Second, average markups are heterogenous across countries. Third, markups are heterogeneous across sectors, with services having higher markups on average than manufacturing. Fourth, services sectors generally have higher markups in the euro area than the US, whereas the pattern is the reverse for manufacturing. Fifth, there is no evidence that there is a broad range change in markups from the eighties to the nineties.

Keywords: price, marginal cost, markup JEL Classification Number: D43,L11

Non technical Summary

This paper provides estimates of price-marginal costs ratios, or markup ratios, for 8 Euro area countries (Germany, France, Italy, Spain, Netherlands, Belgium, Austria, Finland) and the US. The markups are estimated for 50 sectors per country over the period 1981-2004 using the EUKLEMS database.

Markup ratios measure the degree of competition in a sector. A markup ratio bigger than 1 implies that prices are larger than marginal costs and are, therefore, evidence of market power in a sector. Thus, estimating the degree of competition in a sector or entire economy is important for regulators, competition authorities and policy-makers. Regulators would like to know whether current regulation is conducive to competition. Likewise, competition authorities might gauge the current competitive situation in a sector. Finally, as mark-up estimates of different sectors and different countries allows cross-sector and cross-country comparison of the degree of competition, they should help in identifying which sectors and/or countries would benefit most from changes in legislation or regulation that affect competition.

The estimated mark-up values in this paper are plausible. From the results, we extract five stylized facts. First, perfect competition is widely rejected across most industries and all countries; markup-ratios are generally larger than 1. Second, average markups are heterogenous across countries. Third, markups are heterogeneous across sectors, with services having higher markups on average than manufacturing. Fourth, services sectors have generally higher markups in the Euro area than the US, whereas the pattern is reversed for manufacturing. Fifth, there is no evidence that there is a broad range change in markups from the eighties to the nineties.

1 Introduction

This paper provides estimates of price-marginal costs ratios, or markup ratios, for 8 Euro area countries (Germany, France, Italy, Spain, Netherlands, Belgium, Austria, Finland) and the US. The markups are estimated for 50 sectors per country over the period 1981-2004 using the EUKLEMS database.

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The estimated size of the markup ratios in this paper are quite plausible. The average markup ratio in the Euro area is 1.37, in the US it is 1.32. The average, however, masks a great degree of dispersion across sectors. For instance, when only considering manufacturing and construction industries the average markup ratios are 1.18 for the Euro area and 1.28 for the US.

From the estimates a set of stylized facts are extracted. First, perfect competition is rejected for most sectors and all countries; markup-ratios are generally larger than 1. Second, average country markups are heterogeneous. Third, markup-ratios differ widely across sectors with some individual sectors having systematically higher markup ratios than other sectors across all countries. Markups are generally higher in services sectors than manufacturing industries. Fourth, services sectors generally have larger markups in the Euro area than in the US, whereas manufacturing sectors generally have lower markups in the Euro area than in the US. Fifth, there is no systematic change in markups from 1981-1992 to 1993-2004.

Overall, these stylized facts are not surprising: barriers to entry (either legal or technological ones), product differentiation, exposure to international competition, etc. influence the degree of competition, causing a different effect in different countries and industries. However, it is very difficult to identify what exactly influences the degree of competition for each single industry within each country.

The rest of the paper is structured as follows. Section two explains the methodology and discusses the related literature; section three presents the data; section four discusses the estimates and derives the stylized facts; and, finally, section five concludes.

2 Methodology and related literature

Roeger's method

The estimation methodology follows closely Roeger (1995). Roeger's method cleverly uses the two ways to measure the Solow residual: the one in terms of quantities (from profit maximization) and the one in terms of prices (from cost minimization).

The Solow residual as derived from profit maximization is traditionally defined as the difference between output growth and a weighted sum of input growths, where the weights are the input shares in revenue. Under constant returns to scale, perfect competition, and Hicks neutral technological change, this difference is identical to technological change (Solow, 1957).

Hall (1988) shows that under imperfect competition, the Solow residual as traditionally defined does not any longer measure technological change but, instead, it measures the weighted sum of technological change and the growth rate of the output-capital ratio. The weights are a function of the markup of price over marginal cost. Thus:

$$\Delta Q_t - \alpha_{Nt} \Delta N_t - \alpha_{Mt} \Delta M_t - (1 - \alpha_{Nt} - \alpha_{Mt}) \Delta K_t$$
$$= (1 - \frac{1}{\mu_t}) (\Delta Q_t - \Delta K_t) + (\frac{1}{\mu_t}) \theta_t$$
(1)

where ΔQ_t is output growth, ΔN_t is labour input growth, ΔK_t is capital input growth, ΔM_t is intermediate input growth, μ_t denotes the price-cost markup ratio, and $\alpha_{Jt}(J = N, K, M)$ is the input shares in revenue. The lefthandside is the definition of the traditional Solow residual $(SR_t \equiv \Delta Q_t -$ $\alpha_{Nt}\Delta N_t - \alpha_{Mt}\Delta M_t - (1 - \alpha_{Nt} - \alpha_{Mt})\Delta K_t)$. In case the markup ratio is equal to 1, the Solow residual becomes equal to technological change θ_t .¹

Roeger develops the dual equation of the above derived from the pricebased Solow residual equation, i.e. based on the dual problem of cost minimization, constant returns to scale and Hicks neutral technological change. This dual equation, in prices rather than quantities, is:

$$\Delta p_t - \alpha_{Nt} \Delta w_t - \alpha_{Mt} \Delta m_t - (1 - \alpha_{Nt} - \alpha_{Mt}) \Delta r_t$$

= $(1 - \frac{1}{\mu_t})(\Delta p_t - \Delta r_t) - (\frac{1}{\mu_t})\theta_t$ (2)

with Δp_t denoting the output price change, Δw_t the wage change, Δm_t the intermediate input price change, and Δr_t the user cost change.²

The lefthandside is now defined to be the (negative of) price-based Solow residual $(-SRP_t \equiv \Delta p_t - \alpha_{Nt} \Delta w_t - \alpha_{Mt} \Delta m_t - (1 - \alpha_{Nt} - \alpha_{Mt}) \Delta r_t)$. Again, in case the markup ratio is equal to 1, the price-based Solow residual becomes equal to technological growth θ_t .

Roeger observed that by subtracting the traditional Solow residual SR_t from the price based Solow residual SRP_t technological growth θ_t drops out of the equation. Thus, adding equations (1) and (2) and rearranging, one gets an equation solely in terms of nominal observable variables:

$$(\Delta p_t + \Delta Q_t) - \alpha_{Nt} (\Delta w_t + \Delta N_t) - \alpha_{Mt} (\Delta m_t + \Delta M_t) -(1 - \alpha_{Nt} - \alpha_{Mt}) (\Delta r_t + \Delta K_t) = (1 - \frac{1}{\mu_t}) [(\Delta p_t + \Delta Q_t) - (\Delta r_t + \Delta K_t)]$$
(3)

with nominal output growth denoted by $\Delta p_t + \Delta Q_t$ (note that $\Delta(p_t Q_t) = \Delta p_t + \Delta Q_t$; $\Delta(w_t N_t) = \Delta w_t + \Delta N_t$; etc.), nominal wage bill growth denoted by

¹A derivation of this equation can be found in the Appendix. We use the following conventional notation for the rate of change over time: $\Delta X_t = \left(\frac{\partial X_t}{\partial t}/X_t\right)$, so that the terms in this equation can be reshuffled to be equal to equation (9) in Hall (1998) or equation (1) in Roeger (1995). Note that Hall (1988) and Roeger (1995) use a value added concept of output so that only capital and labour enter the equation. We use a gross output concept so that our equation also includes intermediate inputs.

²We use capital letters for quantities and lowercase for prices.

 $\Delta w_t + \Delta N_t$, growth in intermediate input costs denoted by $\Delta m_t + \Delta M_t$, and growth in capital costs denoted by $\Delta r_t + \Delta K_t$. In other words, subtracting the price based Solow residual from the quantity based Solow residual one gets a *nominal* Solow residual. Under the above assumptions of constant returns to scale, imperfect competition and Hicks neutral technological change, this nominal Solow residual is a function of the markup and the difference between nominal output growth and nominal capital cost growth.

For estimation purposes μ_t is assumed constant over time and an error ε_t is added to the equation. This yields the simple regression:

$$SR_t - SRP_t = \beta [(\Delta p_t + \Delta Q_t) - (\Delta r_t + \Delta K_t)] + \varepsilon_t$$
(4)

or

$$y_t = \beta x_t + \varepsilon_t \tag{5}$$

with $y_t = (\Delta p_t + \Delta Q_t) - \alpha_{Nt}(\Delta w_t + \Delta N_t) - \alpha_{Mt}(\Delta m_t + \Delta M_t) - (1 - \alpha_{Nt} - \alpha_{Mt})(\Delta r_t + \Delta K_t), x_t = (\Delta p_t + \Delta Q_t) - (\Delta r_t + \Delta K_t) \text{ and } \beta = (1 - \frac{1}{\mu}).$ A consistent estimate of β can now be obtained by a simple OLS regression of y_t on x_t . An estimate of the markup is then simply $\frac{1}{1-\beta}$.

Hall's method

It is useful to recall the alternative method to estimate markups that was developed earlier by Hall (1988). The method by Hall to estimate markups is based on equation (1) rather than equation (3). Hall rewrites equation (1) as:

$$(\Delta Q_t - \Delta K_t) - \alpha_{Nt} (\Delta N_t - \Delta K_t) - \alpha_{Mt} (\Delta M_t - \Delta K_t) = (\mu_t - 1)\alpha_{Nt} (\Delta N_t - \Delta K_t) + (\mu_t - 1)\alpha_{Mt} (\Delta M_t - \Delta K_t) + \theta_t$$
(6)

In his seminal paper he does not use data on material inputs and, hence, estimates a version of this equation using a value added based concept of the output rather than gross output, which leads to the following equation:

$$(\Delta Q_t - \Delta K_t) - \alpha_{Nt} (\Delta N_t - \Delta K_t) = (\mu_t - 1)\alpha_{Nt} (\Delta N_t - \Delta K_t) + \theta_t \quad (7)$$

In contrast to the equation by Roeger (1995) this equation can only be estimated using instrumental variables, as technological growth θ_t will generally be correlated with the growth in the labour-capital ratio $(\Delta N_t - \Delta K_t)$. Hall applies the instrumental variables (IV) method on this equation to obtain estimates of μ_t , using as instruments the petroleum price, the rate of growth of military purchases, and a dummy variable indicating whether the president is a Democrat or a Republican. However, this IV estimation generally leads to very large, sometimes implausible, estimates of the markup ratios. This is related to two problems. The first problem is to find good instruments; it is difficult to find instruments that are correlated with the labour-capital ratio but uncorrelated to technology. The second problem is specifically related to the use of value added rather than gross output. Waldmann (1991) argues that the data Hall uses on real value added can not be used reliably to estimate this equation. His argument is that for some sectors, especially for services, there is measurement error in real value added that is correlated with one of the instruments (price of petroleum). This measurement error is induced by the use of a direct-deflation method of constructing real value added; that is, by deflating nominal value added by the output price index. Clearly, the method of Hall itself is fully valid. The problem is in finding good instruments that are correlated with the labour-capital ratio but uncorrelated to technology and in using value added when measured with considerable error. Note that, for the same reasons, Roeger too refrains from estimating his equation for services sectors, since he also uses value added rather than nominal output.

Measurement error

Roeger develops further where the error term ε_t in equation (4) comes from. He rightfully argues that if all variables adjust instantaneously and are measured without error, there should be no error term in equation (4) and β (and hence the markup) could be calculated (year by year) rather than estimated. He argues in favour of a measurement error in labour input. As this would imply measurement error in y_t but not in x_t this would just effect efficiency but not consistency. However, it remains the case, as in any econometric exercise, that any measurement error in x_t would lead to biased estimates. In our case, bias could arise from any measurement error in nominal output growth or capital cost growth. Regarding nominal output growth, we think that significant measurement error is unlikely. For capital

Working Paper Series No 856 January 2008 costs, this possibility is higher. In any case, it is useful to know the direction of the bias these two types of measurement errors would induce. We use subscript d to indicate data (no subscript indicates true variable).

So imagine capital costs and nominal output are measured with error, i.e. $(\Delta r_t + \Delta K_t)^d = \Delta r_t + \Delta K_t - v_t$ and $(\Delta p_t + \Delta Q_t)^d = \Delta p_t + \Delta Q_t - u_t$ with $v_t \operatorname{iid}(0, \sigma_v^2)$ and $u_t \operatorname{iid}(0, \sigma_u^2)$. (And imagine for simplicity that α_{Nt} and α_{Mt} are constant over time, so can be written without subscript t) Then we have that:

$$y_t^d = (\Delta p_t + \Delta Q_t)^d - \alpha_N (\Delta w_t + \Delta N_t) - \alpha_M (\Delta m_t + \Delta M_t) - (1 - \alpha_N - \alpha_M) (\Delta r_t + \Delta K_t)^d$$
(8)

and

$$x_t^d = (\Delta p_t + \Delta Q_t)^d - (\Delta r_t + \Delta K_t)^d \tag{9}$$

The true regression becomes:

$$y_t^d = \beta x_t^d + (\beta - 1)u_t + [-\beta + (1 - \alpha_N - \alpha_M)]v_t + \varepsilon_t$$
(10)

where the error $(\beta - 1)u_t + [-\beta + (1 - \alpha_N - \alpha_M)]v_t + \varepsilon_t$ is correlated with the regressor x_t^d . It is now straightforward to show that b, the OLS estimator of β , would be biased.

$$b = \frac{\frac{1}{n} \sum x_t^d y_t^d}{\frac{1}{n} \sum x_t^d x_t^d} = \frac{\frac{1}{n} \sum (x_t + v_t - u_t) (\beta x_t - u_t + (1 - \alpha_N - \alpha_M)] v_t)}{\frac{1}{n} \sum (x_t + v_t)^2}$$
(11)

So that

$$p \lim b = \beta + \frac{\alpha_K \frac{\sigma_v^2}{Q_x}}{1 + \frac{\sigma_v^2}{Q_x}} + \frac{\frac{\sigma_u^2}{Q_x}}{1 + \frac{\sigma_v^2}{Q_x}}$$
(12)

with $Q_x = p \lim \frac{1}{n} \sum x_t^2$.

So measurement error in capital costs and nominal output cause b unambiguously to be an upward biased estimator of β and hence bias upward the estimate of the markup μ . Note also that the upward bias is more severe the higher the capital share is.

Returns to scale, sunk costs and other sources of bias

The constant returns to scale assumption is crucial to identifying the markup ratio μ . One can show that under returns to scale λ , the coefficient $(1 - \frac{1}{\mu_t})$ becomes $(1 - \frac{\lambda}{\mu_t})$.³Thus, in this case, one cannot identify returns to scale separately from the markup: the estimates of $\frac{1}{1-\beta}$ provide a measure of $\frac{\mu}{\lambda}$ and not of μ . When there are increasing returns to scale, markups would be wrongly interpreted to be smaller than they are, while in the case of decreasing returns to scale the opposite would happen.

Regarding sunk costs, these lead to measurement error in capital cost and, therefore, their influence on the estimated mark-ups should materialize in the same way as any other measurement error in capital cost, in the way described above.

Additional issues that might lead to biases in the estimated markups, such as labour hoarding, overhead labour etc. are discussed in detail by Roeger (1995) and Hall (1988).

Constancy of the markup-ratio

Equation (4) leads to consistent estimates of the markup if the markup is constant over the time period of estimation. Hylleberg and Jorgensen (1998) argue that it is unlikely that the markup remains constant over longer time periods, but that it rather has the form of some constant γ plus some iid noise. For this case they show that the error term becomes heteroskedastic and autocorrelated and correlated with the regressor. A first best in this case would be to use instrumental variables. They argue that it is very difficult to obtain reliable instruments. They instead argue for a constant term in the regression (which corrects for some of the endogeneity under certain conditions (see for detail Hylleberg and Jorgensen (1998)). We do two things to allow for non-constancy. We estimate equation (4) over two subperiods and test for change in the markups. We also test for robustness by regressing (4) with a constant term included and using heteroskedasticity and autocorrelation consistent (HAC) standard errors.

³See Oliveira Martins et al, 1996.

Related literature

The method by Roeger (1995) has been used in a number of related studies to estimate industry markups. Being the first, Roeger (1995) uses it to estimate the markups for the manufacturing sector of the US economy on the two digit level for the period 1953-84. Oliveira Martins et al. (1996) uses it to estimate markups in the manufacturing industries for 14 OECD countries over the period 1970-1992 using the STAN database. In the text below we compare our estimates with theirs. Oliveira Martins and Scarpetta (1999) estimate markups in manufacturing industries in the US, Japan, Germany, France and the UK. Recently, a small literature has developed that uses the methodology on firm level data. Konings et al. (1995) use firm level data to estimate markups in manufacturing sectors in Bulgaria and Rumania for the period 1994-1998. Konings and Vandenbussche (2005) use a panel of 4000 European firms and test whether markups change in the face of antidumping trade measures. Görg and Warzynski (2006) estimate markups in UK manufacturing using a panel of firms over the period 1987-1997.

3 Data

The data used in this paper is from the EU KLEMS data base (March 2007 Release). The database construction and methodology is described in Timmer et al. (2007). The database was developed to create measures of economic growth, productivity, employment creation, capital formation and technological change at the sector level for all European Union members and the US from 1970 onwards. The paper uses the data from 1981 to 2004. It contains, with a few exceptions, the necessary input and output data at the detailed sector level (Nace 2 digit, Rev 1.1). For those few sectors in the few countries that do not have data available over the whole period, the estimations are done on shorter periods. The Appendix provides detail. The specific variables from the EU KLEMS data base that are used in this paper are the following: gross output (at basic current prices), compensation of employees, intermediate inputs at current purchasers prices, and capital services (volume) indices. The database does not contain a price series for capital. Therefore, to construct r_t , a user cost of capital is calculated using the Hall and Jorgensen(1967) method,

$$r_t \equiv P_I[(i - \pi_e + \delta)] \tag{13}$$

with P_I the investment deflator, $i - \pi_e$ the real interest rate, and δ the depreciation rate. For P_I we use the fixed capital deflator for the total economy and for $i - \pi_e$ the real interest rate, both from the AMECO database. The depreciation rate is fixed at 8% throughout.

4 Results

4.1 Markups over the period 1981-2004

Equation (5) was estimated for 50 sectors in each of the 8 Euro area countries and the USA for the period 1981-2004. Unfortunately, not enough data was available for the remaining Euro area members (Portugal, Luxembourg, Greece, Ireland). However, the included 8 countries together have a weight of over 90% of Euro area output.

The estimated coefficient β is an estimate of $(1 - \frac{1}{\mu})$. So, an estimate of the markup μ is equal to $1/(1 - \beta)$. Table A1 in the Appendix provides detailed markup estimates per sector and country. The corresponding standard errors (reported in Table A2 in the Appendix) are generally small. Hylleberg and Jorgensen (1998) argue that if the markup is not truly constant over the period of estimation one should add a constant term to the regression and correct the standard errors for heteroskedasticity and autocorrelation. Roeger also uses heteroskedasticity robust (White) standard errors. As a robustness check we report the markup estimates when a constant term is added to the regression and the standard errors are corrected for heteroskedasticity and autocorrelation in Tables A6 and A7. This has very little influence on the results. The average difference between the markups estimated by OLS and OLS with a constant term in the regression is 0.01. The average difference between the OLS and the robust standard errors is 0.006.

A certain amount of caution is needed in interpreting the estimated markups. As indicated above, the first reason for caution is possible deviations from the assumptions of profit maximization, constant returns to scale, sunk costs, etc., that would lead to biases in the estimates. A second reason is measurement error which as shown above would lead to upward biased estimates. A further reason is that the output in certain sectors (nace 75, 80, 85, 90, 91) is produced to a significant extent by non-market producers (i.e. government or other non-profit sector firms). Therefore, estimates of the markup for those sectors might not be always meaningful. This is compounded with the fact that the fraction of non-market producers in these sectors will differ a lot across countries, which makes cross-country comparison difficult. Furthermore, in some of these sectors, due to the absence of true markets, output series might be constructed using inputs, at least partially (e.g. in the Public administration & Defence, Compulsory Social Security sector and Health and social Work sector). Given these issues, we do not take into account non-market services when calculating aggregate country mark-ups. We do, however, provide the markup estimates of the individual non-market services sectors in the tables in the appendix.

A special note should be made for Real Estate Activities (sector 70). This sector appears as an outlier with a markup ratio of 4.33 in the Euro area and 3.77 in the US. We think that this is possibly due to statistical specificities leading to large measurement errors. First, the sector does not only include the services produced by rented dwellings, but also those provided by owner-occupied dwellings. Owner-occupied rent is an imputed output, also likely measured with measurement error leading to upward bias of the markup. Since the percentage of owner-occupied dwellings in different countries varies, this also leads to difficulties in comparing countries. Further, measurement problems in the growth rate of capital costs are likely more important for this sector, for the reason that it has one of the lowest labour and material input share, so that even small errors in capital costs would lead to large biases (as shown in equation 12).⁴ Therefore, sector 70 is also excluded from the calculations of aggregate country mark-ups along with non-market services.

Stylized Fact 1: Perfect competition is widely rejected

A first stylized fact that can be derived is that perfect competition is widely rejected. Across all sectors in all countries markup-ratios are generally statistically significantly larger than 1. There are only a few sectors in which perfect competition cannot be rejected. Table A1 reports the estimated markups that are statistically significantly larger than one in bold.

⁴For most countries, average $(1 - \alpha_{Nt} - \alpha_{Mt})$ in sector 70 is above 0.60.

Stylized Fact 2: Average markups are heterogenous across countries

Country average markups are constructed from the sectoral estimates using sectoral gross output in the year 2000 as sector weights. The average weighted markups of each country are reported in Table 1. A second stylized fact that can be established from the evidence of this table is that markup ratios differ across countries. France has the lowest average weighted markup at 1.21, whereas Italy has the highest at 1.61. Note, though, that Italy is a bit of an outlier; without Italy the difference between the country with the lowest average weighted markup (i.e. France) and the highest average weighted markup (i.e. Germany at 1.33) would only be 0.12. The average markup in the Euro area is 1.37, while it is 1.32 in the US.

	Table 1. Weighted a	average markup, 1981	-2004
			All
			(Manufacturing,
	Manufacturing	Market	Construction &
Country	& Construction	Services	Market Services)
Germany	$1.16 (0.01)^*$	$1.54 (0.03)^*$	$1.33 (0.01)^*$
France	$1.15 (0.01)^*$	$1.26 (0.02)^*$	$1.21 (0.01)^*$
Italy	$1.23 (0.01)^*$	$1.87 (0.02)^*$	$1.61 (0.01)^*$
Spain	$1.18 (0.00)^*$	$1.37 (0.01)^*$	$1.26 (0.01)^*$
Netherlands	$1.13 (0.01)^*$	$1.31 (0.02)^*$	$1.22 (0.01)^*$
Belgium	$1.14 (0.00)^*$	$1.29 (0.01)^*$	$1.22 (0.01)^*$
Austria	$1.20 (0.02)^*$	$1.45 (0.03)^*$	$1.31 (0.02)^*$
Finland	$1.22 (0.01)^*$	$1.39 (0.02)^*$	$1.28 (0.01)^*$
Euro Area	$1.18 (0.01)^*$	$1.56 (0.01)^*$	$1.37 (0.01)^*$
USA	$1.28 (0.02)^*$	$1.36 (0.03)^*$	$1.32 (0.02)^*$

Notes: The Euro area group constitutes the 8 EU countries in the analysis. Weights are gross output levels by sector, 2000. Numbers in parentheses are standard errors. * indicates statistical significance at the 5% level. Standard errors per sector are calculated as $s.e(1/1-\beta)=s.e(\beta)/(1-\beta)^2$ using the delta method. For *i* indicating a sector and w_i the respective weight, standard errors corresponding to the weighted average markups are $s.e(\Sigma w_i(1/1-\beta_i)/\Sigma w_i)=\sqrt{\Sigma w_i^2 s.e(1/1-\beta_i)^2/(\Sigma w_i)^2}$. The table excludes real estate activities (sector 70), and non-market services (sectors 75, 80, 85, 90, 91 & 92).

ECB Working Paper Series No 856 January 2008 Stylized Fact 3: Markups are heterogenous across sectors, with services having on average higher markups than manufacturing

Table A1 in the appendix further illustrates that markups differ widely across industries with some industries systematically having higher markup ratios than other industries across all countries. Specifically, industries where monopolies or quasi monopolies or strong network effects play a role seem to have higher markups. For example, the average Euro area markup for Post and Telecommunications is 1.48. This markup, estimated over the period 1981-2004, will not reflect very recent deregulation in that industry. In the US, where telecommunications have been deregulated earlier, the respective markup remains high, lower though than in the Euro area at 1.38. In manufacturing, the two industries with the highest markup are the Tobacco industry and the Electricity and Gas industry, and this in both the Euro area and the US. Clearly, the (quasi) monopolies in the overall energy sector has drawn a lot of (warranted) attention of the regulators.

The highest markups in the Euro area (all higher than 1.60) are found in Water Transport; Air transport; Real estate; Renting; Computer and related activities; R&D; Activities of Membership Organizations; and Other Service Activities. The lowest markups in the Euro area (lower than 1.15) are found in Food and Beverages; Coke, Refined Petroleum & Nuclear Fuel; Machinery, nec.; Motor Vehicles, Trailers & Semi-Trailers; Other Transport Equipment; and Education.

Interestingly, markup ratios are on average higher in services industries than manufacturing industries. This is true for all individual countries. This is not surprising as manufacturing is likely to be exposed to more (international) competition than services. The average markup in manufacturing and construction in the Euro area is 1.18, whereas it is 1.56 in market services. For the US the markups are 1.28 in manufacturing versus 1.36 in market services. The difference between manufacturing and market services sectors is larger in the Euro area (0.38) than the US (0.08). This is further illustrated in Figure A1 in the Appendix. In Figure A1, sectors in the Euro area and the US are sorted by magnitude of the markup, from smallest (left) to largest (right). Evidently, many more services sectors end up at the right in the Euro area than in the US. The dichotomy manufacturing versus services is therefore larger in the Euro area than in the US.

Averages, of course, hide differences at the country-sector level. An interesting example is the Retail Trade sector. Observers traditionally describe the US retail trade to be much more competitive than the average Euro area, with the exception of Germany where the retail trade is traditionally seen to be very competitive (Other evidence of that is that the US giant Walmart had to withdraw from the German market after many years of losses. It had trouble competing with the German deep discounters as Aldi, Penny and Lidl (Knorr and Arndt, 2003)). This story is clearly born out in the data as well. The markup ratio in retail for the US is 1.19, where it is 1.42 in the Euro area. The respective German markup is below the US one at 1.12. The highest markup is found in Italy, a country with traditionally many small local shops, at 1.95.

Stylized Fact 4: Services sectors generally have larger markups in the Euro area than in the US, whereas manufacturing sectors generally have lower markups in the Euro area than in the US.

Comparing the Euro area with the US, sector by sector, reveals that Euro area services generally have higher markups than US services, whereas the pattern is reversed for the manufacturing sector. This is clearly demonstrated in Figure A2, where markups of individual services and manufacturing industries in the Euro area (vertical axis) are plotted against those of the US (horizontal axis). As is evident from the figure, service industries are generally above the 45 degree line, indicating higher markups in the Euro area than in the US. Manufacturing industries are generally below the 45 degree line, indicating lower markups in the Euro area than the US. Notably, the difference in the manufacturing sectors between the euro are and the US is less marked than in the services sectors. Services sectors that have especially higher markups in the Euro area than in the US are: Other Water Transport; Other Air Transport; Real Estate Activities; R&D; Sewage & Refusal Disposal, Sanitation and Similar Activities; and Other Service Activities.

4.2 Markups over the periods 1981-1992 and 1993-

2004

Overall the estimated magnitudes of the markups estimated over the entire period 1981-2004 are quite plausible. For the manufacturing sector there exist comparable estimates for earlier periods based on the STAN database by the OECD. Oliveira Martins et al. (1996) estimate markups for 36 manufacturing industries in 14 OECD countries over the period 1970-1992 and also provide some estimates for the two periods 1970-1979 and 1980-1992, using the same estimation methodology. The last period is roughly a subperiod of the period considered here 1981-2004 (except for the starting year). To make a direct comparison of the average markup in the eighties, i.e. over the period 1980-1992 estimated by Oliveira Martins et al. (1996) with our estimates of the period 1981-1992, we split the sample in two periods (1981-1992 and 1993-2004). As both the STAN database by the OECD and the EUKLEMS database are ultimately derived from the same national accounts data, one would expect similar estimates for the eighties. And indeed this is the case. Our estimated markups for the eighties for all Euro area countries are rather close to the ones by Oliveira Martins et al (1996). The average absolute difference is 0.03.

