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ABSTRACT

Allowing for three labor market settings (perfect competition or right-to-manage bargaining, efficient bargaining and monopsony), this paper relies on two extensions of Hall's econometric framework for estimating simultaneously price-cost margins and scale economies. Using an unbalanced panel of 17,653 firms over the period 1986-2001 in France, 8,725 firms over the period 1994-2006 in Japan and 7,828 firms over the period 1993-2008 in the Netherlands, we first apply two procedures to classify 30 comparable manufacturing industries in 6 distinct regimes that differ in terms of the type of competition prevailing in product and labor markets. For each of the three predominant regimes in each country, we then investigate industry differences in the estimated product and labor market imperfections and scale economies. We find important regime differences across the three countries and also observe differences in the levels of product and labor market imperfections and scale economies within regimes.

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1 Introduction

There is an abundant literature on production function estimation studying how firms convert inputs into outputs and the efficiency with which this occurs (see Syverson, 2011 for a survey). This literature as of late has given increasing attention to possible biases that market imperfections –particularly in the product market– could induce in production function and productivity estimates. There is a long tradition in applied industrial organization of estimating product market power (see De Loecker and Warzynski, 2012 for references). While most economists believe that product and labor market imperfections almost surely exist to one degree or another, only few have explicitly accounted for their joint influence on production function estimation at the micro level (see Dobbelaere and Mairesse, 2013 for references). Contributing to the econometric literature on estimating micro-economic production functions and the one on estimating simultaneously market imperfections in product and labor markets, this paper serves the purpose of quantifying industry differences in product and labor market imperfections and scale economies using firm-level data in France, Japan and the Netherlands. Do manufacturing industries in the three countries under consideration belong to different *regimes* characterizing the type of competition prevailing in product and labor markets? To what extent do manufacturing industries within a particular regime differ in the *degree of imperfections* in the product and labor markets in which they operate? These are the main questions that we address.

In this paper, we rely on two extensions of Hall's (1988) econometric framework for estimating simultaneously price-cost margins and scale economies using firm panel data that take into account imperfections in the labor market. Instead of imposing a particular labor market setting on the data –a common practice in empirical studies estimating labor market imperfections– we follow Dobbelaere and Mairesse (2013) and use econometric production functions as a tool for testing the competitiveness of product and labor markets and evaluating their degree of imperfection. We consider two product market settings (perfect competition (PC) and imperfect competition (IC)) and three labor market settings (perfect competition or right-to-manage bargaining (PR), efficient bargaining (EB) and monopsony (MO)). We thus distinguish 6 regimes.

Our empirical analysis is based on three large unbalanced panels of manufacturing firms: 17,653 firms over the period 1986-2001 in France, 8,725 firms over the period 1994-2006 in Japan and 7,828 firms over the period 1993-2008 in the Netherlands. It consists of two parts. In the first part, we apply two procedures to classify 30 comparable manufacturing industries in distinct regimes that differ in terms of the type of competition prevailing in product and labor markets in each country. The first classification procedure is based on point estimates of our parameters of interest and enables a complete classification whilst the second is based on confidence intervals around estimated parameters which entails a more statistically correct –but incomplete– characterization of industries. We observe important differences in the prevalent product and labor market settings, and hence in the prevalent regimes across the three countries. Irrespective of the classification procedure, we find that (i) the proportion of industries (and firms) that is characterized by imperfect competition in the product market is much higher in France and the Netherlands than in Japan and (ii) the most prevalent labor market setting is efficient bargaining in France and perfect competition or right-to-manage bargaining in Japan and the Netherlands. As such, according to both classification procedures, the dominant regime is one of imperfect competition in the product market and efficient bargaining in the labor market in France, one of perfect competition in the product market and perfect competition or right-to-manage bargaining in the labor market in Japan and one of imperfect competition in the product market and perfect competition or right-to-manage bargaining in the labor market in the Netherlands.

In the second part, we investigate industry differences in the estimated product and labor market imperfection parameters within the three predominant regimes in each country. In addition to the important cross-country regime differences that our analysis reveals, we also find differences in the levels of market imperfections and scale economies within a regime.

We proceed as follows. Section 2 discusses the theoretical framework and elucidates the econometric implementation. Section 3 presents the firm panel data for France, Japan and the Netherlands. Section 4 applies two classification procedures to characterize the type of competition in the product and labor markets of our selected manufacturing industries. Section 5 analyses industry differences in the degree of market imperfections within predominant regimes. Section 6 concludes.

2 Theoretical framework and econometric implementation

2.1 Theoretical framework

This section extends the framework of Hall (1988) for estimating price-cost margins and scale economies. To this end, we follow Dobbelaere and Mairesse (2013) by considering three labor market settings: perfect competition or right-to-manage bargaining (Nickell and Andrews, 1983), efficient bargaining (McDonald and Solow, 1981) and monopsony (Manning, 2003). This section contains the main ingredients of the theoretical framework. For technical details, we refer to Appendix A.