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Country	$1970 - 1979^*$	$1980 - \overline{1992^*}$	$1981 - \overline{1992^{**}}$	1993-2004**
Germany	1.20	1.21	1.18	1.16
France	n.a.	1.16	1.17	1.15
Italy	n.a.	1.18	1.20	1.27
Spain	n.a.	n.a.	1.18	1.17
Netherlands	1.24	1.21	1.13	1.13
Belgium	1.13	1.18	1.16	1.13
Austria	1.17	1.20	1.13	1.35
Finland	1.13	1.23	1.24	1.22
Euro area	n.a.	n.a.	1.20	1.20
USA	1.18	1.14	1.21	1.26

Table 2. Weighted average markup in manufacturing, 1970-2004

Note: * Numbers from Oliveira et al. (1996), derived from Figure 1(a); ** our estimates. The Euro area group constitutes the 8 EU countries in the analysis. Weights are gross output levels, 2000. Sector 35 (Other Transport Equipment) is excluded from the calculations for reasons of comparison with Oliveira et al. (1996), who do not provide estimates for this sector for the US.

Stylized Fact 5: There is no systematic change in markups from 1981-1992 to 1993-2004

Comparing our estimates over the period 1981-1992 with 1993-2004, there do not seem to exist large movements in markups, with the exception of Austria where markups have risen from 1.14 to 1.30. Folk wisdom has it that the competitive forces of globalization have led to a widescale increase in competition in many sectors across the globe. If this is true, increased competition should show up as a decrease in markups over the period. Again, averages can mask differences at the sectoral level. Therefore, we perform a test of significant difference between the markups of the two periods 1981-1992 and 1993-2004 on each pair of sector-country estimates. The estimated markups for all sectors for both sub-periods are provided in the appendix in Tables A3 and A4, while the difference of the markups that are significantly lower or higher in the second period is provided in Tabled A5. Table 3 below offers a summary of these results. It is clear that there are no industries that consistently see a change in markup across the countries. If globalization works to change mark-ups this is likely country and sector-specific.

In the majority of sectors, markups are not significantly different in the two sub-periods. Also, there is no clear direction of markup changes either up or down in the Euro area: 45 sectors saw significantly lower markups and 49 significantly higher markups in the second period.

	markups b	etween 1981-19	92 and 1993-20	104.	
	Significantly	Significantly		Dropped	
	$\operatorname{smaller}$	higher		(missing $)$	
Country	in 93-04	in 93-04	Insignificant	data)	Total
Germany	2	1	39	8	50
France	9	9	32	0	50
. Italy	5	7	15	23	50
Spain	3	5	41	1	50
Netherlands	3	3	44	0	50
Belgium	14	2	34	0	50
Austria	4	12	34	0	50
Finland	5	10	35	0	50
Euro area	45	49	274	32	400
\mathbf{US}	3	8	36	3	50

Table 3. No. of industries by country with statistically significantly different markups between 1981-1992 and 1993-2004.

5 Conclusion

The estimates of markups in the paper support the claim that prices generally exceed marginal cost in the Euro area and the US. Markups are generally higher in services than manufacturing and some countries, notably Italy, show generally higher markups. They also reveal that markups are on average not that different in the Euro area than in the US. However, the average masks large differences that occur at the sector level. While in manufacturing the Euro area has the lower markups, in services the US has the lower markups. Moreover, certain services industries in the Euro area have much higher markups than in the US.

What remains an open question is what determines relative magnitudes of markups across different sectors and countries; in other words, what are the exact determinants of these markups. It is likely that very specific reasons at the sector-country level are at work. One possible factor, for example, could be differences in barriers to entry, either legal or technological. Are there barriers to entry? And if there are, what form do they take? Are they technological or legal? Analyzing differences across countries might also be helpful in finding the ultimate causes of the differences in sector-country markups. A difficulty is finding good measures at the sector-country level. The authors of this paper will take this up in future research.

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Appendix A: Data availability

The paper uses the data from 1981 to 2004 available in EU KLEMS database (March 2007 release). It contains, with a few exceptions (for the purposes of this paper) the necessary input and output data at the detailed industry level (Nace 2 digit Rev 1.1). For those few industries in countries that do not have data available over the whole period, the estimations are done on shorter periods. Out of a total of 450 country-industry pairs, 396 are estimated over the period 1981-2004; 18 are estimated over the period 1988-2004; 1 over the period 1991-2004; 8 over the period 1992-2004; 23 over the period 1993-2004; 1 over the period 1996-2004; and 3 are not estimated. For Germany, industries 27, 28, 36, 37, 60, 61, 62, 63 have data available for the period 1992-2004 only. For Italy, necessary data is available only for 23 industries and from 1993 onwards. So, for those industries the period of estimation is 1993-2004. These industries are 15, 16, 17, 18, 21, 22, 27, 28, 30, 31, 32, 33, 34, 35, 60, 65, 66, 67, 74, 90, 91, 92, 93. For Spain, industry 37 has data availability only for the period 1996-2004. For the Netherlands, data is available over the period 1988-2004 for the following industries: 17, 18, 19, 30, 31, 32, 33, 34, 35, 36, 37, 71, 72, 73, 74, 90, 91, 93. For Finland, industry 37 is available only over the period 1991-2003. Finally, for the US, no sufficient data is available and so no estimate is obtained for the industries 37,41 and 67.

Appendix B: Derivation of equations 1 & 2

The derivation of equations 1 and 2 for a production function with capital and labour can be found respectively in Hall (1988) and Roeger (1995). For convenience we give a sketch of the proof for our equations 1 and 2 including intermediate inputs.

Derivation of equation 1

Consider the production function under the assumption of Hicks neutral technological change:

$$Q_t = A_t f(N_t, K_t, M_t)$$

Differentiate the production function totally with respect to time (using notation $\Delta X = \frac{\partial X}{\partial t}/X_t$) and divide by Q_t . It follows that:



$$\Delta Q_t = \Delta A_t + A_t \frac{\partial f}{\partial N_t} \frac{N_t}{Q_t} \Delta N_t + A_t \frac{\partial f}{\partial K_t} \frac{K_t}{Q_t} \Delta K_t + A_t \frac{\partial f}{\partial M_t} \frac{M_t}{Q_t} \Delta M_t$$

Assume profit maximization under imperfect competition (and price taking on input markets).

 $\max P(Q_t)A_t f(N_t, K_t, M_t) - w_t N_t - r_t K_t - m_t M_t$

The FOCs of this problem can be written as:

$$\frac{\partial Q_t}{\partial N_t} \frac{N_t}{Q_t} = \left[\frac{\partial P_t}{\partial Q_t} \cdot \frac{Q_t}{P_t} + 1\right]^{-1} \alpha_{Nt}$$
$$\frac{\partial Q_t}{\partial K_t} \frac{K_t}{Q_t} = \left[\frac{\partial P_t}{\partial Q_t} \cdot \frac{Q_t}{P_t} + 1\right]^{-1} \alpha_{Kt}$$
$$\frac{\partial Q_t}{\partial M_t} \frac{M_t}{Q_t} = \left[\frac{\partial P_t}{\partial Q_t} \cdot \frac{Q_t}{P_t} + 1\right]^{-1} \alpha_{Mt}$$

Where $\alpha_{Jt}(J = N, K, M)$ are the input shares in revenue. Note that $A_t \frac{\partial f}{\partial N_t} \frac{N_t}{Q_t} = \frac{\partial Q_t}{\partial N_t} \frac{N_t}{Q_t}$; and so on. Plug these FOCs into the differentiated production function above. One gets:

$$\Delta Q_t = \left[\frac{\partial P_t}{\partial Q_t} \cdot \frac{Q_t}{P_t} + 1\right]^{-1} (\alpha_{Nt} \Delta N_t + \alpha_{Mt} \Delta M_t + \alpha_{Kt} \Delta K_t) + \Delta A_t$$

From the FOCs we have that $\left[\frac{\partial P_t}{\partial Q_t} \cdot \frac{Q_t}{P_t} + 1\right]^{-1}$ is price over marginal cost:

$$[\frac{\partial P_t}{\partial Q_t} \cdot \frac{Q_t}{P_t} + 1]^{-1} = \frac{P_t}{w_t \frac{\partial N_t}{\partial Q_t}} = \frac{P_t}{r_t \frac{\partial K_t}{\partial Q_t}} = \frac{P_t}{m_t \frac{\partial M_t}{\partial Q_t}} = \mu_t$$

One gets:

$$\Delta Q_t = \mu_t (\alpha_{Nt} \Delta N_t + \alpha_{Mt} \Delta M_t + \alpha_{Kt} \Delta K_t)$$

Assume now CRS, this implies that by homogeneity of degree one:

$$1 = \frac{\partial Q_t}{\partial N_t} \frac{N_t}{Q_t} + \frac{\partial Q_t}{\partial K_t} \frac{K_t}{Q_t} + \frac{\partial Q_t}{\partial M_t} \frac{M_t}{Q_t}$$

Note that together with the assumptions above (i.e. using the FOCs above and summing them), this implies that:

$$1 = \mu \alpha_N + \mu \alpha_K + \mu \alpha_M$$

Plugging that in $\Delta Q_t = \mu_t (\alpha_{Nt} \Delta N_t + \alpha_{Mt} \Delta M_t + \alpha_{Kt} \Delta K_t)$ one gets equation (1) in the text.

Derivation of equation 2

Start with a cost function for a CRS production technology in N_t, K_t, M_t .

$$G(w_t, r_t, m_t)\frac{Qt}{A_t} = C(w_t, r_t, m_t, Q_t, A_t)$$

Marginal cost, MC_t , is defined as $\frac{\partial C}{\partial Q_t}$.

$$\frac{G(w_t, r_t, m_t)}{A_t} = \frac{\partial C(w_t, r_t, m_t, Q_t, A_t)}{\partial Q_t} = MC_t$$

Take logs of the above equation and differentiate totally w.r.t. time:

$$\frac{\frac{\partial G}{\partial w_t}w_t\Delta w_t}{G_t} + \frac{\frac{\partial G}{\partial r_t}r_t\Delta r_t}{G_t} + \frac{\frac{\partial G}{\partial m_t}m_t\Delta m_t}{G_t} - \Delta A_t = \Delta M C_t$$

Now use Shepard's lemma for cost functions: i.e $\frac{\partial C(w_t, r_t, m_t, Q_t, A_t)}{\partial w_t} = N_t$ and so on, so that:

$$\frac{\partial G(w_t, r_t, m_t)}{\partial w_t} = \frac{N_t A_t}{Q_t}, \ \frac{\partial G(w_t, r_t, m_t)}{\partial r_t} = \frac{K_t A_t}{Q_t}, \ \frac{\partial G(w_t, r_t, m_t)}{\partial m_t} = \frac{M_t A_t}{Q_t}$$

Plugging this in the above we get:

$$\frac{w_t N_t A_t \Delta w_t}{Q_t G_t} + \frac{r_t K_t A_t \Delta r_t}{Q_t G_t} + \frac{m_t M_t A_t \Delta m_t}{Q_t G_t} - \Delta A_t = \Delta M C_t$$

Using the cost function $C_t = G_t \frac{Q_t}{A_t}$ and $C_t = w_t N_t + r_t K_t + w_t M_t$ one can write this as:

$$\frac{w_t N_t \Delta w_t}{C_t} + (1 - \frac{w_t N_t}{C_t} - \frac{m_t M_t}{C_t}) \Delta r_t + \frac{m_t M_t \Delta m_t}{C_t} - \Delta A_t = \Delta M C_t$$

From the FOC of the profit maximization problem:

$$\max_{Q} P(Q_t)Q_t - C(w_t, r_t, m_t, Q_t, A_t)$$

where C is the cost function. It follows that:

$$\frac{1}{\mu_t} P_t = \frac{\partial C}{\partial Q_t}$$

with μ_t defined as above. Note that the rate of change of prices is identical to the rate of change of marginal cost if one assumes that μ_t is constant over time; that is if $\frac{\partial P}{\partial Q} \frac{Q}{P}$ is not a function of t.

$$\Delta p_t = \Delta M C_t$$

By cost minimization and CRS we have that:

$$\mu_t C_t = p_t Q_t$$

So now we take again the above equation and plug in $\mu_t C_t = p_t Q_t$ and $\Delta p_t = \Delta M C_t$ and use $\alpha_{Jt}(J = N, K, M)$ the input shares in revenue. One then obtains equation (2) in the text.

$$\Delta p_t - \alpha_{Nt} \Delta w_t - \alpha_{Mt} \Delta m_t - (1 - \alpha_{Nt} - \alpha_{Mt}) \Delta r_t$$
$$= (1 - \frac{1}{\mu_t})(\Delta p_t - \Delta r_t) - (\frac{1}{\mu_t})\theta_t$$

Appendix C: Tables and graphs

Code	Sector	Germany	France	Italy	Spain
15	Food & Beverages	1.11	1.13	1.18	1.11
16	Tobacco	1.32	1.33	1.33	1.23
17	Textiles	1.15	1.09	1.20	1.17
18	Wearing Apparel, Dressing & Dying of Fur	1.04	1.12	1.18	1.34
19	Leather, leather and footwear	1.11	1.11	1.20	1.14
20	Wood & of Wood & Cork	1.10	1.13	1.28	1.25
21	Pulp, Paper & Paper	1.25	1.07	1.34	1.25
22	Printing, Publishing & Reproduction	1.18	1.16	1.34	1.14
23	Coke, Refined Petroleum & Nuclear Fuel	1.23	1.09	1.06	1.17
24	Chemicals & Chemical Products	1.21	1.10	1.12	1.25
25	Rubber & Plastics	1.19	1.23	1.18	1.14
26	Other Non-Metallic Mineral	1.20	1.14	1.30	1.24
27	Basic Metals	1.19	1.05	1.29	1.36
28	Fabricated Metal	1.05	1.17	1.28	1.20
29	Machinery, nec.	1.09	1.14	1.18	1.18
30	Office. Accounting & Computing Machinery	1.13	1.11	1.29	1.40
31	Electrical Machinery & Apparatus, nec.	1.18	1.14	1.28	1.09
32	Radio Television & Communication Equipment	1.10	1.12	1.33	1.16
33	Medical Precision & Ontical Instruments	1.09	1.13	1.41	1.14
34	Motor Vehicles Trailers & Semi-Trailers	1.13	1.08	1.15	1.16
35	Other Transport Fouipment	1.18	1.01	1.19	1.03
36	Manufacturing nec	1.16	1.27	1.21	1.16
37	Recycling	1.14	1.24	1.21	1.04
40	Electricity & Gas	1.41	1.41	1.13	1.30
41	Water Supply	1.72	1.02	1.13	1.30
45	Construction	1.20	1.25	1.32	1.13
50	Sale Maint & Renair of Motor Vehicles & Motorcycles: Retail Sale of Fuel	1.45	1.46	1.45	1.24
51	Wholesale Trade & Commission Trade, except of Motor Vehicles & Mot/cles	1.38	1.12	1.51	1.42
52	Retail Trade, except of Motor Vehicles & Mot/cles: Repair of Household Goods	1.12	1.24	1.95	1.53
55	Hotels & Restaurants	1.10	1.25	1.40	1.25
60	Other Joland Transport	1.13	1.27	1.54	1.51
61	Other Water Transport	1.70	1.06	1.85	1.04
62	Other Air Transport	1.13	1.10	1.84	1.14
62	Other Supporting & Auxiliary Transp. Activities: Activities of Travel Acapeies	1.11	1.36	1.66	1.30
64	Dest & Telecommunications	1.51	1.54	1.37	1.62
65	Fost & Telecommunications	1.88	1.43	1.42	1.29
65	Financial Intermediation, except insurance & Pension Funding	1.00	1 14	2 19	1.03
67	Activities Poleted to Eineneich Intermediction	1.52	1.39	1.61	1.62
70	Deal Estate Activities	3 27	3.76	9 20	3 57
70	Denting of Machinery & Equipment	2.99	2.10	2.41	1.80
71	Commuter & Deleted Activities	1.85	1 18	2.17	1.37
72	Descente & Development	1 11	1.10	2.17	2.14
73	Other Dusiness Activities	1.11	1 14	1 55	1 24
74	Other Busiless Activities	1.02	1 18	1.55	1.24
15	Education & Defence, Compulsory Social Security	1.11	0.97	1.05	1.21
8U 0 <i>5</i>	Education	1.10	1 18	1.05	1.12
85 00	realul & Social Work	1.20	1.10	1.20	1.19
90	sewage & Keruse Disposal, Sanitation & Similar Activities	1.45	1.00	2.00	1.44
91	Acuvities of Membership Organizations, nec.	1.00	1.22	2.00 1 82	1 36
92	Recreational, Cultural and Sporting Activities	1.54	1.24	1.05	1.50
93	Uther Service Activities	4.31	1.91	1.70	1.00

Table A1.a. Estimated mark-ups by sector and country

Notes: Mark-ups in bold are statistically significantly different from 1 at the 5% level.

	Table A1.b. Estimated mark-ups by sect	tor and country	*		
Code	Sector	Netherlands	Belgium	Austria	Finland
15	Food & Beverages	1.07	1.09	1.07	1.10
16	Tobacco	1.48	1.06	1.70	1.11
17	Textiles	1.08	1.08	1.14	1.20
18	Wearing Apparel, Dressing & Dying of Fur	1.09	1.09	1.17	1.08
19	Leather, leather and footwear	1.12	1.09	1.22	1.09
20	Wood & of Wood & Cork	1.20	1.10	1.16	1.21
21	Pulp, Paper & Paper	1.13	1.12	1.28	1.34
22	Printing, Publishing & Reproduction	1.16	1.16	1.19	1.16
23	Coke, Refined Petroleum & Nuclear Fuel	1.05	1.07	1.14	1.14
24	Chemicals & Chemical Products	1.20	1.19	1.15	1.24
25	Rubber & Plastics	1.07	1.13	1.13	1.20
26	Other Non-Metallic Mineral	1.25	1.15	1.25	1.30
27	Basic Metals	1.39	1.13	1.29	1.17
28	Fabricated Metal	1.14	1.12	1.16	1.18
29	Machinery, nec.	1.10	1.16	1.14	1.17
30	Office, Accounting & Computing Machinery	1.03	1.56	1.37	1.06
31	Electrical Machinery & Apparatus, nec.	1.09	1.12	1.15	1.19
32	Radio, Television & Communication Equipment	1.11	1.06	1.16	1.28
33	Medical, Precision & Optical Instruments	1.26	1.17	1.19	1.24
34	Motor Vehicles, Trailers & Semi-Trailers	1.08	1.06	1.19	1.06
35	Other Transport Equipment	1.05	1.05	1.13	1.04
36	Manufacturing, nec.	1.12	1.05	1.10	1.22
37	Recycling	1.18	1.11	1.73	1.33
40	Electricity & Gas	1.13	1.53	1.37	1.65
41	Water Supply	1.66	1.41	2.01	2.48
45	Construction	1.10	1.17	1.22	1.14
50	Sale, Maint. & Repair of Motor Vehicles & Motorcycles; Retail Sale of Fuel	1.27	1.25	1.64	1.40
51	Wholesale Trade & Commission Trade, except of Motor Vehicles & Mot/cles	1.39	1.21	1.39	1.25
52	Retail Trade, except of Motor Vehicles & Mot/cles; Repair of Household Goods	1.41	1.21	1.39	1.29
55	Hotels & Restaurants	1.31	1.23	1.36	1.10
60	Other Inland Transport	1.24	1.26	1.42	1.52
61	Other Water Transport	1.36	1.07	2.04	1.31
62	Other Air Transport	1.26	1.04	1.41	1.40
63	Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies	1.25	1.30	1.40	1.53
64	Post & Telecommunications	1.28	1.59	1.29	1.48
65	Financial Intermediation, except Insurance & Pension Funding	1.39	1.45	1.58	1.72
66	Insurance & Pension Funding, except Compulsory Social Security	1.41	1.55	2.13	2.28
67	Activities Related to Financial Intermediation	1.37	1.31	1.61	1.65
70	Real Estate Activities	2.95	3.81	3.43	2.23
71	Renting of Machinery & Equipment	2.04	1.63	2.41	1.74
72	Computer & Related Activities	1.22	1.17	1.32	1.26
73	Research & Development	1.05	0.94	1.18	1.07
74	Other Business Activities	1.15	1.31	1.23	1.18
75	Public Administration & Defence; Compulsory Social Security	1.19	1.12	1.14	1.07
80	Education	1.08	1.09	1.12	1.09
85	Health & Social Work	1.22	1.23	1.24	1.10
90	Sewage & Refuse Disposal, Sanitation & Similar Activities	1.39	1.26	1.53	1.47
91	Activities of Membership Organizations, nec.	1.10	1.06	1.12	1.06
92	Recreational, Cultural and Sporting Activities	1.27	1.41	1.34	1.24
93	Other Service Activities	1.49	1.38	1.28	1.43
Notes	s: Mark-ups in bold are statistically significantly different from 1 at the 5% level.				

	Table A1.c. Estimated mark-ups by see	ctor, US vs. 1	EA	
Code	Sector	US	EA Weighted	EA Unweighted
15	Food & Davarages	1.12	1.12	1.11
15	Tobacco	1.61	1.33	1.32
17	Textiles	1.07	1.16	1.14
18	Wearing Apparel Dressing & Dving of Fur	1.14	1.16	1.14
10	Leather leather and footwaar	1.21	1.18	1.14
20	Wood & of Wood & Cork	1.15	1.18	1.18
20	Pulp Daper & Daper	1.21	1.24	1.22
21	Printing Publishing & Reproduction	1.30	1.19	1.19
22	Coke Defined Patroleum & Nuclear Fuel	1.09	1.12	1.12
23	Chemical & Chemical Products	1.31	1.17	1.18
24	Pubber & Plastics	1.19	1.18	1.16
25	Cubber Non-Matellia Mineral	1.26	1.22	1.23
20	Other Non-Metalle	1.20	1.22	1.23
21	Basic Metals	1.10	1.16	1.25
20	Fabricated Medal	1.20	1.13	1.15
29	Office Assessmentics & Concerting Machineses	1.20	1.15	1.13
30 21	Electrical Machinery	1.12	1.17	1.16
20	Electrical Machinery & Apparatus, nec.	1.20	1.12	1.10
32 22	Radio, Television & Communication Equipment	1.25	1.20	1.17
24	Medical, Precision & Optical Instruments	0.98	1.17	1.20
34 25	Other Transmost Equipment	2.79	1.12	1.12
33 26	Memfertraisport Equipment	1.75	1.09	1.00
30 27	Manufacturing, nec.	1.21	1.12	1.10
37		1 44	1.20	1.25
40	Electricity & Gas	1.44	1.51	1.57
41	water Suppry	1 31	1.22	1.0
45 50	Construction	1.02	1.21	1.19
50	Sale, Maint. & Repair of Motor Venicles & Motorcycles; Retail Sale of Fuel	1.02	1.41	1.40
51	Wholesale Irade & Commission Irade, except of Motor Vehicles & Mot/cles	1.01	1.55	1.34
52	Retail Trade, except of Motor Venicles & Mol/cles; Repair of Household Goods	1.15	1.72	1.35
55	Hotels & Restaurants	1.15	1.20	1.25
60	Other Inland Transport	1.45	1.55	1.50
61	Other Water Transport	1.29	1.78	1.45
62	Other Air Transport	1.10	1.04	1.27
63	Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies	1.32	1.43	1.50
64	Post & Telecommunications	1 30	1.40	1.40
65	Financial Intermediation, except Insurance & Pension Funding	1.09	1.30	1.52
66	Insurance & Pension Funding, except Compulsory Social Security	1.14	1.55	1.01
67	Activities Related to Financial Intermediation	3 77	1.49	1.51
70	Real Estate Activities	3.77	4.55	4.03
71	Renting of Machinery & Equipment	3.21 1.78	2.45	2.14
72	Computer & Related Activities	1./0	1.80	1.44
73	Research & Development	1.02	2.11	1.38
74	Other Business Activities	1.20	1.44	1.00
75	Public Administration & Defence; Compulsory Social Security	1./9	1.15	1.15
80	Education	0.98	1.00	1.08
85	Health & Social Work	1.10	1.21	1.20
90	Sewage & Refuse Disposal, Sanitation & Similar Activities	1.10	1.50	1.40
91	Activities of Membership Organizations, nec.	1.05	1.05	1.21
92	Recreational, Cultural and Sporting Activities	1.25	1.50	1.40
93	Other Service Activities	1.35	1.95	1.63

Notes: Mark-ups in bold are not statistically significantly different from 1 at the 5% level. EA countries considered are: Austria, Belgium, Finland, France, Germany, Italy, Netherlands & Spain. For the weighed average, weights are gross output levels, 2000.