We start from a production function $Q_{it} = \Theta_{it} F(N_{it}, M_{it}, K_{it})$, where i is a firm index, t a time index, N is labor, M is material input and K is capital. $\Theta_{it} = Ae^{\eta_i + u_t + \upsilon_{it}}$, with η_i an unobserved firm-specific effect, u_t a year-specific intercept and υ_{it} a random component, is an index of technical change or "true" total factor productivity. Denoting the logarithm of Q_{it}, N_{it}, M_{it}, K_{it} and Θ_{it} by q_{it}, n_{it}, m_{it}, k_{it} and θ_{it} respectively, the logarithmic specification of the production function gives:

$$q_{it} = (\varepsilon_N^Q)_{it} n_{it} + (\varepsilon_M^Q)_{it} m_{it} + (\varepsilon_K^Q)_{it} k_{it} + \theta_{it} \tag{1}$$

where $(\varepsilon_J^Q)_{it}$ $(J = N, M, K)$ is the elasticity of output with respect to input factor J.

Firms operate under imperfect competition in the product market (IC). We allow for three labor market settings (LMS): perfect competition or right-to-manage bargaining (PR)[1], efficient bargaining (EB) and monopsony (MO). We assume that material input and labor are variable factors. Short-run profit maximization implies the following first-order condition with respect to material input:

$$(\varepsilon_M^Q)_{it} = \mu_{it}\,(\alpha_M)_{it} \tag{2}$$

where $(\alpha_M)_{it} = \frac{j_{it}M_{it}}{P_{it}Q_{it}}$ is the share of material costs in total revenue and $\mu_{it} = \frac{P_{it}}{(C_Q)_{it}}$ refers to the mark-up of output price P_{it} over marginal cost $(C_Q)_{it}$. Depending on the prevalent LMS, short-run profit maximization implies the following first-order condition with respect to labor:

$$\begin{aligned}(\varepsilon_N^Q)_{it} &= \mu_{it}\,(\alpha_N)_{it} \qquad \text{if } LMS = PR &(3)\\ &= \mu_{it}\,(\alpha_N)_{it} - \mu_{it}\gamma_{it}\left[1-(\alpha_N)_{it}-(\alpha_M)_{it}\right] \qquad \text{if } LMS = EB &(4)\\ &= \mu_{it}\,(\alpha_N)_{it}\left(1+\frac{1}{(\varepsilon_w^N)_{it}}\right) \qquad \text{if } LMS = MO &(5)\end{aligned}$$

where $(\alpha_N)_{it} = \frac{w_{it}N_{it}}{P_{it}Q_{it}}$ is the share of labor costs in total revenue. $\gamma_{it} = \frac{\phi_{it}}{1-\phi_{it}}$ represents the relative extent of rent sharing, $\phi_{it} \in [0,1]$ the absolute extent of rent sharing and $(\varepsilon_w^N)_{it} \in \Re_+$ the wage elasticity of the labor supply. From the first-order conditions with respect to material input and labor, it follows that the parameter of joint market imperfections (ψ_{it}):

$$\begin{aligned}\psi_{it} &= \frac{(\varepsilon_M^Q)_{it}}{(\alpha_M)_{it}} - \frac{(\varepsilon_N^Q)_{it}}{(\alpha_N)_{it}} &(6)\\ &= 0 \qquad \text{if } LMS = PR &(7)\\ &= \mu_{it}\gamma_{it}\left[\frac{1-(\alpha_N)_{it}-(\alpha_M)_{it}}{(\alpha_N)_{it}}\right] > 0 \qquad \text{if } LMS = EB &(8)\\ &= -\mu_{it}\frac{1}{(\varepsilon_w^N)_{it}} < 0 \qquad \text{if } LMS = MO &(9)\end{aligned}$$

Assuming that the elasticity of scale, $\lambda_{it} = (\varepsilon_N^Q)_{it} + (\varepsilon_M^Q)_{it} + (\varepsilon_K^Q)_{it}$, is known, the capital elasticity can be expressed as:

$$(\varepsilon_K^Q)_{it} = \lambda_{it} - (\varepsilon_N^Q)_{it} - (\varepsilon_M^Q)_{it} \tag{10}$$

Inserting Eqs. (2), (6) and (10) in Eq. (1) and rearranging terms gives:

$$q_{it} = \mu_{it}\left[(\alpha_N)_{it}\,(n_{it}-k_{it}) + (\alpha_M)_{it}\,(m_{it}-k_{it})\right] + \psi_{it}(\alpha_N)_{it}\,(k_{it}-n_{it}) + \lambda_{it}k_{it} + \theta_{it} \tag{11}$$

2.2 Econometric implementation

Eq. (6) shows that the differences between the estimated output elasticities of labor and materials and their revenue shares are key to empirical identification of the product and labor market imperfection parameters.