Code	Sector	Germany	France	Italy	Spain
15	Food & Beverages	0.02	0.01	0.03	0.01
16	Tobacco	0.17	0.12	0.04	0.05
17	Textiles	0.02	0.01	0.02	0.01
18	Wearing Apparel, Dressing & Dying of Fur	0.02	0.01	0.03	0.03
19	Leather, leather and footwear	0.03	0.01	0.01	0.02
20	Wood & of Wood & Cork	0.03	0.02	0.02	0.02
21	Pulp, Paper & Paper	0.04	0.01	0.06	0.02
22	Printing, Publishing & Reproduction	0.05	0.01	0.11	0.02
23	Coke, Refined Petroleum & Nuclear Fuel	0.11	0.01	0.03	0.04
24	Chemicals & Chemical Products	0.05	0.01	0.01	0.02
25	Rubber & Plastics	0.03	0.03	0.01	0.01
26	Other Non-Metallic Mineral	0.03	0.02	0.02	0.02
27	Basic Metals	0.05	0.02	0.07	0.03
28	Fabricated Metal	0.05	0.02	0.05	0.02
29	Machinery, nec.	0.02	0.02	0.01	0.02
30	Office, Accounting & Computing Machinery	0.06	0.03	0.19	0.07
31	Electrical Machinery & Apparatus, nec.	0.06	0.01	0.07	0.01
32	Radio, Television & Communication Equipment	0.07	0.02	0.07	0.02
33	Medical, Precision & Optical Instruments	0.05	0.01	0.10	0.03
34	Motor Vehicles, Trailers & Semi-Trailers	0.04	0.02	0.05	0.02
35	Other Transport Equipment	0.06	0.04	0.09	0.01
36	Manufacturing, nec.	0.03	0.02	0.01	0.01
37	Recycling	0.07	0.06	0.01	0.10
40	Electricity & Gas	0.08	0.06	0.04	0.05
41	Water Supply	0.17	0.05	0.04	0.08
45	Construction	0.02	0.02	0.01	0.01
50	Sale, Maint. & Repair of Motor Vehicles & Motorcycles; Retail Sale of Fuel	0.09	0.05	0.02	0.01
51	Wholesale Trade & Commission Trade, except of Motor Vehicles & Mot/cles	0.08	0.03	0.01	0.02
52	Retail Trade, except of Motor Vehicles & Mot/cles; Repair of Household Goods	0.03	0.03	0.06	0.02
55	Hotels & Restaurants	0.03	0.02	0.02	0.02
60	Other Inland Transport	0.06	0.03	0.08	0.05
61	Other Water Transport	0.13	0.02	0.03	0.03
62	Other Air Transport	0.15	0.05	0.03	0.04
63	Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies	0.06	0.03	0.03	0.03
64	Post & Telecommunications	0.11	0.22	0.04	0.08
65	Financial Intermediation, except Insurance & Pension Funding	0.23	0.05	0.15	0.05
66	Insurance & Pension Funding, except Compulsory Social Security	0.06	0.07	0.71	0.04
67	Activities Related to Financial Intermediation	0.08	0.09	0.12	0.04
70	Real Estate Activities	0.31	0.24	1.19	0.10
71	Renting of Machinery & Equipment	0.19	0.09	0.07	0.04
72	Computer & Related Activities	0.13	0.04	0.06	0.03
73	Research & Development	0.06	0.03	0.07	0.19
74	Other Business Activities	0.05	0.02	0.11	0.02
75	Public Administration & Defence; Compulsory Social Security	0.00	0.01	0.02	0.02
80	Education	0.01	0.01	0.01	0.01
85	Health & Social Work	0.03	0.03	0.01	0.01
90	Sewage & Retuse Disposal, Sanitation & Similar Activities	0.05	0.07	0.11	0.02
91	Activities of Membership Organizations, nec.	0.03	0.06	0.14	0.01
92	Recreational, Cultural and Sporting Activities	0.04	0.03	0.11	0.03
93 N-+-	Other Service Activities	0.13	0.08	0.11	0.04

Table A2.a. Standard errors corresponding to the mark-up estimates by sector and country



Code	Sector	Netherlands	Relgium	Austria	Finland
15		0.01	0.01	Austi 1a	0.02
15	Food & Beverages	0.01	0.01	0.03	0.02
17	Totacco	0.09	0.05	0.20	0.04
10	Wassing Amoral Drassing & Duing of Fur	0.03	0.01	0.03	0.03
10	Leather leather and features	0.04	0.04	0.07	0.03
20	Wood & of Wood & Cody	0.07	0.02	0.08	0.02
20		0.04	0.01	0.06	0.04
21	Puip, Paper & Paper	0.04	0.03	0.07	0.04
22	Cales Defined Deteclaume & Nuclear Fuel	0.04	0.02	0.00	0.01
25	Chemicale & Chemical Broducte	0.02	0.01	0.11	0.03
24	Dukkar & Diastica	0.04	0.01	0.04	0.04
25	Cother Ner Matellie Minarel	0.03	0.01	0.05	0.02
20	Durier Non-Metallic Milleral	0.03	0.02	0.00	0.04
27	Basic Metals	0.07	0.02	0.08	0.02
20	Machinery rec	0.02	0.01	0.03	0.02
29	Office Accounting & Computing Machinem	0.03	0.02	0.07	0.02
30	Electical Machinery & Amagnetic and	0.03	0.17	0.09	0.07
22	Electrical Machinery & Apparatus, nec.	0.03	0.02	0.05	0.03
32	Radio, Television & Communication Equipment	0.12	0.03	0.05	0.06
24	Medical, Precision & Optical Instruments	0.07	0.04	0.08	0.05
34 25	Motor venicles, Trailers & Semi-Trailers	0.03	0.01	0.03	0.04
35	Manifestation and	0.03	0.03	0.04	0.05
27	Manufacturing, nec.	0.04	0.02	0.07	0.02
37	Recycling	0.03	0.02	0.10	0.08
40	Electricity & Gas	0.04	0.08	0.09	0.09
41	Water Suppry	0.13	0.09	0.24	0.23
45	Construction	0.02	0.01	0.06	0.02
50	Sale, Maint. & Repair of Motor Venicles & Motorcycles; Retail Sale of Fuel	0.03	0.02	0.10	0.04
51	wholesale Trade & Commission Trade, except of Motor Venicles & Mot/cles	0.05	0.05	0.08	0.03
55	Retain Frade, except of Motor Venicles & Mot/cles; Repair of Household Goods	0.03	0.02	0.09	0.04
55 60	Other Inlend Transport	0.05	0.01	0.04	0.01
61	Other Mater Transport	0.05	0.03	0.13	0.04
62	Other Air Transport	0.03	0.03	0.23	0.04
62	Other Supporting & Auxiliary Transp. Activities: Activities of Travel Agencies	0.08	0.02	0.12	0.03
64	Deet & Telecommunications	0.05	0.04	0.15	0.05
65	Fischerical Intermediation avaget Insurance & Dansien Funding	0.09	0.10	0.15	0.05
66	Insurance & Dansion Funding execut Compulsory Social Security	0.15	0.09	0.10	0.12
67	Activities Poloted to Financial Intermediation	0.09	0.09	0.51	0.40
70	Pool Estate Activities	0.07	0.04	0.10	0.21
70	Ponting of Machinery & Equipment	0.43	0.27	0.55	0.10
71	Computer & Poloted Activities	0.17	0.03	0.17	0.00
72	Passarah & Davalanment	0.04	0.03	0.08	0.00
73	Other Business Activities	0.03	0.04	0.12	0.02
74	Dublic Administration & Defenses Commulatory Social Security	0.03	0.02	0.05	0.05
10	Education	0.01	0.04	0.01	0.00
80 85	Education	0.02	0.01	0.02	0.00
00	Sawage & Defuse Disposed Sonitation & Similar Activities	0.05	0.03	0.10	0.00
90 01	Activities of Membership Organizations, page	0.10	0.04	0.11	0.04
91 02	Pecreational Cultural and Sporting Activities	0.02	0.02	0.01	0.00
92 03	Other Service Activities	0.00	0.04	0.11	0.02
Note	Since betwee Activities	a method	0.04	0.07	0.04

Table A2.b. Standard errors corresponding to the mark-up estimates by sector and country

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Code	Sector	US	EA Weighted average	EA Unweighted average
15	Food & Beverages	0.02	0.01	0.01
16	Tobacco	0.14	0.04	0.04
17	Textiles	0.02	0.01	0.01
18	Wearing Apparel, Dressing & Dying of Fur	0.05	0.01	0.01
19	Leather, leather and footwear	0.09	0.01	0.01
20	Wood & of Wood & Cork	0.03	0.01	0.01
21	Pulp, Paper & Paper	0.03	0.02	0.02
22	Printing, Publishing & Reproduction	0.06	0.03	0.02
23	Coke, Refined Petroleum & Nuclear Fuel	0.02	0.03	0.02
24	Chemicals & Chemical Products	0.04	0.02	0.01
25	Rubber & Plastics	0.04	0.01	0.01
26	Other Non-Metallic Mineral	0.03	0.01	0.01
27	Basic Metals	0.03	0.02	0.02
28	Fabricated Metal	0.04	0.02	0.01
29	Machinery, nec.	0.03	0.01	0.01
30	Office, Accounting & Computing Machinery	0.04	0.04	0.04
31	Electrical Machinery & Apparatus, nec.	0.04	0.03	0.01
32	Radio, Television & Communication Equipment	0.04	0.03	0.02
33	Medical, Precision & Optical Instruments	0.09	0.03	0.02
34	Motor Vehicles, Trailers & Semi-Trailers	0.04	0.02	0.01
35	Other Transport Equipment	0.58	0.03	0.02
36	Manufacturing, nec.	0.03	0.01	0.01
37	Recycling	0.00	0.01	0.03
40	Electricity & Gas	0.08	0.03	0.02
41	Water Supply	0.00	0.04	0.05
45	Construction	0.05	0.01	0.01
50	Sale, Maint. & Repair of Motor Vehicles & Motorcycles; Retail Sale of Fuel	0.06	0.03	0.03
51	Wholesale Trade & Commission Trade, except of Motor Vehicles & Mot/cles	0.04	0.02	0.02
52	Retail Trade, except of Motor Vehicles & Mot/cles; Repair of Household Goods	0.04	0.02	0.02
55	Hotels & Restaurants	0.03	0.01	0.01
60	Other Inland Transport	0.09	0.03	0.02
61	Other Water Transport	0.06	0.03	0.03
62	Other Air Transport	0.07	0.03	0.03
63	Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies	0.07	0.02	0.02
64	Post & Telecommunications	0.08	0.06	0.04
65	Financial Intermediation, except Insurance & Pension Funding	0.08	0.08	0.05
66	Insurance & Pension Funding, except Compulsory Social Security	0.09	0.07	0.11
67	Activities Related to Financial Intermediation	0.00	0.04	0.04
70	Real Estate Activities	0.24	0.23	0.18
71	Renting of Machinery & Equipment	0.30	0.06	0.04
72	Computer & Related Activities	0.32	0.04	0.02
73	Research & Development	0.25	0.05	0.03
74	Other Business Activities	0.07	0.03	0.02
75	Public Administration & Defence; Compulsory Social Security	0.12	0.00	0.01
80	Education	0.06	0.01	0.00
85	Health & Social Work	0.02	0.01	0.01
90	Sewage & Refuse Disposal, Sanitation & Similar Activities	0.18	0.06	0.03
91	Activities of Membership Organizations, nec.	0.05	0.08	0.02
92	Recreational, Cultural and Sporting Activities	0.06	0.03	0.02
93	Other Service Activities	0.06	0.07	0.03

Table A2.c. Standard errors corresponding to the mark-up estimates by sector for the US and the Euro Area

Notes: Reported standard errors are calculated as $s.e(1/1-\beta)=s.e(\beta)/(1-\beta)^2$ using the delta method. EA countries considered are: Austria, Belgium, Finland, France, Germany, Italy, Netherlands & Spain. For the weighed average, weights are gross output levels, 2000.

	Table A3.a. Estimated mark-ups by sector and	country, 1981-	1992		
Code	Sector	Germany	France	Italy	Spain
15	Food & Beverages	1.12	1.13		1.11
16	Tobacco	1.41	1.12		1.21
17	Textiles	1.15	1.08		1.17
18	Wearing Apparel, Dressing & Dying of Fur	1.03	1.12		1.35
19	Leather, leather and footwear	1.07	1.11	1.21	1.15
20	Wood & of Wood & Cork	1.10	1.11	1.28	1.26
21	Pulp, Paper & Paper	1.31	1.07		1.26
22	Printing, Publishing & Reproduction	1.15	1.17		1.14
23	Coke, Refined Petroleum & Nuclear Fuel	1.30	1.09	1.05	1.18
24	Chemicals & Chemical Products	1.26	1.11	1.11	1.26
25	Rubber & Plastics	1.22	1.26	1.17	1.15
26	Other Non-Metallic Mineral	1.23	1.11	1.30	1.25
27	Basic Metals		1.05		1.35
28	Fabricated Metal		1.17		1.19
29	Machinery, nec.	1.08	1.19	1.19	1.18
30	Office, Accounting & Computing Machinery	1.22	1.10		1.43
31	Electrical Machinery & Apparatus, nec.	1.29	1.18		1.09
32	Radio, Television & Communication Equipment	1.07	1.16		1.15
33	Medical, Precision & Optical Instruments	1.08	1.16		1.14
34	Motor Vehicles, Trailers & Semi-Trailers	1.11	1.06		1.16
35	Other Transport Equipment	1.01	1.04		1.02
36	Manufacturing, nec.		1.31	1.22	1.16
37	Recycling		1.15	1.22	
40	Electricity & Gas	1.44	1.41	1.10	1.29
41	Water Supply	1.65	1.09	1.10	1.29
45	Construction	1.20	1.27	1.32	1.13
50	Sale, Maint. & Repair of Motor Vehicles & Motorcycles; Retail Sale of Fuel	1.38	1.44	1.45	1.24
51	Wholesale Trade & Commission Trade, except of Motor Vehicles & Mot/cles	1.37	1.09	1.51	1.42
52	Retail Trade, except of Motor Vehicles & Mot/cles; Repair of Household Goods	1.14	1.22	1.99	1.52
55	Hotels & Restaurants	1.11	1.24	1.40	1.24
60	Other Inland Transport		1.29		1.50
61	Other Water Transport		1.06	1.86	1.04
62	Other Air Transport		1.13	1.84	1.14
63	Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies		1.37	1.67	1.31
64	Post & Telecommunications	1.69	1.64	1.31	1.63
65	Financial Intermediation, except Insurance & Pension Funding	1.80	1.40		1.25
66	Insurance & Pension Funding, except Compulsory Social Security	1.12	1.10		0.99
67	Activities Related to Financial Intermediation	1.38	1.44		1.59
70	Real Estate Activities	3.25	3.39	9.28	3.59
71	Renting of Machinery & Equipment	3.09	2.13	2.49	1.81
72	Computer & Related Activities	1.95	1.11	2.25	1.37
73	Research & Development	1.19	1.09	2.47	1.84
74	Other Business Activities	1.80	1.11		1.24
75	Public Administration & Defence; Compulsory Social Security	1.11	1.17	1.16	1.22
80	Education	1.10	0.94	1.03	1.12
85	Health & Social Work	1.24	1.15	1.19	1.20
90	Sewage & Refuse Disposal, Sanitation & Similar Activities	1.44	1.60		1.26
91	Activities of Membership Organizations, nec.	1.07	1.32		1.07
92	Recreational, Cultural and Sporting Activities	1.48	1.27		1.39
93	Other Service Activities	2.28	1.40		1.67

Table A3 a Estimated many una by sector and country 1091 1	
Table A.J.a. Estimated mark-ubs by sector and country, 1981-1	992

Code	Table A3.0. Estimated mark-ups by sector a	Netherlands	Belgium	Austria	Finland
15		1.07	1.11	1.00	1.07
15	Food & Beverages	1.07	1.11	1.00	1.07
10	Toutilog	1.34	1.27	1.87	1.30
1/		1.30	1.09	1.07	1.21
18	Wearing Apparel, Dressing & Dying of Fur	1.24	1.09	1.11	1.07
19	Leather, leather and lootwear	1.13	1.10	1.05	1.06
20	Wood & of Wood & Cork	1.09	1.09	1.12	1.19
21	Pulp, Paper & Paper	1.17	1.14	1.17	1.30
22	Printing, Publishing & Reproduction	1.12	1.19	1.16	1.15
23	Coke, Refined Petroleum & Nuclear Fuel	1.05	1.06	1.02	1.09
24	Chemicals & Chemical Products	1.25	1.21	1.14	1.27
25	Rubber & Plastics	1.08	1.14	1.11	1.24
26	Other Non-Metallic Mineral	1.28	1.19	1.21	1.34
27	Basic Metals	1.43	1.11	1.17	1.16
28	Fabricated Metal	1.16	1.15	1.05	1.22
29	Machinery, nec.	1.05	1.11	1.05	1.21
30	Office, Accounting & Computing Machinery	1.01	1.96	0.90	2.30
31	Electrical Machinery & Apparatus, nec.	1.14	1.13	1.10	1.22
32	Radio, Television & Communication Equipment	1.03	1.10	1.14	1.31
33	Medical, Precision & Optical Instruments	1.06	1.17	1.12	1.32
34	Motor Vehicles, Trailers & Semi-Trailers	1.07	1.07	1.23	1.13
35	Other Transport Equipment	1.06	1.04	1.07	0.94
36	Manufacturing, nec.	1.12	1.08	1.07	1.27
37	Recycling	1.13	1.09	1.58	1.00
40	Electricity & Gas	1.18	1.68	1.33	1.65
41	Water Supply	1.59	1.39	1.84	1.99
45	Construction	1.09	1.18	1.10	1.17
50	Sale, Maint. & Repair of Motor Vehicles & Motorcycles; Retail Sale of Fuel	1.25	1.33	1.72	1.35
51	Wholesale Trade & Commission Trade, except of Motor Vehicles & Mot/cles	1.36	1.35	1.41	1.23
52	Retail Trade, except of Motor Vehicles & Mot/cles; Repair of Household Goods	1.39	1.22	1.41	1.25
55	Hotels & Restaurants	1.32	1.25	1.35	1.11
60	Other Inland Transport	1.15	1.27	1.32	1.38
61	Other Water Transport	1.29	1.08	2.41	1.31
62	Other Air Transport	1.26	1.08	1.42	1.39
63	Other Supporting & Auxiliary Transp. Activities: Activities of Travel Agencies	1.27	1.27	1.24	1.40
64	Post & Telecommunications	1.31	1.85	1.70	1.36
65	Financial Intermediation except Insurance & Pension Funding	2.02	1.56	1.52	1.23
66	Insurance & Pension Funding except Compulsory Social Security	1 30	1.53	1.59	1.45
67	Activities Related to Financial Intermediation	1.50	1.35	1.76	2.01
70	Real Estate Activities	2.76	4 00	4.22	2.01
71	Renting of Machinery & Equipment	2.70	1.71	2.24	1.67
72	Computer & Related Activities	1.25	1.12	1.22	1.07
72	Pacagroph & Davelopment	1.25	0.03	1.22	1.25
73	Other Business Activities	1.20	1.25	1.12	1.12
74	Dublic Administration & Defenses Commulatory Social Security	1.04	1.55	1.24	1.15
/ <i>3</i>	Education	1.19	1.17	1.13	1.07
8U	Education	1.00	1.11	1.12	1.08
65 00	neann a Social Work	1.18	1.50	1.10	1.11
90	Sewage & Keiuse Disposal, Sanitation & Similar Activities	1.91	1.27	1.53	1.4/
91	Acuviues of Membership Organizations, nec.	1.07	1.07	1.12	1.06
92	Recreational, Cultural and Sporting Activities	1.17	1.40	1.33	1.20
93	Other Service Activities	1.52	1.45	1.31	1.48

Table A3.b.	Estimated	mark-ups l	by sector an	nd country,	1981-1992

Code	Sector	US	EA Weighted average	EA Unweighted average
15	Food & Beverages	1.09	8	8
16	Tobacco	1.80		
17	Textiles	1.07		
18	Wearing Apparel, Dressing & Dying of Fur	1.10		
19	Leather, leather and footwear	1.15	1.18	1.11
20	Wood & of Wood & Cork	1.11	1.17	1.15
21	Pulp, Paper & Paper	1.18		
22	Printing, Publishing & Reproduction	1.26		
23	Coke, Refined Petroleum & Nuclear Fuel	1.08	1.13	1.10
24	Chemicals & Chemical Products	1.30	1.19	1.20
25	Rubber & Plastics	1.17	1.20	1.17
26	Other Non-Metallic Mineral	1.24	1.23	1.24
27	Basic Metals	1.07		
28	Fabricated Metal	1.16		
29	Machinery, nec.	1.24	1.13	1.13
30	Office, Accounting & Computing Machinery	1.21		
31	Electrical Machinery & Apparatus, nec.	1.21		
32	Radio, Television & Communication Equipment	1.23		
33	Medical, Precision & Optical Instruments	1.28		
34	Motor Vehicles, Trailers & Semi-Trailers	1.01		
35	Other Transport Equipment	4.41		
36	Manufacturing, nec.	1.20		
37	Recycling			
40	Electricity & Gas	1.36	1.32	1.38
41	Water Supply		1.19	1.49
45	Construction	1.31	1.21	1.18
50	Sale, Maint. & Repair of Motor Vehicles & Motorcycles; Retail Sale of Fuel	0.95	1.39	1.39
51	Wholesale Trade & Commission Trade, except of Motor Vehicles & Mot/cles	1.29	1.35	1.34
52	Retail Trade, except of Motor Vehicles & Mot/cles; Repair of Household Goods	1.18	1.43	1.39
55	Hotels & Restaurants	1.16	1.26	1.25
60	Other Inland Transport	1.49		
61	Other Water Transport	1.27		
62	Other Air Transport	1.05		
63	Other Supporting & Auxiliary Transp. Activities: Activities of Travel Agencies	1.36		
64	Post & Telecommunications	1.28	1.57	1.56
65	Financial Intermediation, except Insurance & Pension Funding	1.44		
66	Insurance & Pension Funding, except Compulsory Social Security	1.12		
67	Activities Related to Financial Intermediation			
70	Real Estate Activities	3.73	4.26	4.07
71	Renting of Machinery & Equipment	3.36	2.53	2.17
72	Computer & Related Activities	3.00	1.90	1.44
73	Research & Development	1.77	2.17	1.37
74	Other Business Activities	1.17		
75	Public Administration & Defence: Compulsory Social Security	1.92	1.15	1.16
80	Education	0.94	1.05	1.07
85	Health & Social Work	1.14	1,20	1.18
90	Sewage & Refuse Disposal, Sanitation & Similar Activities	1.03		
91	Activities of Membership Organizations. nec.	1.07		
92	Recreational, Cultural and Sporting Activities	1.24		
93	Other Service Activities	1.37		

Table A3.c. Estimated mark-ups by sector, US vs. EA, 1981-1992

Code	Sector	Germany	France	Italy	Spain
15	Food & Beverages	1.10	1.14	1.18	1.09
16	Tobacco	1.21	2.11	1.33	1.26
17	Textiles	1.15	1.12	1.20	1.12
18	Wearing Apparel, Dressing & Dving of Fur	1.06	1.13	1.18	1.27
19	Leather, leather and footwear	1.14	1.11	1.17	1.11
20	Wood & of Wood & Cork	1.11	1.16	1.30	1.20
21	Pulp, Paper & Paper	1.18	1.07	1.34	1.22
22	Printing, Publishing & Reproduction	1.23	1.13	1.34	1.10
23	Coke, Refined Petroleum & Nuclear Fuel	1.18	1.09	1.11	1.12
24	Chemicals & Chemical Products	1.13	1.06	1.15	1.20
25	Rubber & Plastics	1.15	1.15	1.22	1.11
26	Other Non-Metallic Mineral	1.14	1.15	1.19	1.16
27	Basic Metals	1.19	1.04	1.29	1.43
28	Fabricated Metal	1.08	1.15	1.28	1.33
29	Machinery, nec.	1.11	1.07	1.15	1.13
30	Office, Accounting & Computing Machinery	1.07	1.12	1.29	1.30
31	Electrical Machinery & Apparatus, nec.	1.06	1.12	1.28	1.13
32	Radio, Television & Communication Equipment	1.17	1.11	1.33	1.22
33	Medical, Precision & Optical Instruments	1.11	1.11	1.41	1.17
34	Motor Vehicles, Trailers & Semi-Trailers	1.16	1.12	1.15	1.16
35	Other Transport Equipment	1.38	0.92	1.19	1.06
36	Manufacturing, nec.	1.17	1.17	1.17	1.15
37	Recycling	1.16	1.44	1.17	1.04
40	Electricity & Gas	1.40	1.40	1.42	1.35
41	Water Supply	1.82	0.95	1.42	1.38
45	Construction	1.20	1.24	1.41	1.13
50	Sale, Maint. & Repair of Motor Vehicles & Motorcycles; Retail Sale of Fuel	1.55	1.53	1.57	1.24
51	Wholesale Trade & Commission Trade, except of Motor Vehicles & Mot/cles	1.39	1.19	1.47	1.44
52	Retail Trade, except of Motor Vehicles & Mot/cles; Repair of Household Goods	1.11	1.27	1.62	1.58
55	Hotels & Restaurants	1.10	1.25	1.46	1.35
60	Other Inland Transport	1.16	1.16	1.54	1.58
61	Other Water Transport	1.71	1.09	1.81	1.09
62	Other Air Transport	1.14	0.95	1.82	1.20
63	Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies	1.12	1.29	1.65	1.21
64	Post & Telecommunications	1.39	1.41	1.73	1.54
65	Financial Intermediation, except Insurance & Pension Funding	2.00	1.59	1.42	1.74
66	Insurance & Pension Funding, except Compulsory Social Security	1.11	1.46	2.19	1.40
67	Activities Related to Financial Intermediation	1.62	1.15	1.61	1.82
70	Real Estate Activities	3.32	4.40	8.62	3.40
71	Renting of Machinery & Equipment	2.76	2.03	2.06	1.72
72	Computer & Related Activities	1.70	1.29	1.83	1.39
73	Research & Development	0.98	1.14	2.07	2.53
74	Other Business Activities	1.86	1.22	1.55	1.24
75	Public Administration & Defence; Compulsory Social Security	1.11	1.19	1.26	1.15
80	Education	1.09	1.07	1.17	1.07
85	Health & Social Work	1.27	1.37	1.29	1.14
90	Sewage & Refuse Disposal, Sanitation & Similar Activities	1.41	1.70	1.68	1.20
91	Activities of Membership Organizations, nec.	1.02	1.04	2.00	1.12
92	Recreational, Cultural and Sporting Activities	1.57	1.20	1.83	1.18
93	Other Service Activities	2.49	1.79	1.90	1.48

Table A4.a. Estimated mark-ups by sector and country, 199	3-2004

Code	Sector	Netherlands	Belgium	Austria	Finland
15	Food & Beverages	1.07	1.07	1.08	1.13
16	Tobacco	1.63	1.04	1.61	1.05
17	Textiles	1.07	1.07	1.35	1.19
18	Wearing Apparel. Dressing & Dving of Fur	1.07	1.10	1.39	1.10
19	Leather leather and footwear	1.12	1.09	1.47	1.14
20	Wood & of Wood & Cork	1.29	1.11	1.25	1.23
21	Pulp, Paper & Paper	1.11	1.10	1.51	1.36
22	Printing, Publishing & Reproduction	1.20	1.13	1.31	1.18
23	Coke, Refined Petroleum & Nuclear Fuel	1.04	1.08	1.69	1.20
24	Chemicals & Chemical Products	1.18	1.13	1.18	1.22
25	Rubber & Plastics	1.06	1.12	1.21	1.18
26	Other Non-Metallic Mineral	1.23	1.08	1.35	1.27
27	Basic Metals	1.34	1.19	1.52	1.17
28	Fabricated Metal	1.11	1.11	1.33	1.15
29	Machinery, nec.	1.14	1.20	1.27	1.14
30	Office, Accounting & Computing Machinery	1.03	1.38	1.42	0.95
31	Electrical Machinery & Apparatus, nec.	1.09	1.11	1.39	1.17
32	Radio, Television & Communication Equipment	1.11	1.04	1.20	1.27
33	Medical, Precision & Optical Instruments	1.30	1.17	1.29	1.20
34	Motor Vehicles, Trailers & Semi-Trailers	1.08	1.06	1.12	1.02
35	Other Transport Equipment	1.05	1.07	1.21	1.10
36	Manufacturing, nec.	1.11	1.03	1.24	1.18
37	Recycling	1.19	1.13	1.76	1.33
40	Electricity & Gas	1.07	1.44	1.42	1.65
41	Water Supply	1.72	1.42	2.17	2.98
45	Construction	1.11	1.15	1.51	1.10
50	Sale, Maint. & Repair of Motor Vehicles & Motorcycles; Retail Sale of Fuel	1.29	1.21	1.55	1.44
51	Wholesale Trade & Commission Trade, except of Motor Vehicles & Mot/cles	1.41	1.14	1.35	1.27
52	Retail Trade, except of Motor Vehicles & Mot/cles; Repair of Household Goods	1.43	1.20	1.36	1.33
55	Hotels & Restaurants	1.30	1.22	1.38	1.10
60	Other Inland Transport	1.31	1.25	1.64	1.64
61	Other Water Transport	1.44	1.07	1.29	1.32
62	Other Air Transport	1.26	1.00	1.39	1.40
63	Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies	1.24	1.33	1.70	1.61
64	Post & Telecommunications	1.26	1.46	0.97	1.59
65	Financial Intermediation, except Insurance & Pension Funding	1.04	1.33	1.71	2.01
66	Insurance & Pension Funding, except Compulsory Social Security	1.53	1.66	2.78	2.60
67	Activities Related to Financial Intermediation	1.55	1.27	1.55	1.44
70	Real Estate Activities	3.08	3.65	2.05	2.34
71	Renting of Machinery & Equipment	2.01	1.54	3.11	1.88
72	Computer & Related Activities	1.22	1.20	1.50	1.29
73	Research & Development	1.03	0.95	2.16	1.08
74	Other Business Activities	1.16	1.27	1.19	1.26
75	Public Administration & Defence; Compulsory Social Security	1.19	1.07	1.11	1.08
80	Education	1.10	1.07	1.12	1.09
85	Health & Social Work	1.24	1.17	1.50	1.09
90	Sewage & Refuse Disposal, Sanitation & Similar Activities	1.29	1.25	1.52	1.47
91	Activities of Membership Organizations, nec.	1.10	1.06	1.12	1.07
92	Recreational, Cultural and Sporting Activities	1.33	1.41	1.35	1.26
93	Other Service Activities	1.49	1.36	1.18	1.38

Table 4A.b. H	Estimated ma	rk-uns by	sector and	country.	1993-2004

Code	Sector	US	EA Weighted average	EA Unweighted average
15	Food & Beverages	1.19	1.12	1.11
16	Tobacco	1.51	1.34	1.41
17	Textiles	1.10	1.16	1.16
18	Wearing Apparel, Dressing & Dying of Fur	1.21	1.16	1.16
19	Leather, leather and footwear	1.36	1.16	1.17
20	Wood & of Wood & Cork	1.24	1.20	1.21
21	Pulp, Paper & Paper	1.28	1.23	1.24
22	Printing, Publishing & Reproduction	1.39	1.21	1.20
23	Coke, Refined Petroleum & Nuclear Fuel	1.09	1.13	1.19
24	Chemicals & Chemical Products	1.32	1.13	1.16
25	Rubber & Plastics	1.26	1.16	1.15
26	Other Non-Metallic Mineral	1.37	1.17	1.20
27	Basic Metals	1.20	1.23	1.27
28	Fabricated Metal	1.29	1.18	1.19
29	Machinery, nec.	1.28	1.12	1.15
30	Office, Accounting & Computing Machinery	1.17	1.14	1.19
31	Electrical Machinery & Apparatus, nec.	1.15	1.14	1.17
32	Radio, Television & Communication Equipment	1.37	1.21	1.18
33	Medical, Precision & Optical Instruments	1.51	1.17	1.22
34	Motor Vehicles, Trailers & Semi-Trailers	0.89	1.15	1.11
35	Other Transport Equipment	1.36	1.11	1.12
36	Manufacturing, nec.	1.26	1.16	1.15
37	Recycling		1.19	1.28
40	Electricity & Gas	1.52	1.38	1.40
41	Water Supply		1.44	1.74
45	Construction	1.29	1.23	1.23
50	Sale, Maint. & Repair of Motor Vehicles & Motorcycles; Retail Sale of Fuel	1.24	1.48	1.42
51	Wholesale Trade & Commission Trade, except of Motor Vehicles & Mot/cles	1.40	1.35	1.33
52	Retail Trade, except of Motor Vehicles & Mot/cles; Repair of Household Goods	1.19	1.35	1.36
55	Hotels & Restaurants	1.11	1.30	1.27
60	Other Inland Transport	1.28	1.36	1.41
61	Other Water Transport	1.36	1.74	1.35
62	Other Air Transport	1.35	1.62	1.27
63	Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies	1.21	1.42	1.39
64	Post & Telecommunications	1.62	1.45	1.42
65	Financial Intermediation, except Insurance & Pension Funding	1.29	1.65	1.60
66	Insurance & Pension Funding, except Compulsory Social Security	1.15	1.47	1.84
67	Activities Related to Financial Intermediation		1.49	1.50
70	Real Estate Activities	3.83	4.37	3.86
71	Renting of Machinery & Equipment	2.98	2.17	2.14
72	Computer & Related Activities	1.07	1.66	1.43
73	Research & Development	1.40	1.85	1.49
74	Other Business Activities	1.44	1.47	1.34
75	Public Administration & Defence; Compulsory Social Security	1.48	1.16	1.15
80	Education	1.04	1.10	1.10
85	Health & Social Work	1.19	1.29	1.26
90	Sewage & Refuse Disposal, Sanitation & Similar Activities	1.33	1.57	1.44
91	Activities of Membership Organizations, nec.	1.00	1.62	1.19
92	Recreational, Cultural and Sporting Activities	1.29	1.49	1.39
93	Other Service Activities	1.25	2.00	1.63
Notes: E	A countries considered are: Austria, Belgium, Finland, France, Germany, Italy, Nether	lands & Spain.	For the weighed av	verage, weights are

Table A4.c. Estimated mark-ups by sector, US vs. EA, 1993-2004

Code	Sector	Germany	France	Italy	Spain
15	Food & Reverages	J			~1
16	Tobacco		0.00		
17	Textiles		0.99		
18	Wearing Annarel Dressing & Dving of Fur				
19	Leather leather and footwear				
20	Wood & of Wood & Cork				
20	Puln Paner & Paner				
21	Printing Publishing & Reproduction				
22	Coke Refined Petroleum & Nuclear Fuel				
23	Chemicals & Chemical Products		-0.05		
25	Rubber & Plastics		-0.05		
26	Other Non-Metallic Mineral				
20	Basic Metals				
28	Fabricated Metal				
20	Machinery nec		0.12		
30	Office Accounting & Computing Machinery		-0.12		
31	Electrical Machinery & Apparatus, nec	0.22			
22	Padia Talavisian & Communication Equipment	-0.22			
22	Madical Provision & Ontical Instruments				
24	Motor Vehicles Trailors & Sami Trailors				
25	Other Transport Equipment	0.26			
26	Manufacturing, page	0.50	0.12		
27	Manufacturing, nec.		-0.15		
40	Electricity & Con		0.50	0.22	
40	Electricity & Gas			0.32	
41	Construction			0.52	
43 50	Construction			0.10	
51	Whalesele Trade & Commission Trade execut of Mater Vakiales & Mat/ales				
52	Pateil Trade except of Mater Vakialas & Mat/alasi Pareir of Haussheld Coada			0.27	
52	Retail Trade, except of Motor Venicles & Mot/cles, Repair of Household Goods			-0.57	
33 (0	Hotels & Restaurants				
00	Other Inland Transport				
01	Other Water Transport				
62	Other Air Transport				
03	Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies			0.42	
65	Fost & Telecommunications			0.42	0.40
05	Financial Intermediation, except insurance & Pension Funding				0.49
00	A sticities Deleted to Elecentical Laterna disting				0.41
0/	Activities Related to Financial Intermediation		1.01		
70	Real Estate Activities		1.01	0.42	
71	Consistent & Delated Activities			-0.43	
72	Computer & Related Activities			-0.42	
73	Research & Development		0.11	-0.41	
74	Other Business Activities		0.11	0.10	
/5	Public Administration & Defence; Compulsory Social Security		0.12	0.10	
8U 0 <i>5</i>	Education		0.12	0.13	
65 00	ricanu & Social Work		0.23	0.10	
90	Sewage & Keruse Disposal, Sanitation & Similar Activities		0.29		
91	Activities of Membership Organizations, nec.		-0.28		0.01
92	Recreational, Cultural and Sporting Activities		0.20		-0.21
93			0.39		

Table A5.a. Statistically significant difference of 1993-2004 mark-up	o from 1981-1992 mark-up by sector and country
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Notes: Differences presented are statistically significant at the 5% level (two-sided t-test, critical value ±2.074).

Case Network lands Description Asstrat Final of Loss 16 Food & Beverages -0.01 -0.31 16 Tokaco -0.24 -0.31 17 Textiles -0.42 -0.31 19 Lather, Leafuer and Kostwar -0.42 -0.34 10 Pulip, Paper & Paper -0.42 -0.34 21 Pulip, Paper & Paper -0.34 -0.34 22 Puniting, Publishing & Reproduction -0.68 -0.08 23 Cake, Refined Pertoleum & Nuclear Fuel -0.08 -0.77 24 Chernicals & Chemical Products -0.02 -1.35 25 Rubber & Plantics -0.22 -1.35 26 Rubin (Transport Rylapinet) -0.23 -1.35 36 Helerich Machinery & Apparatus, nec. -0.29 -1.35 37 Redicki, Transport Rylapinet -0.09 -0.09 38 Moritory Rylapinet -0.09 -0.09 40 Electricity & Gas -0.01 -0.22	$\frac{1}{Cada}$	able A5.b. Statistically significant difference of 1993-2004 mark-up 1	Notherlands	2 mark-u	p by secto	Finland	ntry USA
15Food & Bevernges0.0417Texalics0.240.3117Texalics0.280.3118Werning Appard, Dressing & Dying of Fur0.42119Learther, Learther and footwar0.200.3410Nulp, Apper, & Paper0.34112Polin, Paper, & Paper0.34113Coke, Refined Petroleoun & Nuclear Fuel0.080.3414Chemicals & Chemical Products0.080.4415Rubber & Plantics0.080.4416Obler Non Meallic Mineral0.12117Basic Netals0.080.44118Pabricated Metal0.080.44119Office, Accounting & Computing Machinery0.521.1310Belectical Meshinery & Apparatus, nec.0.29110Belectical Meshinery & Apparatus, nec.0.29111Belectical Meshinery & Apparatus, nec.0.29-3.0512Mactio, Trailera, Semi, Trailera0.41113Medical, Precision & Optical Instruments0.41-3.0514Water Singhty0.990.990.9915Construction0.21-3.0516Mather Kapparatus, nec.0.210.2817Water Singhty0.41-0.12-3.0518Mather Kapparatus, nec.0.210.2919Mather Kapparatus, nec.0.23-3.0510Mather Kappar	Code	Sector	Netherlands	Beigium	Austria	Finland	USA
10 Toolaco 0.24 0.31 10 Toolaco 0.28 11 Word & Apporel, Dresing & Dring of Fur 0.42 12 Nulp, Paper & Mayer 0.42 13 Word & Cock 0.20 14 Mulp, Paper & Paper 0.68 15 Coke, Refined Petroleum & Nuclear Fuel 0.68 16 Other Non-Meallis Mineral 0.01 17 Rasik Meals 0.12 18 Robber & Plantics 0.27 19 Nachinery, nec. 0.29 10 Office, Accounting & Computing Machinery 0.52 17 Radio, Television & Apparatus, nec. 0.29 18 Machinery, nec. 0.29 19 Machinery, nec. 0.29 10 Office, Accounting & Computing Machinery 0.52 11 Machinery, nec. 0.29 12 Radio, Television & Optical Instruments	15	Food & Beverages		-0.04			
17TextinesU18Waring Apparel, Dressing & Dying of ParU19Leather, teather and footwear0.2020Wood & Gwood & Coxk0.2021Pulp, Paper & Paper0.3422Printing, Eublishing & Reproduction0.3423Coke, Refined Paroleum & Nuclear Fuel0.6824Cohemicalis & Chemical Products0.01225Rubber & Plassics0.02026Other Non-Metallis Mineral0.1227Basin Metals0.080.2128Fabricated Metal0.12129Machinery, ner.0.201.3530Office, Accounting & Computing Machinery00.2231Electrical Mechinery & Apparatus, ner.0.221.3534Motor Vehicles, Trailers & Semi Trailers	16	Tobacco		-0.24		-0.31	
18 Wanng Appare, Dessang & Dying of the second	17	Textiles			0.28		
19Leather, lather and lootvear0.2019Wood & Cork0.2021Phip, Paper & Paper0.3422Printing, Publishing & Reproducion0.8423Coke, Refined Petroleum & Xuclear Fuel0.0844Chemicals & Chemical Products0.0855Rubber & Plastics0.0850Other Non-Metallic Mineral0.1256Bairt Metal0.0857Machinery, nec.0.5258Jakies A Communication Equipment0.5250Other Famport Equipment0.5250Other Vanises A Communication Equipment0.5250Other Famport Equipment0.4150Other Vanises A Semi. Trailers-3.0551Other Tamport Equipment0.4152Recision & Optical Instruments-3.0553Other Tamport Equipment0.4154Construction, nec.0.4155Other Arimsport Equipment0.4156Construction, nec.0.4157Recycling0.4158Restauratis0.2559Recision & Optical S Motorycles; Retail Sale of Fuel-0.1250Other Arimsport Ende & Motorycles; Retail Sale of Fuel-0.2150Other Arimsport of Motor Vehicles & Motorycles; Retail Sale of Fuel-0.2150Other Arimsport0.3651Hotels & Restauratis0.3052Retail Trade, except of Motor Vehicles & Motorycles; Retail Sale of Fuel-0.21 <t< td=""><td>18</td><td>Wearing Apparel, Dressing & Dying of Fur</td><td></td><td></td><td></td><td></td><td></td></t<>	18	Wearing Apparel, Dressing & Dying of Fur					
20 Wood & of Wood & Cork 0.20 21 Pulp, Paper & Paper 0.34 22 Printing, Politsking & Reproduction -0.08 23 Coke, Refined Petroleum & Nuclear Fuel -0.08 24 Chemicals & Chemical Petroleum (Nuclear Fuel -0.08 25 Rubber & Plastics -0.08 26 Other Non-Meatlike Mineral 0.12 27 Basic Metals 0.08 0.34 28 Other Non-Meatlike Mineral 0.27 - 30 Othere, Accounting Machinery 0.52 -1.35 31 Electrical Machinery & Appratus, nec. 0.29 - 32 Radio, Television & Communication Equipment - 0.30 33 Medical, Precision & Qotical Instruments - - - 44 Motor Vehicles, Trailers & Semi-Trailers - 0.39 - 55 Other Transport Equipment - 0.11 - 0.28 64 Houties & Motor Vehicles & Motorcycles; Retail Sale of Fuel 0.11 - 0.28	19	Leather, leather and footwear			0.42		
11 Puip, Paper & Paper 0.34 12 Puinting, Publishing & Keproduction 0.68 12 Coke, Refined Petroleum & Nuclear Fuel 0.68 14 Chemicals & Chemical Products -0.08 15 Rubber & Plastics -0.08 16 Other Non-Metallic Mineral 0.12 17 Basic Metals 0.08 0.34 18 Pairoizated Metal 0.27 - 19 Office, Accounting & Computing Machinery 0.29 - 10 Office, Accounting & Computing Machinery 0.29 - 11 Basic Metals Construction 0.27 12 Radio, Television & Optical Instruments - - 13 Medical, Provision & Optical Instruments - - 14 Motor Vehicles, Trailers & Semi-Trailers - - - 15 Other Transport Equipment - 0.40 - - 16 Maufacturing, nec. - 0.40 - - - 16 Maufacturing, nec. - 0.41 - - <t< td=""><td>20</td><td>Wood & of Wood & Cork</td><td>0.20</td><td></td><td></td><td></td><td></td></t<>	20	Wood & of Wood & Cork	0.20				
22 Printing, Publishing & Reproduction 0.68 23 Coke, Refined Paroleum & Nuclear Puol 0.68 24 Chemicals & Chemical Poducts 0.08 0.12 25 Rubber & Plastics 0.08 0.21 26 Other Non-Metallic Mineral 0.02 0.08 0.34 27 Basic Metals 0.08 0.34 0.12 28 Indering Neen-Metallic Mineral 0.02 1.35 30 Officer, Accounting & Computing Machinery 0.23 1.35 31 Electrical Machinery & Apparatus, nee. 0.29 1.35 32 Radio: Tensport Equipment 3.05 33 Modical, Precision & Communication Equipment 3.05 34 Motor Vehicles, Trailers & Semi: Trailers 3.05 35 Other Insergort Equipment 3.05 36 Manufacturing, nee. 0.09 41 Water Supply 0.99 42 Rescription Motor Vehicles & Motor/esites & Mot/else & Mot/else 0.22 51 Mubals & Restaurants 0.23	21	Pulp, Paper & Paper			0.34		
23 Coke, Relined Peroleum & Nuckar Piel 0.08 24 Chemicals & Chemical Products 0.08 25 Rubber & Planics 0.012 26 Other Non-Meallic Mineral 0.12 27 Basic Meals 0.08 28 Fabricasch Meal 0.27 29 Machinery, nec. 0.27 20 Office, Accounting & Computing Machinery 0.29 21 Radio, Tecision & Optical Instruments 0.29 22 Radio, Tecision & Optical Instruments -0.09 31 Electricity & Gas -0.09 32 Madia, Precision & Optical Instruments -0.09 34 Motor Vehicles, Trailers & Semi-Trailers -0.09 35 Other Timsport Equipment -0.11 -0.09 36 Maufacturing, nec. 0.99 -0.09 37 Recycling -0.12 -0.23 38 Matia, & Repair of Motor Vehicles & Moto/Less & Mot/Less & -0.22 -0.21 <td>22</td> <td>Printing, Publishing & Reproduction</td> <td></td> <td></td> <td></td> <td></td> <td></td>	22	Printing, Publishing & Reproduction					
24 Chemical & Chemical Products -0.08 25 Rubber & Plastics - 26 Other Non-Metallic Mineral -0.12 27 Basic Metals 0.08 0.34 28 Fubricaned Metal 0.027 - 29 Machinery, nec. 0.27 - 30 Office, Accounting & Computing Machinery 0.29 - 31 Bedricaned Metal Machinery & Apparatus, nec. 0.29 - 32 Radio, Television & Communication Equipment - - 33 Moter Vehicles, Traiters & Semi: Traiters - - 34 Moter Vehicles, Traiters & Semi: Traiters - - 35 Other Transport Equipment - - 0.09 40 Electricity & Gas - - 0.09 51 Moter Supply - 0.12 - 52 Rotal: Trade, except of Motor Vehicles & Moterycles; Repair of Household Goods - - 53 Hotels & Restaurants - 0.21 -	23	Coke, Refined Petroleum & Nuclear Fuel			0.68		
25 Rubber & Plastics 26 Other Non-Metallic Nineral -0.12 27 Basic Metals 0.08 0.34 28 Fabricated Metal 0.27 29 Machinery, nec. 0.52 1.35 31 Electrical Machinery & Apparatus, nec. 0.29 3 32 Radio, Television & Optical Instruments 0.42 - 34 Motor Vehicles, Trailers & Semi-Trailers 0.92 - 35 Other Transport Equipment - - 36 Moutor Vehicles, Trailers & Semi-Trailers - - 37 Recycling 0.99 - - 40 Electricity & Gas 0.91 - 0.28 51 Mutalizaturing, nec. 0.99 - 0.28 62 Construction 0.41 - 0.28 63 Sale, Maint & Repair of Motor Vehicles & Motorcycles; Repair of Household Goods - 0.22 53 Horek & Restaurants - 0.21 60 Oth	24	Chemicals & Chemical Products		-0.08			
26 Other Non-Metallic Mineral 0.12 27 Basic Metals 0.08 0.34 28 Fabricated Metal 0.27 29 Machinery, nec. 0.22 21 Electrical Machinery & Computing Machinery 0.52 -1.35 21 Electrical Machinery & Apparatus, nec. 0.29 - 22 Radio, Television & Communication Equipment 0.29 - 34 Motor Vehicles, Trailers & Semi-Trailers - - 35 Other Transport Equipment - - - 36 Manufacturing, nec. - - - - - 37 Recycling - - - 0.09 - - - - - - - - - - - - 0.09 - - 0.09 - - 0.28 - - 0.28 - - 0.28 - - 0.28 - - 0.28 - 0.21 - 0.26 - - - 0.26 -	25	Rubber & Plastics					
27 Basic Metals 0.08 0.34 28 Fabricated Metal 0.27 30 Office, Accounting & Computing Machinery 0.52 -1.35 31 Electrical Machinery, nec. 0.29 - 32 Radio, Television & Communication Equipment 0.29 - 33 Medical, Precision & Optical Instruments - - 34 Motor Vehicles, Trailers & Semi: Trailers - - 35 Other Transport Equipment - -0.09 36 Manufacturing, nec. -0.09 - 37 Recycling - - 48 Water Supply 0.99 - - 49 Extericity & Gas - - - 41 Water Supply 0.99 - - 0.28 52 Retail Trade, except of Motor Vehicles & Motorcycles; Retail Sale of Fuel 0.11 0.28 53 Hotels & Restaurants - 0.26 - 54 Hotels & Restaurants - 0.30 55 Hotels & Restaurants - 0.30	26	Other Non-Metallic Mineral		-0.12			
28 Fabricated Metal 0.27 29 Machinery, nec. 0.22 30 Office, Accounting & Computing Machinery 0.23 31 Electrical Machinery & Apparatus, nec. 0.29 32 Radio, Television & Communication Equipment 3.05 34 Motor Vehicles, Trailers & Semi-Trailers -3.05 35 Other Transport Equipment -3.05 36 Maufacturing, nec. 0.09 37 Recycling 0.99 40 Electricity & Gas 0.99 41 Water Supply 0.41 52 Rotal Trade, except of Motor Vehicles & Motorcycles; Retail Sale of Fuel -0.11 0.28 53 Hotels & Retaurants 0.22 - - 54 Motor Vehicles & Motor Vehicles & Mot/cles; Repair of Household Goods - - 55 Hotels & Restaurants 0.26 - - 60 Other Mar Transport 0.21 - - 61 Other Air Transport 0.26 - - 62 Financial Intermediation, except Compulsory Social Security -	27	Basic Metals		0.08	0.34		
29 Machinery, nec. 0.52 -1.35 30 Office, Accounting & Computing Machinery 0.29 -1.35 31 Electrical Machinery & Apparatus, nec. 0.29	28	Fabricated Metal			0.27		
30 Office, Accounting & Computing Machinery 0.52 -1.55 31 Electrical Machinery & Apparatus, nec. 0.29 - 32 Radio, Television & Communication Equipment - - 34 Motor Vehicles, Trailers & Semi-Trailers - - 35 Other Transport Equipment - - - 36 Manufacturing, nec. - - - 37 Recycling - - - 40 Electricity & Gas - - - 41 Water Supply 0.41 - - 53 Rehain t. & Repair of Motor Vehicles & Motoreycles; Retail Sale of Fuel -0.11 - 0.28 54 Waterstamport -0.22 - - 0.28 55 Hotels & Restamants - - 0.26 60 Other Mater Transport - 0.21 - 61 Other Water Transport - 0.21 - 62 Financial Intermediation, except Insurance & Pension Funding -0.93 0.23 - 63 Other Aim Transport - 0.21 - 64 Post & Telecommunications - - - 75 <td>29</td> <td>Machinery, nec.</td> <td></td> <td></td> <td></td> <td></td> <td></td>	29	Machinery, nec.					
31 Electrical Machinery & Apparatus, nec. 0.29 32 Radio, Television & Communication Equipment	30	Office, Accounting & Computing Machinery			0.52	-1.35	
12 Radio, Television & Communication Equipment 33 Medical, Precision & Optical Instruments 34 Motor Vehicles, Trailers & Semi-Trailers 35 Other Transport Equipment -3.05 36 Manufacturing, nee. -0.09 37 Recycling -0.91 41 Water Supply 0.99 52 Construction 0.41 53 Sale, Maint, & Repair of Motor Vehicles & Motorcycles; Retail Sale of Fuel -0.11 0.28 54 Wholesale Trade & Commission Trade, except of Motor Vehicles & Mot/cles -0.22 0.28 55 Hotels & Restaurants -0.26 -0.11 60 Other Inland Transport -1.12 -0.26 61 Other Water Transport -1.12 -0.30 63 Other Water Transport 0.23 -0.14 74 Pede Kaiting Transp. Activities; Activities of Travel Agencies -0.21 -0.30 64 Insurance & Pension Funding -0.98 -0.73 0.23 75 Reciden Intermediation, except Compulsory Social Security <t< td=""><td>31</td><td>Electrical Machinery & Apparatus, nec.</td><td></td><td></td><td>0.29</td><td></td><td></td></t<>	31	Electrical Machinery & Apparatus, nec.			0.29		
33 Medical, Precision & Optical Instruments	32	Radio, Television & Communication Equipment					
44 Motor Vehicles, Trailers & Semi-Trailers -3.05 55 Other Transport Equipment -3.05 64 Manufacturing, nec. -0.09 78 Recycling 0.99 74 Electricity & Gas 0.99 75 Construction 0.01 0.28 75 Motor Support of Motor Vehicles & Motorcycles; Retail Sale of Fuel 0.11 0.28 75 Motesale Trade & Commission Trade, except of Motor Vehicles & Mot/cles -0.22 0.28 75 Hotels & Restaurants 0.21 0.26 76 Other Mare Transport 0.21 0.26 76 Other Air Transport 0.21 0.26 76 Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies 0.21 0.30 70 Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies 0.70 0.23 76 Activities Related to Financial Intermediation 0.36 0.79 0.23 71 Retrict Activities -1.12 1.12 1.13 76 Activities R	33	Medical, Precision & Optical Instruments					
35 Other Transport Equipment -3.05 36 Manufacturing, nec. -0.09 37 Recycling -0.11 40 Electricity & Gas 0.41 41 Water Supply 0.99 45 Construction 0.41 50 Sale, Maint & Repair of Motor Vehicles & Motorcycles; Retail Sale of Fuel -0.11 0.28 51 Wholesale Trade, except of Motor Vehicles & Mot/cles; Repair of Household Goods -0.21 0.28 55 Hotels & Restaurants 0.26 -0.21 0.26 60 Other Mater Transport 1.12 0.30 -0.30 61 Other Mater Transport 0.21 -0.33 0.23 62 Other Air Transport 0.21 -0.30 0.30 63 Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies 0.21 -0.30 64 Post & Telecommunications 0.30 0.30 -0.33 0.23 65 Financial Intermediation, except Insurance & Pension Funding -0.98 -0.73 0.24 70 Reatizate Activities -2.17 -7 -7.1	34	Motor Vehicles, Trailers & Semi-Trailers					
36 Manufacturing, nec. -0.09 37 Recycling -0.09 40 Electricity & Gas 0.99 41 Water Supply 0.99 52 Construction 0.41 53 Sale, Maint. & Repair of Motor Vehicles & Motorcycles; Retail Sale of Fuel -0.11 0.28 54 Wholesale Trade & Commission Trade, except of Motor Vehicles & Mot/cles -0.22 0.21 54 Retail Trade, except of Motor Vehicles & Mot/cles; Repair of Household Goods -0.23 0.28 55 Hotels & Restaurants 0.26 -0.20 -0.26 60 Other Inland Transport 0.26 -0.30 -0.30 61 Other Water Transport -0.11 -0.30 62 Other Air Transport -0.30 0.21 63 Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies -0.73 0.23 64 Post & Telecommunications -0.73 0.23 65 Financial Intermediation, except Compulsory Social Security -1.12 70 Realt Eate Activities -1.93 -1.93 71 Reting of Machine	35	Other Transport Equipment					-3.05
37 Recycling 0.99 40 Electricity & Gas 0.99 41 Water Supply 0.41 51 Sale, Maint. & Repair of Motor Vehicles & Motorcycles; Retail Sale of Fuel -0.11 0.28 51 Wholesale Trade & Commission Trade, except of Motor Vehicles & Mot/cles -0.22 -0.22 52 Retail Trade, except of Motor Vehicles & Mot/cles; Repair of Household Goods -0.26 55 Hotels & Restaurants 0.26 60 Other Inland Transport 0.26 71 Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies 0.21 74 Post & Telecommunications -0.73 0.23 75 Financial Intermediation, except Compulsory Social Security 0.36 -2.17 74 Real Estate Activities -2.17 -1.93 75 Relide Activities -1.93 -1.93 76 Computer & Related Activities -1.93 -1.93 75 Relide Activities -1.93 -1.93 76 Retaite Activities -0.14 -1.93 77 Renting of Machinery & Equipment -1.93 <t< td=""><td>36</td><td>Manufacturing, nec.</td><td></td><td></td><td></td><td>-0.09</td><td></td></t<>	36	Manufacturing, nec.				-0.09	
40 Electricity & Gas 0.99 41 Water Supply 0.99 45 Construction 0.41 51 Wholesale Trade & Commission Trade, except of Motor Vehicles & Mot/cles -0.22 0.28 51 Wholesale Trade, except of Motor Vehicles & Mot/cles; Repair of Household Goods -0.22 0.28 55 Hotels & Restaurants 0.26 0.26 60 Other Inland Transport -1.12 0.26 71 Other Air Transport -1.12 0.30 73 Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies 0.21 0.30 74 Post & Telecommunications -0.73 0.23 0.33 74 Post & Telecommunications, except Compulsory Social Security 0.30 0.79 0.33 75 Financial Intermediation, except Compulsory Social Security -1.33 0.32 75 Real Estate Activities -2.17 -1.33 -1.93 76 Reining of Machinery & Equipment -1.93 -1.93 77 Restarch & Disposin, Activities 0	37	Recycling					
41 Water Supply 0.99 45 Construction 0.41 50 Sale, Maint, & Repair of Motor Vehicles & Motorcycles; Retail Sale of Fuel -0.11 0.28 51 Wholesale Trade, & Commission Trade, except of Motor Vehicles & Mot/cles -0.22 - 52 Retail Trade, except of Motor Vehicles & Mot/cles; Repair of Household Goods - 0.26 53 Hotels & Restaurants 0.26 - 0.26 60 Other Inland Transport -1.12 0.30 61 Other Water Transport -0.21 - 62 Other Air Transport 0.30 0.21 63 Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies 0.21 - 64 Post & Telecommunications 0.23 0.23 - 65 Financial Intermediation, except Insurance & Pension Funding -0.98 0.79 0.21 66 Insurance & Pension Funding, except Compulsory Social Security - - - 71 Reale Estate Activities -2.17 - - - - 72 Computer & Related Activities 0.14 <td>40</td> <td>Electricity & Gas</td> <td></td> <td></td> <td></td> <td></td> <td></td>	40	Electricity & Gas					
45 Construction 0.41 50 Sale, Maint. & Repair of Motor Vehicles & Motorcycles; Retail Sale of Fuel -0.11 0.28 51 Wholesale Trade & Commission Trade, except of Motor Vehicles & Mot/cles -0.22 -0.22 52 Retail Trade, except of Motor Vehicles & Mot/cles; Repair of Household Goods -0.22 -0.22 52 Retail Trade, except of Motor Vehicles & Mot/cles; Repair of Household Goods -0.22 -0.26 54 Hotels & Restaurants 0.26 -1.12 -0.26 60 Other Vater Transport -1.12 0.30 61 Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies 0.21 -0.30 63 Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies -0.98 0.79 64 Post & Telecommunications -0.98 0.21	41	Water Supply				0.99	
50 Sale, Maint. & Repair of Motor Vehicles & Motorcycles; Retail Sale of Fuel -0.11 0.28 51 Wholesale Trade & Commission Trade, except of Motor Vehicles & Mot/cles -0.22 -0.22 52 Retail Trade, except of Motor Vehicles & Mot/cles; Repair of Household Goods -0.22 -0.22 55 Hotels & Restaurants 0.26 -0.21 60 Other Inland Transport 0.26 -0.30 61 Other Water Transport 0.30 -0.73 0.23 62 Other Mater Transport 0.21 -0.73 0.23 63 Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies -0.73 0.23 64 Post & Telecommunications -0.73 0.23 -0.79 65 Financial Intermediation, except Insurance & Pension Funding -0.98 0.79 -2.17 71 Real Estate Activities -2.17 -2.17 -1.193 72 Computer & Related Activities -1.93 -1.93 73 Research & Development -1.93 -1.93 74 Other Business Activities -0.04 0.01 75 Public	45	Construction			0.41		
51 Wholesale Trade & Commission Trade, except of Motor Vehicles & Mot/cless -0.22 52 Retail Trade, except of Motor Vehicles & Mot/cles: Repair of Household Goods -0.22 55 Hotels & Restaurants 0.26 60 Other Inland Transport 0.26 61 Other Water Transport 0.30 62 Other Air Transport 0.31 63 Other Supporting & Auxiliary Transp. Activities of Travel Agencies 0.21 64 Post & Telecommunications -0.73 0.23 65 Financial Intermediation, except Insurance & Pension Funding -0.98 0.79 66 Insurance & Pension Funding, except Compulsory Social Security -2.17 -1.12 67 Activities Related to Financial Intermediation 0.36 -2.17 71 Renting of Machinery & Equipment -1.93 72 Computer & Related Activities -1.93 73 Research & Development -1.93 74 Other Business Activities -0.04 0.01 75 Public Administration & Defence; Compulsory Social Security -0.13 -0.02 74 Other Business Activities <td< td=""><td>50</td><td>Sale, Maint. & Repair of Motor Vehicles & Motorcycles; Retail Sale of Fuel</td><td></td><td>-0.11</td><td></td><td></td><td>0.28</td></td<>	50	Sale, Maint. & Repair of Motor Vehicles & Motorcycles; Retail Sale of Fuel		-0.11			0.28
52 Retail Trade, except of Motor Vehicles & Mot/cles; Repair of Household Goods 55 Hotels & Restaurants 0.26 60 Other Inland Transport 0.26 61 Other Water Transport 0.30 62 Other Water Transport 0.30 63 Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies 0.21 64 Post & Telecommunications -0.73 0.23 65 Financial Intermediation, except Insurance & Pension Funding -0.98 0.79 66 Insurance & Pension Funding, except Compulsory Social Security -2.17 - 67 Activities Related to Financial Intermediation 0.36 - 78 Restate Activities -2.17 - 79 Reating of Machinery & Equipment - - 71 Renting of Machinery & Equipment - - 74 Other Business Activities 0.14 - 75 Public Administration & Defence; Compulsory Social Security 0.14 - 76 Education -0.04 0.01 - 77 Beducation -0.01 -	51	Wholesale Trade & Commission Trade, except of Motor Vehicles & Mot/cles		-0.22			
55 Hotels & Restaurants 0.26 60 Other Inland Transport -1.12 62 Other Water Transport 0.30 63 Other Air Transport 0.30 64 Post & Telecommunications 0.21 65 Financial Intermediation, except Insurance & Pension Funding -0.98 0.73 66 Insurance & Pension Funding, except Compulsory Social Security 0.36 112 67 Activities Related to Financial Intermediation 0.36 -2.17 112 70 Real Estate Activities -2.17 -1.12 -1.12 71 Renting of Machinery & Equipment -2.17 -1.12 -1.12 72 Computer & Related Activities -2.17 -1.12 -1.13 73 Research & Development -1.13 -1.13 74 Other Business Activities 0.14 -1.13 75 Public Administration & Similar Activities -0.04 0.01 76 Health & Social Work -0.13 -0.02 79 Sewage & Refuse Disposal, Sanitation & Similar Activities -0.61 -0.02 79 <td>52</td> <td>Retail Trade, except of Motor Vehicles & Mot/cles; Repair of Household Goods</td> <td></td> <td></td> <td></td> <td></td> <td></td>	52	Retail Trade, except of Motor Vehicles & Mot/cles; Repair of Household Goods					
60 Other Inland Transport 0.26 61 Other Water Transport -1.12 62 Other Air Transport 0.30 63 Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies 0.21 64 Post & Telecommunications -0.73 0.23 65 Financial Intermediation, except Insurance & Pension Funding -0.98 0.79 66 Insurance & Pension Funding, except Compulsory Social Security - - 67 Activities Related to Financial Intermediation 0.36 - - 68 Estate Activities -2.17 -	55	Hotels & Restaurants					
61 Other Water Transport -1.12 62 Other Air Transport 0.30 63 Other Supporting & Auxiliary Transp. Activities of Travel Agencies 0.21 64 Post & Telecommunications -0.73 0.23 65 Financial Intermediation, except Insurance & Pension Funding -0.98 0.79 66 Insurance & Pension Funding, except Compulsory Social Security 0.36 70 Real Estate Activities -2.17 71 Renting of Machinery & Equipment -2.17 72 Computer & Related Activities -2.17 73 Research & Development -1.93 74 Other Business Activities 0.14 75 Public Administration & Defence; Compulsory Social Security 0.14 76 Health & Social Work -0.13 -0.02 79 Sewage & Refuse Disposal, Sanitation & Similar Activities -0.61 -1.93 79 Kecreational, Cultural and Sporting Activities -0.61 -1.93 79 Recreational, Cultural and Sporting Activities -0.61 -1.93 70 Recreational, Cultural and Sporting Activities -0.61	60	Other Inland Transport				0.26	
62 Other Air Transport 0.30 63 Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies 0.21 64 Post & Telecommunications -0.73 0.23 65 Financial Intermediation, except Insurance & Pension Funding -0.98 0.79 66 Insurance & Pension Funding, except Compulsory Social Security 0.36 - 67 Activities Related to Financial Intermediation 0.36 - 70 Real Estate Activities -2.17 - 71 Renting of Machinery & Equipment -2.17 - 72 Computer & Related Activities -1.93 73 Research & Development -1.93 74 Other Business Activities 0.14 75 Public Administration & Defence; Compulsory Social Security 0.14 76 Education -0.04 0.01 75 Health & Social Work -0.13 -0.02 76 Sewage & Refuse Disposal, Sanitation & Similar Activities -0.61 - 77 Recreational, Cultural and Sporting Activities -0.61 - 78 Membership Organizations,	61	Other Water Transport			-1.12		
63Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies0.2164Post & Telecommunications-0.730.2365Financial Intermediation, except Insurance & Pension Funding-0.980.7966Insurance & Pension Funding, except Compulsory Social Security0.36-77Activities Related to Financial Intermediation0.36-70Real Estate Activities-2.17-71Renting of Machinery & Equipment1.9372Computer & Related Activities-1.9373Research & Development0.1474Other Business Activities0.1475Public Administration & Defence; Compulsory Social Security0.0180Education-0.040.0185Health & Social Work-0.13-0.0290Sewage & Refuse Disposal, Sanitation & Similar Activities-0.61-91Activities of Membership Organizations, nec92Other Service Activities93Other Service Activities	62	Other Air Transport					0.30
64Post & Telecommunications-0.730.2365Financial Intermediation, except Insurance & Pension Funding-0.980.7966Insurance & Pension Funding, except Compulsory Social Security0.36-71Activities Related to Financial Intermediation0.36-70Real Estate Activities-2.17-71Renting of Machinery & Equipment72Computer & Related Activities-1.9373Research & Development1.9374Other Business Activities0.1475Public Administration & Defence; Compulsory Social Security-0.040.0180Education-0.040.0185Health & Social Work-0.13-0.0290Sewage & Refuse Disposal, Sanitation & Similar Activities-0.61-91Activities of Membership Organizations, nec0.61-92Recreational, Cultural and Sporting Activities-0.61-93Other Service Activities	63	Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies				0.21	
65Financial Intermediation, except Insurance & Pension Funding-0.980.7966Insurance & Pension Funding, except Compulsory Social Security0.3670Real Estate Activities-2.1771Renting of Machinery & Equipment-2.1772Computer & Related Activities-1.9373Research & Development-1.9374Other Business Activities0.1475Public Administration & Defence; Compulsory Social Security-0.0480Education-0.0390Sewage & Refuse Disposal, Sanitation & Similar Activities-0.6191Activities of Membership Organizations, nec0.6192Recreational, Cultural and Sporting Activities-0.61	64	Post & Telecommunications			-0.73	0.23	
66Insurance & Pension Funding, except Compulsory Social Security67Activities Related to Financial Intermediation0.3670Real Estate Activities-2.1771Renting of Machinery & Equipment-2.1772Computer & Related Activities-1.9373Research & Development-1.9374Other Business Activities0.1475Public Administration & Defence; Compulsory Social Security-0.040.0180Education-0.03-0.0290Sewage & Refuse Disposal, Sanitation & Similar Activities-0.6191Activities of Membership Organizations, nec0.6192Recreational, Cultural and Sporting Activities-0.6193Other Service Activities-0.14	65	Financial Intermediation, except Insurance & Pension Funding	-0.98			0.79	
67Activities Related to Financial Intermediation0.3670Real Estate Activities-2.1771Renting of Machinery & Equipment-1.9372Computer & Related Activities-1.9373Research & Development0.1474Other Business Activities0.1475Public Administration & Defence; Compulsory Social Security0.0180Education-0.040.0185Health & Social Work-0.03-0.0290Sewage & Refuse Disposal, Sanitation & Similar Activities-0.6191Activities of Membership Organizations, nec0.6192Recreational, Cultural and Sporting Activities-0.61	66	Insurance & Pension Funding, except Compulsory Social Security					
70Real Estate Activities-2.1771Renting of Machinery & Equipment-1.9372Computer & Related Activities-1.9373Research & Development0.1474Other Business Activities0.1475Public Administration & Defence; Compulsory Social Security0.0180Education-0.0481Health & Social Work-0.1390Sewage & Refuse Disposal, Sanitation & Similar Activities-0.6191Activities of Membership Organizations, nec0.6192Recreational, Cultural and Sporting Activities-0.61	67	Activities Related to Financial Intermediation	0.36				
71Renting of Machinery & Equipment72Computer & Related Activities-1.9373Research & Development0.1474Other Business Activities0.1475Public Administration & Defence; Compulsory Social Security-0.040.0180Education-0.040.0185Health & Social Work-0.13-0.0290Sewage & Refuse Disposal, Sanitation & Similar Activities-0.6191Activities of Membership Organizations, nec0.6192Recreational, Cultural and Sporting Activities-0.6193Other Service Activities-0.51	70	Real Estate Activities			-2.17		
72Computer & Related Activities-1.9373Research & Development0.1474Other Business Activities0.1475Public Administration & Defence; Compulsory Social Security-0.0480Education-0.0485Health & Social Work-0.1390Sewage & Refuse Disposal, Sanitation & Similar Activities-0.6191Activities of Membership Organizations, nec0.6192Recreational, Cultural and Sporting Activities-0.5193Other Service Activities-0.51	71	Renting of Machinery & Equipment					
73Research & Development0.1474Other Business Activities0.1475Public Administration & Defence; Compulsory Social Security-0.040.0180Education-0.040.0185Health & Social Work-0.13-0.0290Sewage & Refuse Disposal, Sanitation & Similar Activities-0.61-0.6191Activities of Membership Organizations, nec0.61-0.6192Recreational, Cultural and Sporting Activities-0.61-0.6193Other Service Activities-0.61-0.61	72	Computer & Related Activities					-1.93
74Other Business Activities0.1475Public Administration & Defence; Compulsory Social Security-0.040.0180Education-0.040.0185Health & Social Work-0.13-0.0290Sewage & Refuse Disposal, Sanitation & Similar Activities-0.61-0.6191Activities of Membership Organizations, nec0.61-0.6192Recreational, Cultural and Sporting Activities-0.61-0.6193Other Service Activities-0.61-0.61	73	Research & Development					
75Public Administration & Defence; Compulsory Social Security80Education-0.040.0185Health & Social Work-0.13-0.0290Sewage & Refuse Disposal, Sanitation & Similar Activities-0.61-91Activities of Membership Organizations, nec92Recreational, Cultural and Sporting Activities93Other Service Activities	74	Other Business Activities				0.14	
80Education-0.040.0185Health & Social Work-0.13-0.0290Sewage & Refuse Disposal, Sanitation & Similar Activities-0.61-0.1391Activities of Membership Organizations, nec0.61-0.1392Recreational, Cultural and Sporting Activities-0.13-0.1393Other Service Activities-0.13-0.13	75	Public Administration & Defence; Compulsory Social Security					
85Health & Social Work-0.13-0.0290Sewage & Refuse Disposal, Sanitation & Similar Activities-0.61-0.6191Activities of Membership Organizations, nec0.61-0.6192Recreational, Cultural and Sporting Activities-0.61-0.6193Other Service Activities-0.61-0.61	80	Education		-0.04		0.01	
90Sewage & Refuse Disposal, Sanitation & Similar Activities-0.6191Activities of Membership Organizations, nec0.6192Recreational, Cultural and Sporting Activities-0.6193Other Service Activities-0.61	85	Health & Social Work		-0.13		-0.02	
 91 Activities of Membership Organizations, nec. 92 Recreational, Cultural and Sporting Activities 93 Other Service Activities 	90	Sewage & Refuse Disposal, Sanitation & Similar Activities	-0.61				
 92 Recreational, Cultural and Sporting Activities 93 Other Service Activities 	91	Activities of Membership Organizations, nec.					
93 Other Service Activities	92	Recreational, Cultural and Sporting Activities					
	93	Other Service Activities					