[1] Our framework does not allow to disentangle perfect competition in the labor market from right-to-manage bargaining. In both settings, labor is unilaterally determined by the firm from profit maximization, i.e. the wage rate equals the marginal revenue of labor (see Section A.1 in Appendix A).

Essential is that the test for the prevalent LMS assumes that firms take the price of materials as given. In a perfectly competitive labor market or in a right-to-manage bargaining setting, the only source of discrepancy between the estimated output elasticity of labor and the share of labor costs in revenue is the firm price-cost mark-up, just like in the materials market [Eq. (3)]. Therefore, the difference in the two factors' output-elasticity-to-revenue-share ratios, i.e. the parameter of joint market imperfections, equals zero [Eq. (7)].

In an efficient bargaining setting, the marginal employee receives a wage that exceeds his/her marginal revenue since efficient bargaining allocates inframarginal gains across employees. As such, the output-elasticity-to-revenue-share ratio for labor becomes smaller, and smaller than the respective ratio for materials in particular. Hence, there is a positive difference between the materials and labor ratios, i.e. the parameter of joint market imperfections is positive [Eq. (8)].

In a monopsony setting, on the other hand, the marginal employee obtains a wage that is less than his/her marginal revenue. As such, the output-elasticity-to-revenue-share ratio for labor exceeds the respective ratio for materials, yielding the negative parameter of joint market imperfections [Eq. (9)].

Depending on the LMS, it follows from the parameter of joint market imperfections that the differences between the estimated output elasticities of labor and materials and their revenue shares can be mapped into either the firm price-cost mark-up and the extent of rent sharing [Eq. (8)] or the firm price-cost mark-up and the firm labor supply elasticity [Eq. (9)].

Since our study aims at (*i*) comparing regime differences in terms of the type of competition prevailing in product and labor markets across France, Japan and the Netherlands and (*ii*) assessing within-regime industry differences in the estimated product and labor market imperfection parameters and the scale elasticity parameters in each of the countries, we estimate *average* parameters. There are many sources of variation in input shares. Some of them are related to variation in machinery and capacity utilization, i.e. variation in the business cycle. When deriving our parameters of interest, we want to abstract from such sources of variation. Therefore, we assume *average* input shares. The empirical specification that acts as the bedrock for the regressions at the industry level is hence given by:

$$q_{it} = \mu \left[\alpha_N \left(n_{it} - k_{it} \right) + \alpha_M \left(m_{it} - k_{it} \right) \right] + \psi \alpha_N \left(k_{it} - n_{it} \right) + \lambda k_{it} + \zeta_{it} \quad (12)$$

The estimated industry-specific joint market imperfections parameter $\left(\widehat{\psi}_j \right)$ determines the regime characterizing the type of competition prevailing in the product and the labor market. *A priori*, 6 distinct regimes are possible: (*1*) perfect competition in the product market and perfect competition or right-to-manage bargaining in the labor market, (*2*) imperfect competition in the product market and perfect competition or right-to-manage bargaining in the labor market, (*3*) perfect competition in the product market and efficient bargaining in the labor market, (*4*) imperfect competition in the product market and efficient bargaining in the labor market, (*5*) perfect competition in the product market and monopsony in the labor market and (*6*) imperfect competition in the product market and monopsony in the labor market. We denote the 6 possible regimes by $R \in \Re = \{PC\text{-}PR, IC\text{-}PR, PC\text{-}EB, IC\text{-}EB, PC\text{-}MO, IC\text{-}MO\}$, where the first part reflects the type of competition in the product market and the second part reflects the type of competition in the labor market. Once the regime is determined, we derive the product and labor market imperfection parameters from the estimated joint market imperfections parameter.

3 Data description

The French data are based on firm accounting information from EAE ("Enquête Annuelle d' Entreprise", "Service des Etudes et Statistiques Industrielles" (SESSI)). The Japanese data are sourced from the confidential micro database of the "Kigyou Katsudou Kihon Chousa Houkokusho" (Basic Survey of Japanese Business Structure and Activities (BSJBSA)) collected annually by the Research and Statistics Department (METI).[2] The survey is compulsory for firms with more than 50 employees and with capital of more than 30 million yen. The Dutch data are sourced from the Production Surveys (PS) at Statistics Netherlands which are collected annually by the "Centraal Bureau voor de Statistiek" (CBS). A combination of census and stratified random sampling is used for each wave of the PS. A census is used for the population of enterprises with at least fifty employees and a stratified random sampling is used for enterprises with fewer than fifty employees. The stratum variables are the economic activity and the number of employees of an enterprise. For each country, our estimation sample is restricted to firms having at least four consecutive observations. After some trimming on input shares in total revenue and input growth rates to eliminate outliers and anomalies, we end up with an unbalanced panel of 17,653 firms covering the period 1986-2001 in France (FR), 8,725 firms spanning the period 1994-2006 in Japan (JP) and 7,828 firms over the period 1993-2008 in the Netherlands (NL). Table B.1 in Appendix B gives the panel structure of the estimation sample by country.