able A3.b. Statistically significant difference of 1995-2004 mark-up from 1981-1992 mark-up by sector and country

Notes: Differences presented are statistically significant at the 5% level (two-sided t-test, critical value ±2.074).

15 Food & Beverages 1.11 1.13 1.19 1.11 16 Tobacco 1.22 1.43 1.34 1.34 16 Tidexilles 1.16 1.10 1.12 1.16 18 Waring Appard, Dressing & Dying of Fur 1.05 1.14 1.20 1.14 19 Leather, leather and footwear 1.11 1.11 1.12 1.14 10 Act Wood & Cork 1.10 1.15 1.28 1.26 21 Printing, Publishing & Reproduction 1.19 1.16 1.35 1.14 22 Printing, Publishing & Reproduction 1.21 1.09 1.18 1.14 23 Cake, Refined Peratoum & Nuclear Fuel 1.24 1.09 1.16 1.25 24 Rubber & Plantics 1.19 1.16 1.23 1.26 25 Rubber & Plantics 1.19 1.16 1.23 1.26 26 Rubicrey, nec. 1.09 1.13 1.18 1.13 1.18 26 Office, Accounting & Communication Equipment 1.10 1.11 1.13	Code	Sector	Germany	France	Italy	Spain
16Tokeco1.321.431.441.2317Textiles1.161.101.211.1618Waring Apparel, Dressing & Dying of Fur1.111.111.121.201.4419Leather, leather and footwear1.111.111.121.201.4410Wood & Cork1.101.151.281.2612Pulp, Paper & Paper1.211.091.161.351.2621Pulp, Paper & Paper1.111.111.111.111.111.1122Printing, Philiking & Reproduction1.191.161.321.141.251.241.061.121.251.241.061.121.251.241.061.201.14	15	Food & Beverages	1.11	1.13	1.19	1.11
17Textiles1.161.101.211.1618Wearing Appard, Dressing & Dying of Fur1.051.141.201.1419Leadter, Leadter and forsovear1.101.151.281.2621Phring, Publishing & Reproduction1.291.201.251.081.371.1622Printing, Publishing & Reproduction1.241.091.061.161.241.091.181.1423Coke, Refined Peroleum & Nuclear Fuel1.211.091.181.141.201.241.241.251.251.251.251.241.251.241.251.241.251.241.251.24 </td <td>16</td> <td>Tobacco</td> <td>1.32</td> <td>1.43</td> <td>1.34</td> <td>1.23</td>	16	Tobacco	1.32	1.43	1.34	1.23
18 Waring Apparel, Dressing & Dying of Far 1.05 1.14 1.10 1.10 1.10 1.10 1.10 1.10 1.12 1.20 1.24 19 Leather, leather and footwart 1.11 1.10 1.15 1.28 1.26 21 Puip, Paper & Paper 1.25 1.08 1.37 1.26 22 Printing, Publishing & Reproduction 1.12 1.28 1.16 1.35 1.14 22 Coke, Refined Pertoleum & Nuclear Fuel 1.21 1.29 1.23 1.26 23 Ruber & Plastics 1.19 1.06 1.33 1.31 1.31 1.31 24 Policicard Metali 1.09 1.12 1.12 1.12 1.13 1.31 35 Bedricing Accounting Acomputing Machinery 1.12 1.12 1.13 1.14 1.30 36 Machinery, Accounting Se Semi-Trailers 1.10 1.11 1.35 1.16 37 Recycling 1.31 1.31 1.31 1.31 <	17	Textiles	1.16	1.10	1.21	1.16
19Leather, leather and footwear1.111.111.121.121.1420Wood & Ork & Cock1.101.151.281.2621Puip, Paper & Paper1.241.091.161.351.1422Printing, Publishing & Reproduction1.241.091.121.2523Robber & Plastics1.191.191.181.1424Chemicals & Chemical Products1.191.191.181.1425Rubber & Plastics1.191.161.291.2426Other Non-Metallic Mineral1.001.121.121.291.331.2027Basic Metals1.051.171.331.201.341.341.341.3428Metals1.051.171.331.201.351.151.351.3529Machinery, nec.1.181.131.311.091.241.131.341.0920Radio, Television & Computing Machinery1.101.111.351.151.151.1520MetalsPrecision & Optical Instruments1.101.111.241.2421Medical, Precision & Optical Instruments1.131.001.201.1423Madia Chrigh, ecc.1.131.101.201.141.3024Matia Chrigh, ecc.1.131.141.301.311.0225Matia Chrigh, ecc.1.131.141.341.321	18	Wearing Apparel, Dressing & Dying of Fur	1.05	1.14	1.20	1.34
20Wood & of Wood & Cork1.101.151.281.2621Puting, Polper & Paper1.281.081.371.2621Puting, Polbishing & Reproduction1.191.181.1423Coke, Refined Petroleum & Nuclear Fuel1.211.091.181.1624Chemical & Chemical Poducts1.211.091.181.1425Robber & Plastics1.191.161.231.2426Robber & Plastics1.091.161.331.2027Basic Metals1.091.121.241.331.2028Fobricated Metal1.091.121.231.2429Machinery, nec.1.091.121.231.231.3330Office, Accounting & Computing Machinery1.121.141.141.1431Iclearcian Machinery & Sampartus, nec.1.181.131.121.471.1432Radio, Television & Communication Equipment1.091.121.471.1433Medical, Precision & Semi-Trailers1.091.121.471.1434Motor Vehicles, Trailera & Semi-Trailers1.131.101.241.4035Other Transport Equipment1.231.221.411.3036Construction1.231.241.461.351.3335Sale, Maint, & Repair of Motor Vehicles & Motorles & Motorles1.391.151.301.34 <trr>36Other Tran</trr>	19	Leather, leather and footwear	1.11	1.11	1.20	1.14
21Pulp, Paper & Paper1.251.081.371.2622Printing, Publishing & Reproduction1.191.161.381.1623Coke, Refined Perroleum & Nuclear Fuel1.211.091.081.1224Chemicals & Chemical Products1.191.181.1425Rubber & Plastics1.191.181.1426Other Non-Metallis Mineral1.091.061.321.2627Basic Metals1.091.061.321.2628Fabricated Metal1.051.171.331.2029Machinery, nec.1.181.131.311.0920Radio, Television & Computing Machinery1.101.111.151.1521Radio, Television & Computing Machinery1.101.111.201.1821Radio, Television & Computing Machinery1.131.001.211.4721Radio, Television & Computing Machinery1.131.101.201.1423Madio, Precision & Optical Instruments1.001.111.201.1824Mator Vehicles, Trailers & Semi-Trailers1.131.101.201.1425Other Transport Equipment1.180.981.231.0226Matta Kapply1.231.221.141.3027Calcuitrig, nec.1.241.401.4028Constructing, nec.1.241.401.4629Constructing, nec. </td <td>20</td> <td>Wood & of Wood & Cork</td> <td>1.10</td> <td>1.15</td> <td>1.28</td> <td>1.26</td>	20	Wood & of Wood & Cork	1.10	1.15	1.28	1.26
22 Printing, Publishing & Reproduction 1.19 1.16 1.35 1.14 23 Coke, Refined Petroleum & Nuclear Fuel 1.24 1.09 1.12 1.25 24 Chemical & Chemical Products 1.19 1.19 1.19 1.18 1.14 25 Rubber & Plastics 1.19 1.16 1.23 1.24 26 Other Non- Metallic Mineral 1.05 1.17 1.33 1.20 27 Basic Metals 1.05 1.17 1.33 1.20 27 Machinery, nec. 1.18 1.18 1.18 1.18 20 Office, Accounting & Computing Machinery 1.10 1.11 1.25 1.15 21 Radio, Television & Communication Equipment 1.10 1.10 1.20 1.18 23 Medical, Precision & Communication Equipment 1.18 0.98 1.23 1.02 24 Matorizang, nec. 1.13 1.27 1.21 1.04 25 Other Transport Equipment 1.20 1.24 1.43 1.30 26 Charuting, nec. 1.20	21	Pulp, Paper & Paper	1.25	1.08	1.37	1.26
23 Coke, Refined Petroleum & Nuckar Fuel 1.24 1.09 1.06 1.16 24 Chemicals & Chemical Products 1.21 1.09 1.18 1.14 25 Rubber & Phatics 1.20 1.16 1.29 1.24 26 Other Non Metallic Mineral 1.00 1.13 1.18 1.14 27 Basic Metals 1.19 1.06 1.22 1.24 27 Basic Metal 1.09 1.13 1.18 1.18 1.18 28 Fabricated Metal 1.09 1.12 1.12 1.29 1.43 30 Office, Accounting & Computing Machinery 1.10 1.11 1.35 1.15 31 Bedicia, Tervision & Communication Equipment 1.10 1.11 1.13 1.10 32 Radio, Telvision & Communication Equipment 1.18 1.13 1.02 1.14 34 Motor Vehicles, Trailers & Semi-Trailers 1.13 1.10 1.24 1.44 35 Other Trasport Equipment 1.23	22	Printing, Publishing & Reproduction	1.19	1.16	1.35	1.14
24Chemical Poducts1.211.091.121.121.1225Rubber & Plastics1.191.191.181.1426Other Non-Metallic Mineral1.201.161.221.2427Basic Metals1.191.051.171.331.2028Fabricated Metal1.051.171.331.2029Machinery, nec.1.121.121.291.4330Office, Accounting Computing Machinery1.121.121.251.4331Electrical Machinery & Apparatus, nec.1.181.131.101.201.1831Medica, Precision & Optical Instruments1.131.101.201.1834Motor Vehicles, Trailers & Semi Trailers1.131.101.201.1835Other Transport Equipment1.161.271.211.1440Electricity & Gas1.411.401.411.3041Water Supply1.721.021.321.3350Sale, Maint, & Repair of Motor Vehicles & Motorcycles; Retail Sale of Fuel1.451.451.451.4451Wholesale Trade, except of Motor Vehicles & Motorcycles; Retail Sale of Fuel1.451.451.461.2052Retail Trade, except of Motor Vehicles & Motorcycles; Retail Sale of Fuel1.451.451.461.2052Hotle & Retaurants1.101.241.401.261.321.561.5053Hotle & Reta	23	Coke, Refined Petroleum & Nuclear Fuel	1.24	1.09	1.06	1.16
25Rubber & Plastics1.191.181.1426Other Non-Metallic Mineral1.201.161.291.2427Basic Metals1.091.061.321.2628Fabricated Metal1.091.131.181.1829Machinery, nec.1.091.131.181.1830Office, Accounting & Computing Machinery1.121.121.291.4331Electrical Machinery & Apparatus, nec.1.181.131.101.111.351.1532Radio, Television & Orpical Instruments1.091.131.101.141.4334Motor Vehicles, Trainers & Semi-Trailers1.180.981.231.021.1435Other Transport Equipment1.180.981.231.021.141.3036Manufacturing, nec.1.161.271.211.041.3041Water Supply1.721.021.141.3041Water Supply1.721.021.141.3052Recycling1.461.451.241.3453Motor Vehieles & Motorcycles; Retail Sale of Fuel1.451.451.2454Wholesale Trade & Communication Trade, except of Motor Vehieles & Motorcycles; Retail Sale of Fuel1.451.441.3054Hotes & Restaurant1.101.241.401.2655Hotes & Restaurant1.161.131.571.521.5666 </td <td>24</td> <td>Chemicals & Chemical Products</td> <td>1.21</td> <td>1.09</td> <td>1.12</td> <td>1.25</td>	24	Chemicals & Chemical Products	1.21	1.09	1.12	1.25
26Other Non-Metallic Mineral1.201.161.291.2427Basic Metals1.191.061.321.3628Fabricated Metal1.051.171.331.2029Machinery, nec.1.091.131.141.1830Office, Accounting & Computing Machinery1.121.121.291.4331Electrical Machinery & Apparatus, nec.1.181.101.111.351.1532Radio, Television & Communication Equipment1.101.111.321.1334Motor Vehicles, Trailers & Semi-Trailers1.131.101.201.1835Other Transport Equipment1.161.271.211.0436Manufacturing, nec.1.131.101.201.1437Recycling1.231.271.211.0436Construction1.201.261.321.1337Recycling1.231.271.211.0438Construction1.201.261.321.3139Sale, Maint. & Repair of Motor Vehicles & Motor Vehicles & Moticles1.391.261.3230Sale, Maint. & Repair of Motor Vehicles & Moticles & Moticles1.391.261.321.3130Sale, Maint & Repair of Motor Vehicles & Moticles & Moticles1.391.251.501.52310Other Transport1.311.471.441.401.26321Other Mare Transport <t< td=""><td>25</td><td>Rubber & Plastics</td><td>1.19</td><td>1.19</td><td>1.18</td><td>1.14</td></t<>	25	Rubber & Plastics	1.19	1.19	1.18	1.14
27Basic Metals1.191.061.321.3628Fabricated Metal1.051.171.331.2029Machinery, nec.1.091.121.121.121.1331Electrical Machinery & Apparatus, nec.1.181.181.131.311.0921Radio, Television & Communication Equipment1.101.101.121.171.1434Motor Vehicles, Trailers & Semi-Trailers1.131.001.201.1835Other Transport Equipment1.180.981.231.021.1636Manufacturing, nec.1.161.271.211.0437Recycling1.231.271.211.0440Electricity & Gas1.411.401.141.3041Water Supply1.721.221.131.3050Sale, Maint & Repair of Motor Vehicles & Motoreycles; Retail Sale of Fuel1.451.451.4551Hode's & Restaurants1.091.221.501.5252Hole's & Restaurants1.091.241.301.5253Hole's & Restaurants1.681.681.441.401.4154Other Vaner Transport1.161.661.531.5155Hole's Restaurants1.591.541.541.451.4564Post & Telecommunications1.521.581.561.5075Hole's Restaurante1.791.64	26	Other Non-Metallic Mineral	1.20	1.16	1.29	1.24
28Fabricated Metal1.051.171.331.2029Machinery, nec.1.091.131.181.1830Office, Accounting & Computing Machinery1.121.121.291.4331Electrical Machinery & Apparatus, nec.1.101.111.351.1532Radio, Television & Optical Instruments1.091.111.351.1633Medical, Precision & Optical Instruments1.091.121.471.1434Motor Vehicles, Trailers1.131.101.201.1835Other Transport Equipment1.161.271.211.1636Manufacturing, nec.1.161.271.211.1637Recycling1.231.201.141.3041Water Supply1.721.021.141.3041Water Supply1.721.021.411.3042Construction1.201.261.321.1353Sale, Maint & Repair of Motor Vehicles & Motorcycles; Retail Sale of Fuel1.451.501.4354Water Supply1.721.021.441.2655Hotels & Restaurants1.101.241.401.2660Other Mater Transport1.131.661.301.5255Hotels & Restaurants1.101.241.401.2661Other Supporting & Auxiliary Transp. Activities of Tavel Agencies1.091.551.5662 <td>27</td> <td>Basic Metals</td> <td>1.19</td> <td>1.06</td> <td>1.32</td> <td>1.36</td>	27	Basic Metals	1.19	1.06	1.32	1.36
29Machinery, nec.1.091.131.181.1830Office, Accounting & Computing Machinery1.121.121.291.4331Electrical Machinery & Apparatus, nec.1.181.101.111.351.1532Radio, Television & Communication Equipment1.101.111.351.1434Motor Vehicles, Trailers & Semi-Trailers1.131.101.201.1835Other Transport Equipment1.161.271.211.0436Mandraturing, nec.1.231.221.211.0440Electricity & Gas1.411.401.141.3041Water Supply1.221.261.131.3050Sale, Maint, & Repair of Motor Vehicles & Motoreycles; Retail Sale of Fuel1.451.451.4551Wholesale Trade & Commission Trade, except of Motor Vehicles & Mot/cles1.391.151.501.4352Retail Trade, except of Motor Vehicles & Mot/cles; Retail Sale of Fuel1.461.491.241.4051Wholesale Trade & Commission Trade, except of Motor Vehicles & Mot/cles1.101.241.401.2652Hotale & Restaurants1.091.251.501.521.501.5254Hotale & Restaurants1.091.241.401.2655Hotale & Restaurants1.691.351.381.6264Other Mater Transport1.681.081.451.4575O	28	Fabricated Metal	1.05	1.17	1.33	1.20
30Office, Accounting & Computing Machinery1.121.121.221.4331Electrical Machinery & Appartus, nec.1.181.131.131.0932Radio, Television & Communication Equipment1.101.101.121.471.1434Motor Vehicles, Trailers & Semi-Trailers1.131.101.201.1835Other Transport Equipment1.180.981.231.0236Manufacturing, nec.1.161.231.271.211.1640Electricity & Gas1.411.401.441.3041Water Supply1.721.021.141.3041Water Supply1.721.021.141.3052Construction1.201.451.451.4553Sale, Maint, & Repair of Motor Vehicles & Motorcycles; Retail Sale of Fuel1.451.451.4554Wholesale Trade & Commission Trade, except of Motor Vehicles & Mot/Cles1.391.151.501.4355Hotls & Restaurants1.101.241.401.261.5256Other Inland Transport1.681.081.441.0757Other Water Transport1.681.081.621.6256Financial Intermediation1.511.581.6257Indexenter & Pension Funding1.891.471.641.2958Hotls & Restaurants1.101.061.831.6259Financial Int	29	Machinery, nec.	1.09	1.13	1.18	1.18
31Electrical Machinery & Apparatus, nec.1.181.131.111.131.1932Radio, Television & Communication Equipment1.001.111.351.1533Medical, Precision & Optical Instruments1.091.121.141.1434Motor Vchicles, Trailers & Semi-Trailers1.131.101.201.121.1635Other Transport Equipment1.180.981.231.021.1636Manufacturing, nec.1.161.271.211.1637Recycling1.231.201.141.3040Electricity & Gas1.411.401.141.3041Water Supply1.221.261.321.1350Sale, Maint. & Repair of Motor Vchicles & Motoreycles; Retail Sale of Fuel1.451.451.4551Wholesale Trade & Commission Trade, except of Motor Vchicles & Mot/cles1.301.121.521.5052Hotel's & Restaurants1.001.241.401.5253Hotel's & Restaurants1.011.241.401.5264Other Mater Transport1.131.271.521.5065Financial Intermediation1.521.551.381.6264Post & Telecommunications1.521.551.381.6265Financial Intermediation, except Instrance & Pension Funding1.891.471.461.2970Real Estate Activities1.871.32 <td< td=""><td>30</td><td>Office, Accounting & Computing Machinery</td><td>1.12</td><td>1.12</td><td>1.29</td><td>1.43</td></td<>	30	Office, Accounting & Computing Machinery	1.12	1.12	1.29	1.43
32Radio, Television & Communication Equipment1.001.111.351.1533Medical, Precision & Optical Instruments1.091.121.471.1434Motor Vehicles, Trailers & Semi-Trailers1.131.101.201.1835Other Transport Equipment1.161.271.211.1637Recycling1.231.271.211.0440Electricity & Gas1.411.401.141.3041Water Supply1.721.021.131.3150Sale, Maint & Repair of Motor Vehicles & Motoreycles; Retail Sale of Fuel1.451.451.4451Wholesale Trade & Commission Trade, except of Motor Vehicles & Mot/cles1.391.151.501.4352Retail Trade, except of Motor Vehicles & Mot/cles; Repair of Household Goods1.121.251.901.5255Hotels & Restaurants1.101.241.401.401.4060Other Transport1.131.271.521.5061Other Water Transport1.681.081.841.0762Other Air Transport1.681.091.351.661.3063Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies1.091.351.661.3064Post & Telecommunication, except Insurance & Pension Funding1.871.221.171.6170Real State Activities3.293.869.153.50	31	Electrical Machinery & Apparatus, nec.	1.18	1.13	1.31	1.09
33Medical, Precision & Optical Instruments1.091.121.471.1434Motor Vehicles, Trailers & Semi-Trailers1.131.101.201.1835Other Transport Equipment1.180.981.231.211.1636Manufacturing, nec.1.231.271.211.1640Electricity & Gas1.411.401.141.3041Water Supply1.721.021.141.3045Construction1.201.451.451.4550Sale, Maint. & Repair of Motor Vehicles & Motoreycles; Retail Sale of Fuel1.451.451.4551Wholesale Trade & Commission Trade, except of Motor Vehicles & Mot/cles1.391.151.501.4352Retail Trade, except of Motor Vehicles & Mot/cles; Repair of Household Goods1.121.251.901.5255Hotels & Restaurants1.001.241.401.2660Other Mater Transport1.161.061.831.1561Other Vater Transport1.161.061.831.1562Other Air Transport1.681.491.401.2463Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies1.091.351.6664Post & Telecommunications1.511.381.621.6170Real Estate Activities0.521.371.521.5571Retide Activities1.241.471.60 <t< td=""><td>32</td><td>Radio, Television & Communication Equipment</td><td>1.10</td><td>1.11</td><td>1.35</td><td>1.15</td></t<>	32	Radio, Television & Communication Equipment	1.10	1.11	1.35	1.15
34Motor Vehicles, Trailers & Semi-Trailers1.131.101.201.1835Other Transport Equipment1.180.981.231.0236Manufacturing, nec.1.161.271.211.1637Recycling1.231.271.211.0440Electricity & Gas1.411.301.321.3741Water Supply1.721.021.141.3042Construction1.201.261.321.1350Sale, Maint & Repair of Motor Vehicles & Motorycles; Retail Sale of Fuel1.451.451.4551Wholesale Trade & Commission Trade, except of Motor Vehicles & Mot/cles1.321.501.5252Retail Trade, except of Motor Vehicles & Mot/cles; Repair of Household Goods1.121.401.2653Hotels & Restaurants1.001.241.401.2664Other Vater Transport1.631.641.071.6674Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies1.091.351.6675Financial Intermediation1.511.661.341.5076Financial Intermediation1.511.461.2976Financial Intermediation1.511.461.2976Financial Intermediation1.511.381.7077Real Eate Activities1.871.222.171.3778Research & Development1.111.102.40 <td>33</td> <td>Medical, Precision & Optical Instruments</td> <td>1.09</td> <td>1.12</td> <td>1.47</td> <td>1.14</td>	33	Medical, Precision & Optical Instruments	1.09	1.12	1.47	1.14
35Other Transport Equipment1.180.981.231.0236Manufacturing, nec.1.161.271.211.1637Recycling1.231.271.211.1440Electricity & Gas1.411.401.431.4441Water Supply1.721.021.141.3045Construction1.201.261.321.1350Sale, Maint & Repair of Motor Vehicles & Motor Vehicles & Mot/cles1.391.151.451.4551Wholesale Trade & Commission Trade, except of Motor Vehicles & Mot/cles1.101.221.901.5255Hotels & Restaurants1.101.241.401.2660Other Inland Transport1.131.271.521.5061Other Water Transport1.681.081.841.0762Other Air Transport1.661.831.151.5663Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies1.091.351.6664Post & Telecommunications1.521.551.381.6265Financial Intermediation, except Insurance & Pension Funding1.891.471.461.2966Insurance & Pension Funding, except Compulsory Social Security1.121.194.661.0471Real Estate Activities1.871.222.171.3772Computer & Related Activities1.871.222.171.37	34	Motor Vehicles, Trailers & Semi-Trailers	1.13	1.10	1.20	1.18
36Manufacturing, nec.1.161.271.211.1637Recycling1.231.271.211.0440Electricity & Gas1.411.401.141.3041Water Supply1.721.021.141.3042Construction1.201.261.321.1353Sale, Maint & Repair of Motor Vehicles & Motorcycles; Retail Sale of Fuel1.451.451.451.2451Wholesale Trade & Commission Trade, except of Motor Vehicles & Mot/cles1.391.151.501.4352Retail Trade, except of Motor Vehicles & Mot/cles; Repair of Household Goods1.121.241.401.2660Other Inland Transport1.101.241.401.2661Other Auer Transport1.161.061.831.1562Other Auri Transport1.161.061.831.1563Other Supporting & Auxiliary Transp. Activities of Travel Agencies1.091.351.661.3064Post & Telecommunications1.521.551.381.6265Financial Intermediation, except Insurance & Pension Funding1.891.471.461.2470Real Estate Activities3.293.869.153.5071Renting of Machinery & Equipment2.942.032.411.7772Computer & Related Activities1.821.171.601.2473Research & Development1.811.82	35	Other Transport Equipment	1.18	0.98	1.23	1.02
37Recycling1.231.271.211.0440Electricity & Gas1.411.401.141.3041Water Supply1.721.021.141.3041Water Supply1.721.021.141.3045Construction1.201.261.321.1350Sale, Maint, & Repair of Motor Vehicles & Motoreycles; Retail Sale of Fuel1.451.451.4551Wholesale Trade, except of Motor Vehicles & Mot/cles1.121.251.501.5252Retail Trade, except of Motor Vehicles & Mot/cles; Repair of Household Goods1.121.241.401.2660Other Inland Transport1.131.271.521.501.5161Other Water Transport1.681.081.841.0762Other Air Transport1.661.301.511.381.6263Financial Intermediation, except Insurance & Pension Funding1.891.471.461.2964Post & Telecommunications1.511.381.701.6170Real Estate Activities3.293.869.153.5071Research & Development1.111.191.402.4472Computer & Related Activities1.871.222.171.3773Research & Development1.121.194.661.2474Other Buisness Activities1.821.171.601.2473Public Administra	36	Manufacturing, nec.	1.16	1.27	1.21	1.16
40Electricity & Gas1.411.401.141.3041Water Supply1.721.021.141.3045Construction1.201.261.321.1350Sale, Maint & Repair of Motor Vehicles & Motorcycles; Retail Sale of Fuel1.451.451.451.4351Wholesale Trade & Commission Trade, except of Motor Vehicles & Mot/cles1.391.151.501.4352Retail Trade, except of Motor Vehicles & Mot/cles; Repair of Household Goods1.121.201.901.5255Hotels & Restaurants1.101.241.401.2660Other Inland Transport1.131.271.521.5061Other Water Transport1.681.081.841.0762Other Air Transport1.161.061.831.1563Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies1.091.351.661.3064Post & Telecommunications1.521.591.381.611.0470Reale act Activities3.293.869.153.5071Renting of Machinery & Equipment2.942.032.411.7772Computer & Related Activities1.871.222.171.3773Research & Development1.111.102.402.4074Other Business Activities1.821.721.241.8775Public Administration & Defence; Compulsory Social Secu	37	Recycling	1.23	1.27	1.21	1.04
41Water Supply1.721.021.141.3045Construction1.201.261.321.1350Sale, Maint. & Repair of Motor Vehicles & Motorcycles; Retail Sale of Fuel1.451.451.451.4551Wholesale Trade & Commission Trade, except of Motor Vehicles & Mot/cles1.391.151.501.4352Retail Trade, except of Motor Vehicles & Mot/cles; Repair of Household Goods1.121.221.901.5255Hotels & Restaurants1.101.241.401.2660Other Inland Transport1.131.061.831.1561Other Water Transport1.161.061.831.1562Other Mater Transport1.161.061.831.1563Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies1.091.351.661.3064Post & Telecommunications1.521.551.381.6265Financial Intermediation, except Insurance & Pension Funding1.891.471.461.2966Insurance & Pension Funding, except Compulsory Social Security1.121.194.661.0470Real Estate Activities3.293.869.153.5071Renting of Machinery & Equipment1.811.102.402.1872Ouber Business Activities1.821.171.601.2473Research & Development1.111.191.171.20 <t< td=""><td>40</td><td>Electricity & Gas</td><td>1.41</td><td>1.40</td><td>1.14</td><td>1.30</td></t<>	40	Electricity & Gas	1.41	1.40	1.14	1.30
45Construction1.201.261.321.1350Sale, Maint. & Repair of Motor Vehicles & Motorcycles; Retail Sale of Fuel1.451.451.451.4551Wholesale Trade & Commission Trade, except of Motor Vehicles & Mot/cles1.391.151.501.4352Retail Trade, except of Motor Vehicles & Mot/cles; Repair of Household Goods1.121.251.901.5255Hotels & Restaurants1.101.241.401.2660Other Inland Transport1.681.081.841.0761Other Water Transport1.661.061.831.1563Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies1.091.351.661.3064Post & Telecommunications1.521.551.381.6265Financial Intermediation, except Insurance & Pension Funding1.891.471.461.2966Insurance & Pension Funding, except Compulsory Social Security1.121.194.661.0470Real Estate Activities3.293.869.153.503.5071Renting of Machinery & Equipment2.942.032.411.7772Computer & Related Activities1.821.171.601.2473Research & Development1.111.191.171.2074Other Business Activities1.821.701.611.2475Public Administration & Defence; Compulsory Social Security	41	Water Supply	1.72	1.02	1.14	1.30
50Sale, Maint. & Repair of Motor Vehicles & Motorcycles; Retail Sale of Fuel1.451.451.451.451.4151Wholesale Trade & Commission Trade, except of Motor Vehicles & Mot/cles1.391.151.501.4352Retail Trade, except of Motor Vehicles & Mot/cles; Repair of Household Goods1.121.251.901.5255Hotels & Restaurants1.101.241.401.2660Other Inland Transport1.131.271.521.5061Other Water Transport1.681.081.841.0762Other Mater Transport1.161.061.831.1563Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies1.091.351.661.3064Post & Telecommunications1.521.551.381.6265Financial Intermediation, except Insurance & Pension Funding1.891.471.461.2966Insurance & Pension Funding, except Compulsory Social Security1.511.381.701.6170Real Estate Activities3.293.869.153.5071Renting of Machinery & Equipment2.942.032.411.7772Computer & Related Activities1.821.171.601.2474Other Business Activities1.821.171.601.2475Public Administration & Defence; Compulsory Social Security1.111.191.171.20 <trr<tr>73Research</trr<tr>	45	Construction	1.20	1.26	1.32	1.13
51Wholesale Trade & Commission Trade, except of Motor Vehicles & Mot/cless1.391.151.501.4352Retail Trade, except of Motor Vehicles & Mot/cless; Repair of Household Goods1.121.251.901.5255Hotels & Restaurants1.101.241.401.2660Other Inland Transport1.131.271.521.5061Other Water Transport1.681.081.841.0762Other Air Transport1.161.061.831.1563Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies1.091.351.661.3064Post & Telecommunications1.521.551.381.6265Financial Intermediation, except Insurance & Pension Funding1.891.471.461.2966Insurance & Pension Funding, except Compulsory Social Security1.111.131.271.5271Renting of Machinery & Equipment2.942.032.411.7772Computer & Related Activities1.871.222.171.3773Research & Development1.111.102.402.1874Other Business Activities1.821.171.601.2475Public Administration & Defence; Compulsory Social Security1.111.191.171.2073Research & Development1.111.102.402.1874Other Business Activities1.251.201.201.18<	50	Sale, Maint. & Repair of Motor Vehicles & Motorcycles; Retail Sale of Fuel	1.45	1.45	1.45	1.24
52 Retail Trade, except of Motor Vehicles & Mot/cles; Repair of Household Goods 1.12 1.25 1.90 1.52 55 Hotels & Restaurants 1.10 1.24 1.40 1.26 60 Other Inland Transport 1.13 1.27 1.52 1.50 61 Other Water Transport 1.68 1.08 1.84 1.07 62 Other Air Transport 1.16 1.06 1.83 1.15 63 Other Supporting & Auxiliary Transp. Activities of Travel Agencies 1.09 1.35 1.66 1.30 64 Post & Telecommunications 1.52 1.55 1.38 1.62 65 Financial Intermediation, except Insurance & Pension Funding 1.89 1.47 1.46 1.29 66 Insurance & Pension Funding, except Compulsory Social Security 1.12 1.19 4.66 1.04 70 Real Estate Activities 3.29 3.86 9.15 3.50 71 Renting of Machinery & Equipment 2.94 2.03 2.41 1.77 72 Computer & Related Activities 1.82 1.17 1.60 1.24	51	Wholesale Trade & Commission Trade, except of Motor Vehicles & Mot/cles	1.39	1.15	1.50	1.43
55Hotels & Restaurants1.101.241.401.2660Other Inland Transport1.131.271.521.5061Other Water Transport1.681.081.841.0762Other Air Transport1.161.061.831.1563Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies1.091.351.661.3064Post & Telecommunications1.521.551.381.6265Financial Intermediation, except Insurance & Pension Funding1.891.471.461.2966Insurance & Pension Funding, except Compulsory Social Security1.121.194.661.0467Activities Related to Financial Intermediation1.511.381.701.6170Real Estate Activities3.293.869.153.5071Renting of Machinery & Equipment2.942.032.411.7772Computer & Related Activities1.821.171.601.2473Research & Development1.111.102.402.1874Other Business Activities1.821.171.601.2475Public Administration & Defence; Compulsory Social Security1.111.191.171.2080Education1.051.221.201.1890Sewage & Refuse Disposal, Sanitation & Similar Activities1.441.651.721.2491Activities of Membership Organizat	52	Retail Trade, except of Motor Vehicles & Mot/cles; Repair of Household Goods	1.12	1.25	1.90	1.52
60 Other Inland Transport 1.13 1.27 1.52 1.50 61 Other Water Transport 1.68 1.08 1.84 1.07 62 Other Air Transport 1.16 1.06 1.83 1.15 63 Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies 1.09 1.35 1.66 1.30 64 Post & Telecommunications 1.52 1.55 1.38 1.62 65 Financial Intermediation, except Insurance & Pension Funding 1.89 1.47 1.46 1.29 66 Insurance & Pension Funding, except Compulsory Social Security 1.12 1.19 4.66 1.04 67 Activities Related to Financial Intermediation 1.51 1.38 1.70 1.61 70 Real Estate Activities 3.29 3.86 9.15 3.50 71 Renting of Machinery & Equipment 2.94 2.03 2.41 1.77 72 Computer & Related Activities 1.87 1.22 2.17 1.37 73 Research & Development 1.11 1.10 2.40 2.18	55	Hotels & Restaurants	1.10	1.24	1.40	1.26
61 Other Water Transport 1.68 1.08 1.84 1.07 62 Other Air Transport 1.16 1.06 1.83 1.15 63 Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies 1.09 1.35 1.66 1.30 64 Post & Telecommunications 1.52 1.55 1.38 1.62 65 Financial Intermediation, except Insurance & Pension Funding 1.89 1.47 1.46 1.29 66 Insurance & Pension Funding, except Compulsory Social Security 1.12 1.19 4.66 1.04 67 Activities Related to Financial Intermediation 1.51 1.38 1.70 1.61 70 Real Estate Activities 3.29 3.86 9.15 3.50 71 Renting of Machinery & Equipment 2.94 2.03 2.41 1.77 72 Computer & Related Activities 1.87 1.22 2.17 1.37 73 Research & Development 1.11 1.10 2.40 2.18 74 Other Business Activities 1.82 1.17 1.60 1.24 <td>60</td> <td>Other Inland Transport</td> <td>1.13</td> <td>1.27</td> <td>1.52</td> <td>1.50</td>	60	Other Inland Transport	1.13	1.27	1.52	1.50
62 Other Air Transport 1.16 1.06 1.83 1.15 63 Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies 1.09 1.35 1.66 1.30 64 Post & Telecommunications 1.52 1.55 1.38 1.62 65 Financial Intermediation, except Insurance & Pension Funding 1.89 1.47 1.46 1.29 66 Insurance & Pension Funding, except Compulsory Social Security 1.12 1.19 4.66 1.04 67 Activities Related to Financial Intermediation 1.51 1.38 1.70 1.61 70 Real Estate Activities 3.29 3.86 9.15 3.50 71 Renting of Machinery & Equipment 2.94 2.03 2.41 1.77 72 Computer & Related Activities 1.87 1.22 2.17 1.37 73 Research & Development 1.11 1.10 2.40 2.18 74 Other Business Activities 1.82 1.17 1.60 1.24 75 Public Administration & Defence; Compulsory Social Security 1.11 1.19 <td< td=""><td>61</td><td>Other Water Transport</td><td>1.68</td><td>1.08</td><td>1.84</td><td>1.07</td></td<>	61	Other Water Transport	1.68	1.08	1.84	1.07
63 Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies 1.09 1.35 1.66 1.30 64 Post & Telecommunications 1.52 1.55 1.38 1.62 65 Financial Intermediation, except Insurance & Pension Funding 1.89 1.47 1.46 1.29 66 Insurance & Pension Funding, except Compulsory Social Security 1.12 1.19 4.66 1.04 67 Activities Related to Financial Intermediation 1.51 1.38 1.70 1.61 70 Real Estate Activities 3.29 3.86 9.15 3.50 71 Renting of Machinery & Equipment 2.94 2.03 2.41 1.77 72 Computer & Related Activities 1.87 1.22 2.17 1.37 73 Research & Development 1.11 1.10 2.40 2.18 74 Other Business Activities 1.82 1.17 1.60 1.24 75 Public Administration & Defence; Compulsory Social Security 1.11 1.19 1.17 1.20 80 Education 1.09 0.96 1.05	62	Other Air Transport	1.16	1.06	1.83	1.15
64 Post & Telecommunications 1.52 1.55 1.38 1.62 65 Financial Intermediation, except Insurance & Pension Funding 1.89 1.47 1.46 1.29 66 Insurance & Pension Funding, except Compulsory Social Security 1.12 1.19 4.66 1.04 67 Activities Related to Financial Intermediation 1.51 1.38 1.70 1.61 70 Real Estate Activities 3.29 3.86 9.15 3.50 71 Renting of Machinery & Equipment 2.94 2.03 2.41 1.77 72 Computer & Related Activities 1.87 1.22 2.17 1.37 73 Research & Development 1.11 1.10 2.40 2.18 74 Other Business Activities 1.82 1.17 1.60 1.24 75 Public Administration & Defence; Compulsory Social Security 1.11 1.19 1.17 1.20 80 Education 1.09 0.96 1.05 1.12 90 Sewage & Refuse Disposal, Sanitation & Similar Activities 1.44 1.65 1.72 1.24	63	Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies	1.09	1.35	1.66	1.30
65 Financial Intermediation, except Insurance & Pension Funding 1.89 1.47 1.46 1.29 66 Insurance & Pension Funding, except Compulsory Social Security 1.12 1.19 4.66 1.04 67 Activities Related to Financial Intermediation 1.51 1.38 1.70 1.61 70 Real Estate Activities 3.29 3.86 9.15 3.50 71 Renting of Machinery & Equipment 2.94 2.03 2.41 1.77 72 Computer & Related Activities 1.87 1.22 2.17 1.37 73 Research & Development 1.11 1.10 2.40 2.18 74 Other Business Activities 1.82 1.17 1.60 1.24 75 Public Administration & Defence; Compulsory Social Security 1.11 1.19 1.17 1.20 80 Education 1.09 0.96 1.05 1.12 91 Activities of Membership Organizations, nec. 1.06 1.20 2.06 1.07 92 Recreational, Cultural and Sporting Activities 1.52 1.24 1.87 1.	64	Post & Telecommunications	1.52	1.55	1.38	1.62
66Insurance & Pension Funding, except Compulsory Social Security1.121.194.661.0467Activities Related to Financial Intermediation1.511.381.701.6170Real Estate Activities3.293.869.153.5071Renting of Machinery & Equipment2.942.032.411.7772Computer & Related Activities1.871.222.171.3773Research & Development1.111.102.402.1874Other Business Activities1.821.171.601.2475Public Administration & Defence; Compulsory Social Security1.111.191.171.2080Education1.090.961.051.1281Health & Social Work1.251.201.201.1890Sewage & Refuse Disposal, Sanitation & Similar Activities1.441.651.721.2491Activities of Membership Organizations, nec.1.061.202.061.0792Recreational, Cultural and Sporting Activities1.521.241.871.3493Other Service Activities2.331.541.941.63	65	Financial Intermediation, except Insurance & Pension Funding	1.89	1.47	1.46	1.29
67 Activities Related to Financial Intermediation 1.51 1.38 1.70 1.61 70 Real Estate Activities 3.29 3.86 9.15 3.50 71 Renting of Machinery & Equipment 2.94 2.03 2.41 1.77 72 Computer & Related Activities 1.87 1.22 2.17 1.37 73 Research & Development 1.11 1.10 2.40 2.18 74 Other Business Activities 1.82 1.17 1.60 1.24 75 Public Administration & Defence; Compulsory Social Security 1.11 1.19 1.17 1.20 80 Education 1.09 0.96 1.05 1.12 85 Health & Social Work 1.25 1.20 1.18 90 Sewage & Refuse Disposal, Sanitation & Similar Activities 1.44 1.65 1.72 1.24 91 Activities of Membership Organizations, nec. 1.06 1.20 2.06 1.07 92 Recreational, Cultural and Sporting Activities 1.52 1.24 1.87 1.34 93 Other Serv	66	Insurance & Pension Funding, except Compulsory Social Security	1.12	1.19	4.66	1.04
70 Real Estate Activities 3.29 3.86 9.15 3.50 71 Renting of Machinery & Equipment 2.94 2.03 2.41 1.77 72 Computer & Related Activities 1.87 1.22 2.17 1.37 73 Research & Development 1.11 1.10 2.40 2.18 74 Other Business Activities 1.82 1.17 1.60 1.24 75 Public Administration & Defence; Compulsory Social Security 1.11 1.19 1.17 1.20 80 Education 1.09 0.96 1.05 1.12 85 Health & Social Work 1.25 1.20 1.18 90 Sewage & Refuse Disposal, Sanitation & Similar Activities 1.44 1.65 1.72 1.24 91 Activities of Membership Organizations, nec. 1.06 1.20 2.06 1.07 92 Recreational, Cultural and Sporting Activities 1.52 1.24 1.87 1.34 93 Other Service Activities 2.33 1.54 1.94 1.63	67	Activities Related to Financial Intermediation	1.51	1.38	1.70	1.61
71 Renting of Machinery & Equipment 2.94 2.03 2.41 1.77 72 Computer & Related Activities 1.87 1.22 2.17 1.37 73 Research & Development 1.11 1.10 2.40 2.18 74 Other Business Activities 1.82 1.17 1.60 1.24 75 Public Administration & Defence; Compulsory Social Security 1.11 1.19 1.17 1.20 80 Education 1.09 0.96 1.05 1.12 85 Health & Social Work 1.25 1.20 1.18 90 Sewage & Refuse Disposal, Sanitation & Similar Activities 1.44 1.65 1.72 1.24 91 Activities of Membership Organizations, nec. 1.06 1.20 2.06 1.07 92 Recreational, Cultural and Sporting Activities 1.52 1.24 1.87 1.34 93 Other Service Activities 2.33 1.54 1.94 1.63	70	Real Estate Activities	3.29	3.86	9.15	3.50
72 Computer & Related Activities 1.87 1.22 2.17 1.37 73 Research & Development 1.11 1.10 2.40 2.18 74 Other Business Activities 1.82 1.17 1.60 1.24 75 Public Administration & Defence; Compulsory Social Security 1.11 1.19 1.17 1.20 80 Education 1.09 0.96 1.05 1.12 85 Health & Social Work 1.25 1.20 1.24 90 Sewage & Refuse Disposal, Sanitation & Similar Activities 1.44 1.65 1.72 1.24 91 Activities of Membership Organizations, nec. 1.06 1.20 2.06 1.07 92 Recreational, Cultural and Sporting Activities 1.52 1.24 1.87 1.34 93 Other Service Activities 2.33 1.54 1.94 1.63	71	Renting of Machinery & Equipment	2.94	2.03	2.41	1.77
73 Research & Development 1.11 1.10 2.40 2.18 74 Other Business Activities 1.82 1.17 1.60 1.24 75 Public Administration & Defence; Compulsory Social Security 1.11 1.19 1.17 1.20 80 Education 1.09 0.96 1.05 1.12 85 Health & Social Work 1.25 1.20 1.18 90 Sewage & Refuse Disposal, Sanitation & Similar Activities 1.44 1.65 1.72 1.24 91 Activities of Membership Organizations, nec. 1.06 1.20 2.06 1.07 92 Recreational, Cultural and Sporting Activities 1.52 1.24 1.87 1.34 93 Other Service Activities 2.33 1.54 1.94 1.63	72	Computer & Related Activities	1.87	1.22	2.17	1.37
74 Other Business Activities 1.82 1.17 1.60 1.24 75 Public Administration & Defence; Compulsory Social Security 1.11 1.19 1.17 1.20 80 Education 1.09 0.96 1.05 1.12 85 Health & Social Work 1.25 1.20 1.18 90 Sewage & Refuse Disposal, Sanitation & Similar Activities 1.44 1.65 1.72 1.24 91 Activities of Membership Organizations, nec. 1.06 1.20 2.06 1.07 92 Recreational, Cultural and Sporting Activities 1.52 1.24 1.87 1.34 93 Other Service Activities 2.33 1.54 1.94 1.63	73	Research & Development	1.11	1.10	2.40	2.18
75 Public Administration & Defence; Compulsory Social Security 1.11 1.19 1.17 1.20 80 Education 1.09 0.96 1.05 1.12 85 Health & Social Work 1.25 1.20 1.18 90 Sewage & Refuse Disposal, Sanitation & Similar Activities 1.44 1.65 1.72 1.24 91 Activities of Membership Organizations, nec. 1.06 1.20 2.06 1.07 92 Recreational, Cultural and Sporting Activities 1.52 1.24 1.87 1.34 93 Other Service Activities 2.33 1.54 1.94 1.63	74	Other Business Activities	1.82	1.17	1.60	1.24
80 Education 1.09 0.96 1.05 1.12 85 Health & Social Work 1.25 1.20 1.20 1.18 90 Sewage & Refuse Disposal, Sanitation & Similar Activities 1.44 1.65 1.72 1.24 91 Activities of Membership Organizations, nec. 1.06 1.20 2.06 1.07 92 Recreational, Cultural and Sporting Activities 1.52 1.24 1.87 1.34 93 Other Service Activities 2.33 1.54 1.94 1.63	75	Public Administration & Defence; Compulsory Social Security	1.11	1.19	1.17	1.20
85 Health & Social Work 1.25 1.20 1.18 90 Sewage & Refuse Disposal, Sanitation & Similar Activities 1.44 1.65 1.72 1.24 91 Activities of Membership Organizations, nec. 1.06 1.20 2.06 1.07 92 Recreational, Cultural and Sporting Activities 1.52 1.24 1.87 1.34 93 Other Service Activities 2.33 1.54 1.94 1.63	80	Education	1.09	0.96	1.05	1.12
90Sewage & Refuse Disposal, Sanitation & Similar Activities1.441.651.721.2491Activities of Membership Organizations, nec.1.061.202.061.0792Recreational, Cultural and Sporting Activities1.521.241.871.3493Other Service Activities2.331.541.941.63	85	Health & Social Work	1.25	1.20	1.20	1.18
91 Activities of Membership Organizations, nec. 1.06 1.20 2.06 1.07 92 Recreational, Cultural and Sporting Activities 1.52 1.24 1.87 1.34 93 Other Service Activities 2.33 1.54 1.94 1.63	90	Sewage & Refuse Disposal, Sanitation & Similar Activities	1.44	1.65	1.72	1.24
92 Recreational, Cultural and Sporting Activities 1.52 1.24 1.87 1.34 93 Other Service Activities 2.33 1.54 1.94 1.63	91	Activities of Membership Organizations, nec.	1.06	1.20	2.06	1.07
93 Other Service Activities 2.33 1.54 1.94 1.63	92	Recreational, Cultural and Sporting Activities	1.52	1.24	1.87	1.34
	93	Other Service Activities	2.33	1.54	1.94	1.63

Table A6.a. Estimated mark-ups	s by sector and country ((when the regression includes a constant
I uple i loui Louiniucea mai n app	by beetor and country	then the recreation menades a constant

Code	Sector	Netherlands	Belgium	Austria	Finland	USA
15	Food & Beverages	1.07	1.09	1.07	1.11	1.12
16	Tobacco	1.45	1.07	1.70	1.10	1.62
17	Textiles	1.08	1.08	1.13	1.20	1.08
18	Wearing Apparel, Dressing & Dying of Fur	1.10	1.09	1.20	1.08	1.14
19	Leather, leather and footwear	1.12	1.09	1.22	1.09	1.22
20	Wood & of Wood & Cork	1.20	1.10	1.17	1.21	1.15
21	Pulp, Paper & Paper	1.13	1.12	1.34	1.34	1.22
22	Printing, Publishing & Reproduction	1.17	1.16	1.20	1.16	1.30
23	Coke, Refined Petroleum & Nuclear Fuel	1.05	1.07	1.14	1.13	1.09
24	Chemicals & Chemical Products	1.20	1.19	1.15	1.24	1.31
25	Rubber & Plastics	1.07	1.13	1.13	1.20	1.19
26	Other Non-Metallic Mineral	1.25	1.15	1.25	1.30	1.25
27	Basic Metals	1.39	1.13	1.28	1.17	1.10
28	Fabricated Metal	1.14	1.12	1.15	1.18	1.19
29	Machinery, nec.	1.10	1.16	1.13	1.17	1.25
30	Office, Accounting & Computing Machinery	1.03	1.49	1.35	1.07	1.19
31	Electrical Machinery & Apparatus, nec.	1.09	1.12	1.15	1.19	1.20
32	Radio, Television & Communication Equipment	1.09	1.05	1.17	1.27	1.29
33	Medical, Precision & Optical Instruments	1.26	1.17	1.19	1.24	1.37
34	Motor Vehicles, Trailers & Semi-Trailers	1.07	1.06	1.20	1.06	0.97
35	Other Transport Equipment	1.05	1.05	1.13	1.04	2.79
36	Manufacturing, nec.	1.12	1.05	1.13	1.22	1.21
37	Recycling	1.21	1.11	1.77	1.35	0.00
40	Electricity & Gas	1.13	1.54	1.38	1.65	1.46
41	Water Supply	1.65	1.41	2.07	2.48	0.00
45	Construction	1.10	1.17	1.18	1.14	1.31
50	Sale, Maint. & Repair of Motor Vehicles & Motorcycles; Retail Sale of Fuel	1.27	1.25	1.65	1.40	1.01
51	Wholesale Trade & Commission Trade, except of Motor Vehicles & Mot/cles	1.39	1.21	1.41	1.25	1.32
52	Retail Trade, except of Motor Vehicles & Mot/cles; Repair of Household Goods	1.41	1.21	1.39	1.29	1.19
55	Hotels & Restaurants	1.31	1.23	1.36	1.11	1.15
60	Other Inland Transport	1.24	1.26	1.42	1.52	1.43
61	Other Water Transport	1.37	1.07	2.04	1.32	1.29
62	Other Air Transport	1.27	1.04	1.52	1.39	1.17
63	Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies	1.25	1.30	1.42	1.52	1.33
64	Post & Telecommunications	1.27	1.61	1.29	1.48	1.40
65	Financial Intermediation, except Insurance & Pension Funding	1.38	1.45	1.58	1.71	1.39
66	Insurance & Pension Funding, except Compulsory Social Security	1.42	1.55	2.13	2.28	1.14
67	Activities Related to Financial Intermediation	1.38	1.31	1.72	1.75	0.00
70	Real Estate Activities	3.02	3.88	3.40	2.23	3.80
71	Renting of Machinery & Equipment	2.03	1.63	2.63	1.73	2.93
72	Computer & Related Activities	1.22	1.16	1.32	1.26	1.89
73	Research & Development	0.98	0.93	1.36	1.07	1.59
74	Other Business Activities	1.15	1.31	1.29	1.20	1.27
75	Public Administration & Defence; Compulsory Social Security	1.19	1.13	1.15	1.07	1.80
80	Education	1.08	1.09	1.12	1.09	0.97
85	Health & Social Work	1.22	1.24	1.25	1.09	1.16
90	Sewage & Refuse Disposal, Sanitation & Similar Activities	1.40	1.27	1.57	1.47	1.10
91	Activities of Membership Organizations, nec.	1.09	1.06	1.12	1.06	1.05
92	Recreational, Cultural and Sporting Activities	1.27	1.42	1.29	1.24	1.23
93	Other Service Activities	1.50	1.38	1.27	1.43	1.34
Notes	: Mark-ups in bold are statistically significantly different from 1 at the 5% level					

Table A6.b. Estimated mark-ups by sector and country (when the regression includes a constant)

42

Code	Sector	Germany	France	Italy	Spain
15	Food & Beverages	0.02	0.01	0.02	0.01
16	Tobacco	0.02	0.20	0.02	0.08
17	Tevtiles	0.14	0.02	0.03	0.00
18	Wearing Apparel Dressing & Dying of Fur	0.02	0.02	0.02	0.03
10	Leother leother and footwaar	0.02	0.01	0.02	0.03
20	Wood & of Wood & Contr	0.03	0.03	0.01	0.02
20	Dula Danar & Danar	0.02	0.03	0.01	0.03
21	Puip, Paper & Paper	0.04	0.03	0.04	0.03
22	Printing, Publishing & Reproduction	0.03	0.02	0.04	0.02
23	Clock, Renned Petroleum & Nuclear Fuel	0.09	0.01	0.02	0.04
24	Chemicals & Chemical Products	0.05	0.01	0.01	0.02
25	Rubber & Plastics	0.03	0.02	0.01	0.02
26	Other Non-Metallic Mineral	0.04	0.02	0.01	0.03
27	Basic Metals	0.04	0.03	0.12	0.04
28	Fabricated Metal	0.04	0.03	0.07	0.01
29	Machinery, nec.	0.01	0.03	0.01	0.02
30	Office, Accounting & Computing Machinery	0.06	0.07	0.08	0.07
31	Electrical Machinery & Apparatus, nec.	0.07	0.02	0.04	0.01
32	Radio, Television & Communication Equipment	0.03	0.02	0.02	0.02
33	Medical, Precision & Optical Instruments	0.03	0.02	0.14	0.03
34	Motor Vehicles, Trailers & Semi-Trailers	0.03	0.02	0.05	0.02
35	Other Transport Equipment	0.08	0.07	0.09	0.01
36	Manufacturing, nec.	0.01	0.04	0.00	0.01
37	Recycling	0.05	0.05	0.00	0.05
40	Electricity & Gas	0.07	0.06	0.04	0.04
41	Water Supply	0.16	0.06	0.04	0.10
45	Construction	0.02	0.03	0.01	0.00
50	Sale, Maint. & Repair of Motor Vehicles & Motorcycles; Retail Sale of Fuel	0.05	0.06	0.02	0.01
51	Wholesale Trade & Commission Trade, except of Motor Vehicles & Mot/cles	0.07	0.03	0.00	0.01
52	Retail Trade, except of Motor Vehicles & Mot/cles; Repair of Household Goods	0.02	0.03	0.04	0.02
55	Hotels & Restaurants	0.03	0.02	0.02	0.02
60	Other Inland Transport	0.07	0.02	0.05	0.03
61	Other Water Transport	0.14	0.02	0.01	0.03
62	Other Air Transport	0.11	0.05	0.01	0.03
63	Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies	0.03	0.04	0.01	0.02
64	Post & Telecommunications	0.10	0.20	0.06	0.05
65	Financial Intermediation, except Insurance & Pension Funding	0.23	0.06	0.14	0.06
66	Insurance & Pension Funding, except Compulsory Social Security	0.04	0.07	3.58	0.06
67	Activities Related to Financial Intermediation	0.07	0.10	0.15	0.03
70	Real Estate Activities	0.22	0.25	0.51	0.09
71	Renting of Machinery & Equipment	0.11	0.09	0.08	0.03
72	Computer & Related Activities	0.14	0.06	0.07	0.03
73	Research & Development	0.06	0.03	0.07	0.30
74	Other Business Activities	0.06	0.03	0.17	0.02
75	Public Administration & Defence: Compulsory Social Security	0.00	0.01	0.02	0.02
80	Education	0.01	0.02	0.01	0.01
85	Health & Social Work	0.04	0.02	0.01	0.02
90	Sewage & Refuse Disposal Sanitation & Similar Activities	0.04	0.04	0.06	0.02
01	Activities of Membership Organizations, peo	0.04	0.00	0.00	0.02
02	Decreational Cultural and Sporting Activities	0.02	0.07	0.00	0.02
92 03	Other Service Activities	0.05	0.03	0.05	0.04
Notes:	Reported standard errors are robust to autocorrelation and heteroskedasticity (1)	Vewey-West	maximum 1	ag=3) and	have been
transfo	rmed as $s.e(1/1-\beta)=s.e(\beta)/(1-\beta)^2$ using the delta method.	,		<i>, , , , , , , , , , , , , , , , , , , </i>	

Table A7 a HAC standard er	rrors corresponding to the mark-i	in estimates by sector a	and country of table A6 a
Table Alia, IIAC Stalluaru el	11015 corresponding to the mark-	μ commando by occide a	mu counti y or table Ao.a.

Jone France Description Description Description 16 Folds & Beverages 0.01 0.01 0.03 0.02 0.02 16 Tokace 0.08 0.04 0.03 0.01 0.01 0.03 0.01 0.03 0.05 0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.04 0.01 0.03 0.03 0.04 0.01 0.03 0.03 0.04 0.01 0.03 0.04 0.01 0.03 0.04 0.01 0.03 0.04 0.01 0.03 0.04 0.01 0.03 0.04 0.01 0.02 0.01 0.02 0.01 0.02 0.01 0.02 0.04 0.04 0.03 0.04 0.04 0.03 0.04 0.03 0.02 0.02 0.02 0.02 0.02 0.03 0.04 0.04 0.03	Code	Sector	Netherlands	Relgium	Austria	Finland	USA
Dist DotAde Dereages Out	15	East & Davarages	0.01	0.01	0.02	0.01	0.02
10 1000000 0004 0.004 0.004 0.005 0.004 0.001 0.005 0.003 0.001 15 Warning Apparel, Pressing & Dying of Fur 0.04 0.01 0.03 0.04 0.01 0.05 0.01 0.03 0.02 0.03 0.04 0.03 0.02 0.03 0.04 0.03 0.02 0.04 0.03 0.02 0.04 0.03 0.02 0.04 0.03 0.02 0.04 0.03 0.02 0.04 0.03 0.02 0.04 0.03 0.02 0.04 0.03 0.02 0.04 0.03 0.02 0.03 0.02 0.02 0.03 0.02 0.02 0.03 0.02 0.03 0.02 0.03 0.02 0.03 0.02 0.0	15		0.01	0.01	0.03	0.01	0.02
1 Falthers 0.03 0.04 0.01 0.03 0.04 0.01 0.03 0.04 0.01 0.03 0.04 0.01 0.03 0.02 0.05 0.01 0.03 0.02 0.04 0.01 0.03 0.03 0.02 0.04 0.01 0.03 0.02 0.03 0.02 0.03 0.02 0.03 0.02 0.03 0.02 0.03 0.02 0.03 0.02 0.03 0.02 0.03 0.02 0.03 0.02 0.03 0.02 0.03 0.02 0.03 0.02 0.03 0.02 0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.03 </td <td>10</td> <td>Taxtilas</td> <td>0.08</td> <td>0.04</td> <td>0.15</td> <td>0.03</td> <td>0.14</td>	10	Taxtilas	0.08	0.04	0.15	0.03	0.14
Instruction Deal of the second s	17	Waaring Appored Dressing & Dving of Eur	0.03	0.01	0.00	0.02	0.02
b Default relative and nonveal 0.04 0.01 0.01 0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.04 1 Philp, Paper & Paper 0.03 0.03 0.04 0.01 0.03 0.02 0.05 0.01 0.03 0.02 23 Coke, Refined Peroteum & Naclear Fuel 0.03 0.01 0.03 0.02 0.03 0.01 0.03 0.02 0.03 24 Chemicas & Chemical Products 0.03 0.01 0.03 0.02 0.03 25 Ruber & Planicas 0.03 0.04 0.04 0.03 0.02 0.04 26 Ruber & Planicas & Computing Machinery 0.02 0.02 0.03 0.04 0.04 0.03 0.02 0.02 0.03 0.04 0.04 0.03 0.02 0.03 0.04 0.04 0.04 0.04 0.04 0.04 0.04 0.04 0.04 0.04 0.04 0.04 0.04 0.04	10	Leether leether and factwar	0.04	0.02	0.05	0.03	0.05
20 Phote X buy 00.00 0.01 0.03 0.03 0.04 0.04 21 Phinting, Publishing & Reproduction 0.03 0.02 0.01 0.04 0.01 23 Coke, Refined Petroleum, & Nuclear Fuel 0.02 0.01 0.02 0.03 0.02 25 Rubber & Plastics 0.03 0.03 0.04 0.04 0.03 26 Other Non-Meallie Mineral 0.02 0.01 0.02 0.03 26 Other Non-Meallie Mineral 0.02 0.01 0.02 0.03 27 Basic Metals 0.02 0.01 0.02 0.03 0.04 0.04 0.03 28 Indicat Mechanery, nec. 0.02 0.02 0.02 0.02 0.02 0.02 0.04 0.01 20 Other Tonsjort Equipment 0.02 0.02 0.03 0.03 0.02 0.04 0.04 30 Bacterial Meal 0.02 0.03 0.02 0.04 0.05 0.03	20	Wood & of Wood & Cork	0.04	0.01	0.11	0.03	0.06
1 rup, rup, rup, rup, rup, rup, rup, rup,	20	Dula Dener & Dener	0.08	0.01	0.00	0.02	0.03
22 Coke, Refined Peroleum & Nuclear Fuel 0.02 0.03 0.01 0.05 0.01 0.05 0.01 0.02 0.03 0.02 25 Rubber & Plastices 0.03 0.01 0.02 0.03 0.04 0.01 26 Other Non-Metallic Mineral 0.03 0.04 0.03 0.02 0.01 27 Basic Metals 0.05 0.02 0.01 0.02 0.03 28 Fabricated Metal 0.03 0.04 0.04 0.03 0.02 20 Machinery, nec. 0.02 0.01 0.02 0.06 0.02 21 Exercited Machinery & Approtrats, nec. 0.02 0.03 0.02 0.03 0.02 22 Radio, Television & Computing Machinery 0.02 0.03 0.03 0.04 0.04 33 Metheral, Precision & Computing Machinery 0.02 0.03 0.03 0.02 0.04 0.04 35 Other Transport Equipment 0.05 0.02 0.04	21	Puip, raper & raper	0.03	0.03	0.09	0.05	0.04
23 Cher. Refine Probability Automating Products 0.01<	22	Printing, Publishing & Reproduction	0.03	0.02	0.05	0.01	0.03
24 Chambeal weaks 0.00 0.01 0.02 0.02 0.02 25 Rubber & Plansics 0.03 0.03 0.03 0.04 0.04 26 Other Non-Metallic Mineral 0.03 0.03 0.04 0.04 0.03 27 Basic Metals 0.05 0.02 0.04 0.02 0.04 28 Fabricated Metal 0.02 0.04 0.03 0.04 0.02 0.06 20 Office. Accounting & Computing Machinery 0.02 0.02 0.02 0.02 0.02 0.02 0.02 0.02 0.02 0.02 0.03 0.04 0.04 0.05 31 Medical, Precision & Communication Equipment 0.05 0.02 0.02 0.03 0.04 0.04 0.05 0.02 0.04 0.04 0.05 0.02 0.03 0.02 0.03 0.02 0.03 0.02 0.04 0.04 0.02 0.05 0.03 0.02 0.04 0.02 0.03	23	Coke, Refined Petroleum & Nuclear Fuel	0.02	0.01	0.16	0.04	0.01
22 Robber & Prasties 0.03 0.01 0.003 0.004 0.033 26 Other Non-Metaltic Mineral 0.03 0.04 0.03 0.04 0.03 27 Basic Metals 0.05 0.02 0.01 0.02 0.03 28 Fabricated Metal 0.03 0.02 0.01 0.05 0.02 0.03 20 Office, Accounting & Computing Machinery 0.02 0.03 0.04 0.04 0.04 0.04 0.04 0.04 0.04 0.04 0.04 0.04 0.04 0.04 0.04 0.04 0.04 0.04	24	Chemicals & Chemical Products	0.05	0.01	0.02	0.03	0.02
20 Other Non-Metalite Mineral 0.03 0.03 0.04 0.04 0.03 27 Basic Metals 0.05 0.02 0.01 0.05 0.02 0.01 28 Fabricated Metal 0.02 0.01 0.05 0.02 0.04 29 Machinery, nec. 0.02 0.02 0.06 0.02 0.02 31 Electrical Machinery & Apparatus, nec. 0.02 0.02 0.03 0.04 0.04 33 Medical, Precision & Communication Equipment 0.03 0.02 0.03 0.04 0.04 34 Motor Vehicles, Trailers & Semi-Trailers 0.02 0.02 0.03 0.04 0.04 35 Other Transport Equipment 0.05 0.02 0.03 0.03 0.03 40 Electricity & Gas 0.03 0.03 0.03 0.03 0.03 5 Construction 0.02 0.01 0.07 0.02 0.03 0.04 51 Wholesale Trade, except of Motor Vehicles & M	25	Rubber & Plastics	0.03	0.01	0.03	0.02	0.04
27 Basic Metals 0.05 0.07 0.01 0.00 0.02 0.03 28 Fabricated Metal 0.02 0.01 0.04 0.03 0.02 29 Machinery, nec. 0.03 0.02 0.02 0.02 0.02 0.02 0.03 31 Electrical Machinery & Apparatus, nec. 0.03 0.00 0.03 0.04 0.01 32 Radio, Television & Communication Equipment 0.08 0.02 0.03 0.04 0.04 34 Motor Vehicles, Trailers & Semi-Trailers 0.02 0.02 0.03 0.02 0.03 0.02 36 Manufacturing, nec. 0.02 0.02 0.05 0.03 0.02 40 Electricity & Gas 0.03 0.08 0.09 0.05 0.03 41 Water Supply 0.12 0.06 0.07 0.03 0.04 42 Sale, Maint & Repair of Motor Vehicles & Motoreles & Mot	26	Other Non-Metallic Mineral	0.03	0.03	0.04	0.04	0.03
28Pabricated Metal0.0120.0010.0050.0020.0010.0050.00290Machinery, nec.0.020.020.060.020.0221Radio, Telvision & Communication Equipment0.080.030.090.040.0133Medical, Precision & Optical Instruments0.070.030.090.040.0134Motor Vehicles, Trailers & Semi-Trailers0.020.020.030.040.0435Other Transport Equipment0.050.020.030.020.030.0237Recycling0.060.010.180.140.0040Electricity & Gas0.030.0030.0040.010.0241Water Supply0.120.060.070.020.0440Electricity & Gas0.010.020.010.070.0241Water Supply0.120.060.070.030.0342Construction0.020.010.070.020.0143Wholesale Trade & Commission Trade, except of Motor Vehicles & Mot/cles & Mot/cles & Mot/cles0.050.030.0354Hotels & Restaurants0.030.040.040.010.0465Financial Intermediation, except Instrumer & Pension Funding0.180.030.0166Instrumencial Intermediation0.070.130.220.050.0375Financial Intermediation, except Instrumer & Pension Funding<	27	Basic Metals	0.05	0.02	0.10	0.02	0.03
29 Machinery, nec. 0.03 0.04 0.04 0.03 0.02 11 Electrical Machinery & Apparatus, nec. 0.02 0.02 0.03 0.09 0.11 0.02 23 Radio, Television & Communication Equipment 0.08 0.03 0.04 0.01 33 Medical, Precision & Optical Instruments 0.07 0.02 0.02 0.04 0.04 34 Motor Vehicles, Trailers 0.02 0.02 0.03 0.04 0.04 35 Other Transport Equipment 0.03 0.02 0.03 0.03 0.02 40 Electricity & Gas 0.03 0.02 0.04 0.05 0.05 41 Water Supply 0.12 0.06 0.01 0.03 0.04 50 Sale, Maint, & Repair of Motor Vehicles & Motorcycles; Retail Sale of Fuel 0.02 0.03 0.03 51 Water Supporting 0.05 0.04 0.14 0.05 0.03 0.04 52 Retail Trade, except of Motor Vehicles & Motr/esics	28	Fabricated Metal	0.02	0.01	0.05	0.02	0.04
30 Office, Accounting & Computing Machinery 0.02 0.02 0.09 0.01 0.02 31 Electrical Machinery & Apparatus, nec. 0.02 0.02 0.03 0.06 0.03 32 Radio, Television & Communication Equipment 0.03 0.04 0.04 0.04 34 Motor Vehicles, Trailers & Semi-Trailers 0.02 0.02 0.03 0.04 0.05 35 Other Transport Equipment 0.05 0.02 0.03 0.03 0.02 36 Manufacturing, nec. 0.02 0.02 0.03 0.03 0.02 37 Recycling 0.06 0.01 0.18 0.14 0.00 40 Electricity & Gas 0.03 0.02 0.01 0.07 0.02 0.04 41 Water Supply 0.12 0.06 0.03 0.03 0.03 42 Construction 0.02 0.01 0.07 0.02 0.04 53 Real Trade, except of Motor Vehicles & Mot/cles: Repair of Hosor Sehicles & Mo	29	Machinery, nec.	0.03	0.04	0.04	0.03	0.02
31 Electrical Machinery & Apparatus, nec. 0.02 0.02 0.03 0.03 0.03 0.03 0.03 0.04 0.03 32 Radio, Television & Communication Equipment 0.03 0.03 0.04 0.01 34 Motor Vehicles, Trailers & Semi-Trailers 0.02 0.02 0.03 0.04 0.04 35 Other Transport Equipment 0.05 0.02 0.02 0.03 0.02 0.03 0.02 0.04 0.05 0.02 36 Manufacturing, nec. 0.02 0.02 0.02 0.03 0.02 0.04 0.00 40 Electricity & Gas 0.03 0.03 0.03 0.04 0.02 0.03 0.04 50 Sale, Maint. & Repair of Motor Vehicles & Motorcycles; Retail Sale of Fuel 0.02 0.03 0	30	Office, Accounting & Computing Machinery	0.02	0.19	0.09	0.11	0.02
32 Radio, Television & Communication Equipment 0.08 0.03 0.09 0.04 0.01 33 Medical, Precision & Optical Instruments 0.07 0.03 0.09 0.04 0.01 34 Motor Vehicles, Trailers & Semi-Trailers 0.02 0.02 0.02 0.03 0.03 0.02 36 Manufracturing, nec. 0.02 0.02 0.05 0.05 0.05 40 Electricity & Gas 0.03 0.08 0.09 0.02 0.05 0.05 41 Water Supply 0.12 0.06 0.27 0.34 0.004 50 Sale, Maint & Repair of Motor Vehicles & Motorcycles; Retail Sale of Fuel 0.02 0.03 0.03 0.03 51 Wholessle Trade & Commission Trade, except of Motor Vehicles & Mot/cles 0.05 0.04 0.01 0.04 0.01 0.04 0.03 0.03 0.03 52 Retail Trade, except of Motor Vehicles & Mot/cles; Repair of Houschold Goods 0.04 0.04 0.01 0.04 0.01 0.04 0.03	31	Electrical Machinery & Apparatus, nec.	0.02	0.02	0.06	0.02	0.02
33Medical, Precision & Optical Instruments0.070.030.090.040.1034Motor Vehicles, Trailers & Semi-Trailers0.020.020.030.040.0435Other Transport Equipment0.050.020.040.051.0636Manufacturing, nec.0.020.020.030.020.030.0237Recycling0.060.010.180.140.0040Electricity & Gas0.030.020.010.070.020.0450Construction0.020.010.070.020.0451Wholesale Trade & Commission Trade, except of Motor Vehicles & Mot/cles0.050.060.050.030.0352Retail Trade, except of Motor Vehicles & Mot/cles0.040.020.050.030.010.0460Other Inland Transport0.050.040.040.010.040.010.0461Other Air Transport0.050.040.180.050.050.050.060.050.070.0564Post & Telecommunications0.070.130.210.040.070.020.000.070.020.0065Financial Intermediation, except Insurance & Pension Funding0.180.080.230.060.050.0564Post & Telecommunications0.070.130.210.040.070.050.060.050.0565Financial	32	Radio, Television & Communication Equipment	0.08	0.03	0.03	0.06	0.05
34 Motor Vehicles, Trailers & Semi-Trailers 0.02 0.02 0.03 0.04 0.04 35 Other Transport Equipment 0.05 0.02 0.05 0.03 0.02 37 Recycling 0.06 0.01 0.18 0.14 0.00 40 Electricity & Gas 0.03 0.08 0.09 0.05 0.05 41 Water Supply 0.12 0.06 0.07 0.02 0.04 0.07 50 Sale, Maint. & Repair of Motor Vehicles & Motorcycles; Retail Sale of Fuel 0.02 0.03 0.01 0.04 0.03 0.03 51 Wholesale Trade & Commission Trade, except of Motor Vehicles & Mot/cles; Mot/cles 0.05 0.06 0.05 0.03 0.03 52 Retail Trade, except of Motor Vehicles & Mot/cles; Repair of Household Goods 0.04 0.01 0.04 0.01 0.04 60 Other Inland Transport 0.05 0.04 0.28 0.03 0.01 61 Other Vater Transport 0.05 0.04 0.18 0.05 0.05 62 Other Air Transport 0.09	33	Medical, Precision & Optical Instruments	0.07	0.03	0.09	0.04	0.10
35 Other Transport Equipment 0.05 0.02 0.04 0.05 1.06 36 Manufacturing, nec. 0.02 0.02 0.03 0.01 0.18 0.01 40 Electricity & Gas 0.03 0.08 0.09 0.05 0.05 41 Water Supply 0.12 0.06 0.27 0.34 0.00 50 Sale, Maint, & Repair of Motor Vchicles & Motorcycles; Retail Sale of Fuel 0.02 0.03 0.016 0.03 0.04 51 Wholesale Trade, except of Motor Vchicles & Mot/cles; Repair of Household Goods 0.04 0.02 0.03 0.03 52 Retail Trade, except of Motor Vchicles & Mot/cles; Repair of Household Goods 0.04 0.04 0.01 0.04 60 Other Inland Transport 0.05 0.04 0.04 0.01 0.04 61 Other Aiter Transport 0.05 0.04 0.28 0.03 0.01 62 Other Aiter Transport 0.05 0.04 0.18 0.05 0.05 64 Post & Telecommunications 0.07 0.13 0.21 0.04 <td< td=""><td>34</td><td>Motor Vehicles, Trailers & Semi-Trailers</td><td>0.02</td><td>0.02</td><td>0.03</td><td>0.04</td><td>0.04</td></td<>	34	Motor Vehicles, Trailers & Semi-Trailers	0.02	0.02	0.03	0.04	0.04
36 Manufacturing, nec. 0.02 0.02 0.05 0.03 0.02 37 Recycling 0.06 0.01 0.18 0.04 0.00 37 Recycling 0.03 0.01 0.18 0.01 0.05 0.05 40 Electricity & Gas 0.03 0.02 0.01 0.07 0.02 0.04 50 Sale, Maint, & Repair of Motor Vehicles & Motorycles; Retail Sale of Fuel 0.02 0.03 0.03 0.03 51 Wholesale Trade & Commission Trade, except of Motor Vehicles & Mot/cles 0.03 0.01 0.04 0.03 0.03 55 Hotels & Restaurants 0.03 0.01 0.04 0.01 0.04 60 Other Mater Transport 0.05 0.04 0.14 0.05 0.14 61 Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies 0.03 0.04 0.18 0.05 62 Other Air Transport 0.09 0.13 0.21 0.04 0.07 63 Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies 0.03 0.01 <	35	Other Transport Equipment	0.05	0.02	0.04	0.05	1.06
Recycling 0.06 0.01 0.18 0.14 0.04 40 Electricity & Gas 0.03 0.08 0.09 0.05 0.05 41 Water Supply 0.12 0.06 0.27 0.34 0.00 50 Sale, Maint. & Repair of Motor Vchicles & Motorcycles; Retail Sale of Fuel 0.02 0.03 0.16 0.03 0.03 51 Wholesale Trade & Commission Trade, except of Motor Vchicles & Mot/cles; Repair of Household Goods 0.04 0.02 0.05 0.03 0.03 52 Retail Trade, except of Motor Vchicles & Mot/cles; Repair of Household Goods 0.04 0.02 0.05 0.03 0.03 55 Hotels & Restaurants 0.05 0.04 0.04 0.04 0.04 60 Other Mater Transport 0.05 0.04 0.28 0.03 0.04 61 Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies 0.03 0.04 0.01 0.05 0.05 64 Post & Telecommunications 0.07 0.13 0.21 0.04 </td <td>36</td> <td>Manufacturing, nec.</td> <td>0.02</td> <td>0.02</td> <td>0.05</td> <td>0.03</td> <td>0.02</td>	36	Manufacturing, nec.	0.02	0.02	0.05	0.03	0.02
40 Electricity & Gas 0.03 0.08 0.09 0.05 0.05 11 Water Supply 0.12 0.06 0.27 0.34 0.00 45 Construction 0.02 0.01 0.07 0.02 0.04 50 Sale, Maint, & Repair of Motor Vehicles & Motorcycles; Retail Sale of Fuel 0.02 0.05 0.03 0.04 51 Wholesale Trade & Commission Trade, except of Motor Vehicles & Mot/cles 0.05 0.06 0.05 0.03 0.03 52 Retail Trade, except of Motor Vehicles & Mot/cles; Repair of Household Goods 0.04 0.02 0.05 0.03 0.01 60 Other Inland Transport 0.05 0.04 0.05 0.04 0.04 0.05 0.04 0.04 0.05 0.04 0.05 0.05 0.05 0.05	37	Recycling	0.06	0.01	0.18	0.14	0.00
41 Water Supply 0.12 0.06 0.27 0.34 0.00 45 Construction 0.02 0.01 0.07 0.02 0.04 50 Sale, Maint. & Repair of Motor Vehicles & Motorcycles; Retail Sale of Fuel 0.02 0.05 0.05 0.03 0.03 51 Wholesale Trade & Commission Trade, except of Motor Vehicles & Mot/cles 0.03 0.01 0.04 0.01 0.04 60 Other Inland Transport 0.03 0.01 0.04 0.01 0.04 61 Other Water Transport 0.05 0.04 0.14 0.05 0.04 62 Other Supporting & Auxillary Transp. Activities; Activities of Travel Agencies 0.03 0.04 0.03 0.01 63 Other Supporting & Auxillary Transp. Activities; Activities of Travel Agencies 0.03 0.04 0.03 0.07 64 Post & Telecommunications 0.07 0.13 0.21 0.04 0.07 65 Financial Intermediation, except Insurance & Pension Funding 0.18 0.08 0.23 0.16 0.05 66 Insurance & Pension Funding, except Compulsory Social	40	Electricity & Gas	0.03	0.08	0.09	0.05	0.05
45 Construction 0.02 0.01 0.07 0.02 0.04 50 Sale, Maint, & Repair of Motor Vehicles & Motorcycles; Retail Sale of Fuel 0.02 0.03 0.01 0.03 0.03 51 Wholesale Trade, & Commission Trade, except of Motor Vehicles & Mot/cles; Repair of Household Goods 0.04 0.02 0.05 0.03 0.03 52 Retail Trade, except of Motor Vehicles & Mot/cles; Repair of Household Goods 0.04 0.02 0.05 0.03 0.01 60 Other Inland Transport 0.05 0.04 0.14 0.05 0.11 61 Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies 0.03 0.04 0.18 0.05 0.04 63 Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies 0.07 0.13 0.21 0.04 0.07 64 Post & Telecommunications 0.07 0.13 0.32 0.05 0.06 65 Financial Intermediation, except Compulsory Social Security 0.09 0.13 0.32 0.06 0.23 70 Real Estate Activities 0.31 0.11 1.12 <td< td=""><td>41</td><td>Water Supply</td><td>0.12</td><td>0.06</td><td>0.27</td><td>0.34</td><td>0.00</td></td<>	41	Water Supply	0.12	0.06	0.27	0.34	0.00
50 Sale, Maint. & Repair of Motor Vehicles & Motorcycles; Retail Sale of Fuel 0.02 0.03 0.04 51 Wholesale Trade & Commission Trade, except of Motor Vehicles & Mot/cles; 0.05 0.06 0.05 0.03 0.03 52 Retail Trade, except of Motor Vehicles & Mot/cles; Repair of Household Goods 0.04 0.02 0.05 0.03 0.03 55 Hotels & Restaurants 0.03 0.01 0.04 0.01 0.04 60 Other Inland Transport 0.05 0.04 0.14 0.05 0.01 61 Other Water Transport 0.09 0.03 0.08 0.03 0.04 62 Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies 0.03 0.04 0.18 0.05 0.05 64 Post & Telecommunication 0.07 0.13 0.21 0.04 0.07 65 Financial Intermediation, except Iompulsory Social Security 0.09 0.05 0.17 0.20 0.00 70 Real Estate Activities Related Activities 0.31 0.11 1.12 0.07 0.13 0.22 0.06 0.	45	Construction	0.02	0.01	0.07	0.02	0.04
51 Wholesale Trade & Commission Trade, except of Motor Vehicles & Mot/cles 0.05 0.06 0.05 0.03 0.03 52 Retail Trade, except of Motor Vehicles & Mot/cles: Repair of Household Goods 0.04 0.02 0.05 0.03 0.03 55 Hotels & Restaurants 0.03 0.01 0.04 0.01 0.04 60 Other Inland Transport 0.05 0.04 0.12 0.03 0.01 0.04 61 Other Water Transport 0.05 0.04 0.18 0.05 0.04 62 Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies 0.03 0.04 0.18 0.05 0.05 64 Post & Telecommunications 0.07 0.13 0.21 0.04 0.07 65 Financial Intermediation, except Insurance & Pension Funding 0.18 0.08 0.23 0.16 0.05 66 Insurance & Pension Funding, except Compulsory Social Security 0.09 0.05 0.17 0.20 0.00 70 Real Estat Activities 0.31 0.11 1.12 0.07 0.19 71	50	Sale, Maint. & Repair of Motor Vehicles & Motorcycles; Retail Sale of Fuel	0.02	0.03	0.16	0.03	0.04
52 Retail Trade, except of Motor Vehicles & Mot/cles; Repair of Household Goods 0.04 0.02 0.05 0.03 0.03 55 Hotels & Restaurants 0.03 0.01 0.04 0.01 0.04 60 Other Inland Transport 0.05 0.04 0.14 0.05 0.11 61 Other Water Transport 0.05 0.04 0.28 0.03 0.04 62 Other Air Transport 0.09 0.03 0.08 0.03 0.06 63 Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies 0.03 0.04 0.18 0.05 0.05 64 Post & Telecommunications 0.07 0.13 0.21 0.04 0.07 65 Financial Intermediation, except Compulsory Social Security 0.09 0.05 0.17 0.20 0.00 70 Reat Estate Activities 0.31 0.11 1.12 0.07 0.19 71 Renting of Machinery & Equipment 0.09 0.06 0.23 0.06 0.26 72 Computer & Related Activities 0.02 0.02 0.03 <td>51</td> <td>Wholesale Trade & Commission Trade, except of Motor Vehicles & Mot/cles</td> <td>0.05</td> <td>0.06</td> <td>0.05</td> <td>0.03</td> <td>0.03</td>	51	Wholesale Trade & Commission Trade, except of Motor Vehicles & Mot/cles	0.05	0.06	0.05	0.03	0.03
55 Hotels & Restaurants 0.03 0.01 0.04 0.04 60 Other Inland Transport 0.05 0.04 0.14 0.05 0.11 61 Other Water Transport 0.05 0.04 0.28 0.03 0.04 62 Other Air Transport 0.09 0.03 0.08 0.03 0.01 63 Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies 0.03 0.04 0.18 0.05 0.07 64 Post & Telecommunications 0.07 0.13 0.21 0.04 0.07 65 Financial Intermediation, except Insurance & Pension Funding 0.18 0.08 0.23 0.16 0.05 66 Insurance & Pension Funding, except Compulsory Social Security 0.09 0.13 0.21 0.00 0.06 70 Real Estate Activities 0.31 0.11 1.12 0.07 0.19 71 Renting of Machinery & Equipment 0.09 0.06 0.23 0.06 0.03 73 Research & Development 0.01 0.02 0.01 0.03 0.01 <td>52</td> <td>Retail Trade, except of Motor Vehicles & Mot/cles; Repair of Household Goods</td> <td>0.04</td> <td>0.02</td> <td>0.05</td> <td>0.03</td> <td>0.03</td>	52	Retail Trade, except of Motor Vehicles & Mot/cles; Repair of Household Goods	0.04	0.02	0.05	0.03	0.03
60 Other Inland Transport 0.05 0.04 0.14 0.05 0.11 61 Other Water Transport 0.05 0.04 0.28 0.03 0.04 62 Other Air Transport 0.09 0.03 0.08 0.03 0.01 63 Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies 0.03 0.04 0.18 0.05 0.05 64 Post & Telecommunications 0.07 0.13 0.21 0.04 0.07 65 Financial Intermediation, except Insurance & Pension Funding 0.18 0.08 0.32 0.16 0.05 66 Insurance & Pension Funding, except Compulsory Social Security 0.09 0.13 0.32 0.09 0.06 70 Real Estate Activities 0.31 0.11 1.12 0.07 0.19 71 Renting of Machinery & Equipment 0.09 0.06 0.23 0.06 0.26 72 Computer & Related Activities 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.03 0.07 0.06	55	Hotels & Restaurants	0.03	0.01	0.04	0.01	0.04
61 Other Water Transport 0.05 0.04 0.28 0.04 62 Other Air Transport 0.09 0.03 0.08 0.03 0.01 63 Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies 0.03 0.04 0.18 0.05 0.05 64 Post & Telecommunications 0.07 0.13 0.21 0.04 0.07 65 Financial Intermediation, except Insurance & Pension Funding 0.18 0.08 0.23 0.16 0.05 66 Insurance & Pension Funding, except Compulsory Social Security 0.09 0.13 0.32 0.06 0.07 67 Activities Related to Financial Intermediation 0.09 0.05 0.17 0.20 0.00 70 Real Estate Activities 0.31 0.11 1.12 0.07 0.19 71 Renting of Machinery & Equipment 0.09 0.06 0.23 0.06 0.26 72 Computer & Related Activities 0.02 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.03 0.06 0.07	60	Other Inland Transport	0.05	0.04	0.14	0.05	0.11
62 Other Air Transport 0.09 0.03 0.08 0.01 63 Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies 0.03 0.04 0.18 0.05 64 Post & Telecommunications 0.07 0.13 0.21 0.04 0.07 65 Financial Intermediation, except Insurance & Pension Funding 0.18 0.08 0.23 0.16 0.05 66 Insurance & Pension Funding, except Compulsory Social Security 0.09 0.05 0.17 0.20 0.00 70 Real Estate Activities 0.31 0.11 1.12 0.07 0.19 71 Renting of Machinery & Equipment 0.09 0.06 0.23 0.06 0.26 72 Computer & Related Activities 0.01 0.0	61	Other Water Transport	0.05	0.04	0.28	0.03	0.04
63 Other Supporting & Auxiliary Transp. Activities of Travel Agencies 0.03 0.04 0.18 0.05 64 Post & Telecommunications 0.07 0.13 0.21 0.04 0.07 65 Financial Intermediation, except Insurance & Pension Funding 0.18 0.08 0.23 0.16 0.05 66 Insurance & Pension Funding, except Compulsory Social Security 0.09 0.13 0.32 0.59 0.06 67 Activities Related to Financial Intermediation 0.09 0.05 0.17 0.20 0.00 70 Real Estate Activities 0.31 0.11 1.12 0.07 0.19 71 Renting of Machinery & Equipment 0.09 0.06 0.23 0.06 0.26 72 Computer & Related Activities 0.05 0.03 0.07 0.06 0.60 73 Research & Development 0.04 0.02 0.14 0.01 0.30 74 Other Business Activities 0.01 0.03 0.01 0.00 0.01 80 Education 0.01 0.01 0.02 0.00	62	Other Air Transport	0.09	0.03	0.08	0.03	0.10
64 Post & Telecommunications 0.07 0.13 0.21 0.04 0.07 65 Financial Intermediation, except Insurance & Pension Funding 0.18 0.08 0.23 0.16 0.05 66 Insurance & Pension Funding, except Compulsory Social Security 0.09 0.13 0.32 0.59 0.06 67 Activities Related to Financial Intermediation 0.09 0.05 0.17 0.20 0.00 70 Real Estate Activities 0.31 0.11 1.12 0.07 0.19 71 Renting of Machinery & Equipment 0.09 0.06 0.23 0.06 0.26 72 Computer & Related Activities 0.05 0.03 0.07 0.06 0.60 73 Research & Development 0.04 0.02 0.14 0.01 0.30 74 Other Business Activities 0.01 0.03 0.01 0.00 0.13 80 Education 0.01 0.01 0.02 0.00 0.01 80 Education 0.03 0.04 0.14 0.00 0.01	63	Other Supporting & Auxiliary Transp. Activities; Activities of Travel Agencies	0.03	0.04	0.18	0.05	0.05
65 Financial Intermediation, except Insurance & Pension Funding 0.18 0.08 0.23 0.16 0.05 66 Insurance & Pension Funding, except Compulsory Social Security 0.09 0.13 0.32 0.59 0.06 67 Activities Related to Financial Intermediation 0.09 0.05 0.17 0.20 0.00 70 Real Estate Activities 0.31 0.11 1.12 0.07 0.19 71 Renting of Machinery & Equipment 0.09 0.06 0.23 0.06 0.26 72 Computer & Related Activities 0.05 0.03 0.07 0.06 0.60 73 Research & Development 0.04 0.02 0.14 0.01 0.30 74 Other Business Activities 0.01 0.03 0.01 0.00 0.13 80 Education 0.01 0.01 0.02 0.00 0.01 80 Education 0.03 0.04 0.14 0.00 0.01 90 Sewage & Refuse Disposal, Sanitation & Similar Activities 0.12 0.02 0.09 0.04 <t< td=""><td>64</td><td>Post & Telecommunications</td><td>0.07</td><td>0.13</td><td>0.21</td><td>0.04</td><td>0.07</td></t<>	64	Post & Telecommunications	0.07	0.13	0.21	0.04	0.07
66 Insurance & Pension Funding, except Compulsory Social Security 0.09 0.13 0.32 0.59 0.06 67 Activities Related to Financial Intermediation 0.09 0.05 0.17 0.20 0.00 70 Real Estate Activities 0.31 0.11 1.12 0.07 0.19 71 Renting of Machinery & Equipment 0.09 0.06 0.23 0.06 0.26 72 Computer & Related Activities 0.05 0.03 0.07 0.06 0.26 73 Research & Development 0.04 0.02 0.14 0.01 0.30 74 Other Business Activities 0.01 0.03 0.01 0.00 0.13 80 Education 0.01 0.01 0.02 0.00 0.01 80 Education 0.01 0.01 0.02 0.00 0.01 90 Sewage & Refuse Disposal, Sanitation & Similar Activities 0.12 0.02 0.09 0.04 0.13 91 Activities of Membership Organizations, nec. 0.03 0.03 0.07 0.02 0.04	65	Financial Intermediation, except Insurance & Pension Funding	0.18	0.08	0.23	0.16	0.05
67 Activities Related to Financial Intermediation 0.09 0.05 0.17 0.20 0.00 70 Real Estate Activities 0.31 0.11 1.12 0.07 0.19 71 Renting of Machinery & Equipment 0.09 0.06 0.23 0.06 0.26 72 Computer & Related Activities 0.05 0.03 0.07 0.06 0.60 73 Research & Development 0.04 0.02 0.14 0.01 0.30 74 Other Business Activities 0.02 0.02 0.05 0.03 0.07 75 Public Administration & Defence; Compulsory Social Security 0.01 0.01 0.02 0.00 0.13 80 Education 0.01 0.01 0.02 0.00 0.01 91 Activities of Membership Organizations, nec. 0.03 0.04 0.14 0.00 0.03 92 Recreational, Cultural and Sporting Activities 0.03 0.03 0.01 0.00 0.04 93 Other Service Activities 0.03 0.06 0.09 0.04 0.06	66	Insurance & Pension Funding, except Compulsory Social Security	0.09	0.13	0.32	0.59	0.06
70 Real Estate Activities 0.31 0.11 1.12 0.07 0.19 71 Renting of Machinery & Equipment 0.09 0.06 0.23 0.06 0.26 72 Computer & Related Activities 0.05 0.03 0.07 0.06 0.60 73 Research & Development 0.04 0.02 0.14 0.01 0.30 74 Other Business Activities 0.02 0.02 0.05 0.03 0.07 75 Public Administration & Defence; Compulsory Social Security 0.01 0.01 0.02 0.00 0.13 80 Education 0.01 0.01 0.02 0.00 0.05 85 Health & Social Work 0.03 0.04 0.14 0.00 0.01 90 Sewage & Refuse Disposal, Sanitation & Similar Activities 0.12 0.02 0.09 0.04 0.13 91 Activities of Membership Organizations, nec. 0.03 0.03 0.01 0.00 0.03 92 Recreational, Cultural and Sporting Activities 0.03 0.06 0.09 0.04 0.04 </td <td>67</td> <td>Activities Related to Financial Intermediation</td> <td>0.09</td> <td>0.05</td> <td>0.17</td> <td>0.20</td> <td>0.00</td>	67	Activities Related to Financial Intermediation	0.09	0.05	0.17	0.20	0.00
71 Renting of Machinery & Equipment 0.09 0.06 0.23 0.06 0.26 72 Computer & Related Activities 0.05 0.03 0.07 0.06 0.60 73 Research & Development 0.04 0.02 0.14 0.01 0.30 74 Other Business Activities 0.02 0.02 0.05 0.03 0.07 75 Public Administration & Defence; Compulsory Social Security 0.01 0.03 0.01 0.00 0.13 80 Education 0.01 0.01 0.02 0.00 0.05 85 Health & Social Work 0.03 0.04 0.14 0.00 0.01 90 Sewage & Refuse Disposal, Sanitation & Similar Activities 0.12 0.02 0.09 0.04 0.13 91 Activities of Membership Organizations, nec. 0.03 0.03 0.01 0.00 0.03 92 Recreational, Cultural and Sporting Activities 0.03 0.06 0.09 0.04 0.04 93 Other Service Activities 0.03 0.06 0.09 0.04 0.06	70	Real Estate Activities	0.31	0.11	1.12	0.07	0.19
72 Computer & Related Activities 0.05 0.03 0.07 0.06 0.07 73 Research & Development 0.04 0.02 0.14 0.01 0.30 74 Other Business Activities 0.02 0.02 0.05 0.03 0.07 75 Public Administration & Defence; Compulsory Social Security 0.01 0.03 0.01 0.00 0.13 80 Education 0.01 0.01 0.02 0.00 0.05 85 Health & Social Work 0.03 0.04 0.14 0.00 0.01 90 Sewage & Refuse Disposal, Sanitation & Similar Activities 0.12 0.02 0.09 0.04 0.13 91 Activities of Membership Organizations, nec. 0.03 0.03 0.01 0.00 0.03 92 Recreational, Cultural and Sporting Activities 0.03 0.06 0.09 0.04 0.04 93 Other Service Activities 0.03 0.06 0.09 0.04 0.06 94 Notes: Exported standard errors are robust to autocorrelation and heteroskedasticity (Newey-West, maximum lag=3) where transformed a	71	Renting of Machinery & Equipment	0.09	0.06	0.23	0.06	0.26
73Research & Development0.040.020.140.010.3074Other Business Activities0.020.020.050.030.0775Public Administration & Defence; Compulsory Social Security0.010.030.010.000.1380Education0.010.010.020.000.0585Health & Social Work0.030.040.140.000.0190Sewage & Refuse Disposal, Sanitation & Similar Activities0.120.020.090.040.1391Activities of Membership Organizations, nec.0.030.030.010.000.0392Recreational, Cultural and Sporting Activities0.030.060.090.040.0493Other Service Activities0.030.060.090.040.06Notes: Reported standard errors are robust to autocorrelation and heteroskedasticity (Newey-West, maximum lag=3) and have been transformed at a standard errors.0.030.060.090.040.06	72	Computer & Related Activities	0.05	0.03	0.07	0.06	0.60
74Other Business Activities0.020.020.020.050.030.0775Public Administration & Defence; Compulsory Social Security0.010.030.010.000.1380Education0.010.010.020.000.0585Health & Social Work0.030.040.140.000.0190Sewage & Refuse Disposal, Sanitation & Similar Activities0.120.020.090.040.1391Activities of Membership Organizations, nec.0.030.030.010.000.0392Recreational, Cultural and Sporting Activities0.030.060.090.040.0493Other Service Activities0.030.060.090.040.06Notes: Reported standard errors are robust to autocorrelation and heteroskedasticity (Newey-West, maximum lag=3) and have been transformed at	73	Research & Development	0.04	0.02	0.14	0.01	0.30
75Public Administration & Defence; Compulsory Social Security0.010.030.010.000.1380Education0.010.010.020.000.0585Health & Social Work0.030.040.140.000.0190Sewage & Refuse Disposal, Sanitation & Similar Activities0.120.020.090.040.1391Activities of Membership Organizations, nec.0.030.030.010.000.0392Recreational, Cultural and Sporting Activities0.030.060.090.040.0493Other Service Activities0.030.060.090.040.06Notes: Reported standard errors are robust to autocorrelation and heteroskedasticity (Newey-West, maximum lag=3) and have been transformed and	74	Other Business Activities	0.02	0.02	0.05	0.03	0.07
80Education0.010.010.020.000.0585Health & Social Work0.030.040.140.000.0190Sewage & Refuse Disposal, Sanitation & Similar Activities0.120.020.090.040.1391Activities of Membership Organizations, nec.0.030.030.010.000.0392Recreational, Cultural and Sporting Activities0.090.030.070.020.0493Other Service Activities0.030.060.090.040.06Notes: Reported standard errors are robust to autocorrelation and heteroskedasticity (Newey-West, maximum lag=3) and have been transformed as	75	Public Administration & Defence; Compulsory Social Security	0.01	0.03	0.01	0.00	0.13
85Health & Social Work0.030.040.140.000.0190Sewage & Refuse Disposal, Sanitation & Similar Activities0.120.020.090.040.1391Activities of Membership Organizations, nec.0.030.030.010.000.0392Recreational, Cultural and Sporting Activities0.090.030.070.020.0493Other Service Activities0.030.060.090.040.06Notes: Reported standard errors are robust to autocorrelation and heteroskedasticity (Newey-West, maximum lag=3) and have been transformed and	80	Education	0.01	0.01	0.02	0.00	0.05
90Sewage & Refuse Disposal, Sanitation & Similar Activities0.120.020.090.040.1391Activities of Membership Organizations, nec.0.030.030.010.000.0392Recreational, Cultural and Sporting Activities0.090.030.070.020.0493Other Service Activities0.030.060.090.040.06Notes: Reported standard errors are robust to autocorrelation and heteroskedasticity (Newey-West, maximum lag=3) and have been transformed at	85	Health & Social Work	0.03	0.04	0.14	0.00	0.01
91Activities of Membership Organizations, nec.0.030.030.030.010.000.0392Recreational, Cultural and Sporting Activities0.090.030.070.020.0493Other Service Activities0.030.060.090.040.06Notes: Reported standard errors are robust to autocorrelation and heteroskedasticity (Newey-West, maximum lag=3) and have been transformed as	90	Sewage & Refuse Disposal, Sanitation & Similar Activities	0.12	0.02	0.09	0.04	0.13
92 Recreational, Cultural and Sporting Activities 0.09 0.03 0.07 0.02 0.04 93 Other Service Activities 0.03 0.06 0.09 0.04 0.06 Notes: Reported standard errors are robust to autocorrelation and heteroskedasticity (Newey-West, maximum lag=3) and have been transformed as 0.03 0.06 0.09 0.04	91	Activities of Membership Organizations, nec.	0.03	0.03	0.01	0.00	0.03
93 Other Service Activities 0.03 0.06 0.09 0.04 0.06 Notes: Reported standard errors are robust to autocorrelation and heteroskedasticity (Newey-West, maximum lag=3) and have been transformed as and heteroskedasticity (Newey-West, maximum lag=3) and have been transformed as	92	Recreational, Cultural and Sporting Activities	0.09	0.03	0.07	0.02	0.04
Notes: Reported standard errors are robust to autocorrelation and heteroskedasticity (Newey-West, maximum lag=3) and have been transformed as	93	Other Service Activities	0.03	0.06	0.09	0.04	0.06
	Notes:	Reported standard errors are robust to autocorrelation and heteroskedasticity (Net	wey-West, maxin	num lag=3)	and have b	been transfo	rmed as

Table A7.b. HAC standard errors corresponding to the mark-up estimates by sector and country of table A6.b.

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Figure A1. Sectoral mark-ups ordered by size



2.20 1.80Euro Area 1.40 1.000.60 1.40 USA 0.60 1.00 1.80 2.20 Services • Manufacturing & Construction 45 degree line

Figure A2. Sectoral mark-ups, Euro Area vs. the US

Note: Sectors 21, 70 & 71 are treated as outliers (mark-ups higher than 2.5) and are excluded.

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