Output (Q) is defined as current production deflated by the two-digit producer price index in FR and real gross output measured by nominal sales divided by the industry-level gross output price index in JP and NL. Labor (N) refers to the average number of employees in FR, the number of man-hours computed as each firm's total number of employees multiplied by industry-level working hours in JP and the number of employees in September of a given year in NL. Material input is defined as intermediate consumption deflated by the industry-level intermediate consumption price index in the three countries. The capital stock (K) is measured by the gross bookvalue of fixed assets in FR, computed from tangible assets and investment based on the perpetual inventory method in JP[3] and proxied by depreciation of fixed assets deflated by the industry-level gross fixed

[2] For details on the Japanese data, we refer to Kiyota *et al.* (2009).
[3] Details on the measurement of the user cost of capital can be found in Section B.1 in Appendix B.

capital formation price index for all assets in NL. The working hours and price deflators for JP are obtained from the Japan Industrial Productivity (JIP) 2009 database, which was compiled by RIETI and Hitotsubashi University.[4] The price deflators for NL are obtained from the EUKLEMS database (November 2009 release, March 2011 update). The shares of labor (α_N) and material input (α_M) are constructed by dividing respectively the firm total labor cost and undeflated intermediate consumption by the firm undeflated production and by taking the average of these ratios over adjacent years.

Table 1 reports the means, standard deviations and quartile values of our main variables by country. The average growth rate of real firm output is 3.3% per year in FR, 2.0% in JP and 2.5% in NL. In FR, labor, materials and capital have increased at an average annual growth rate of 1.4%, 4.9% and 0.8% respectively. In JP, labor and capital have decreased at an average annual growth rate of 0.2% and 0.3% respectively, while materials has increased at an average annual growth rate of 1.3%. In NL, labor, materials and capital have increased at an average annual growth rate of 0.4%, 2.6% and 1.6% respectively. The Solow residual or the conventional measure of total factor productivity (TFP) is stable over the considered period in each country. As expected for firm-level data, the dispersion of all these variables is considerably large. For example, TFP growth is lower than -5.2% (-2.2%) [-4.3%] for the first quartile of firms and higher than 5.9% (4.2%) [5.9%] for the upper quartile in FR (JP) [NL].

<Insert Table 1 about here>

For illustrative purposes, we estimate Eq. (11) at the manufacturing level using the GMM estimator.[5] Table B.2 in Appendix B present the results. From the estimated market imperfections parameter $\left(\widehat{\psi}\right)$, we infer that the IC-EB-regime applies at the manufacturing level in FR and NL and the PC-PR-regime in JP.[6] In FR (NL), the price-cost mark-up is estimated at 1.252 (1.429) and the absolute extent of rent sharing at 0.324 (0.245). In JP, the price-cost mark-up is estimated at 0.989.

4 Classification of industries

In each country, we consider 30 comparable manufacturing industries, making up our estimation sample. This decomposition is detailed enough for our purpose and ensures that each industry

[4] For more details on the JIP database, see Fukao *et al.* (2007).

[5] The set of instruments includes the lagged levels of n, m and k dated $(t-2)$ and $(t-3)$ in the first-differenced equations and the lagged first-differences of n, m and k dated $(t-1)$ in the levels equations. We retrieved the first-step robust standard errors.

[6] If $LMS = EB$, the price-cost mark-up ($\widehat{\mu}$) and the relative and absolute extent of rent-sharing parameters $\left(\widehat{\gamma} \text{ and } \widehat{\phi} \text{ respectively}\right)$ can be retrieved from the joint market imperfections parameter $\left(\widehat{\psi}\right)$ [see Eq. (8)]. If $LMS = PR$, however, we can only retrieve the price-cost mark-up ($\widehat{\mu}$) from the joint market imperfections parameter $\left(\widehat{\psi}\right)$ [see Eq. (7)]. This explains why $\widehat{\mu}$, $\widehat{\gamma}$ and $\widehat{\phi}$ are reported for FR and NL and $\widehat{\mu}$ is reported for JP in Table B.2 in Appendix B.

contains a sufficient number of observations (minimum: 342 observations). Table B.3 in Appendix B presents the industry repartition of the estimation sample and the number of firms and the number of observations by industry and country.

From Section 2, it follows that the industry-specific joint market imperfections parameter captures (im)perfect competition in both the product and the labor market and as such determines the prevalent regime to which each industry belongs. For each industry $j \in \{1, \ldots, 30\}$, we estimate a standard Cobb-Douglas production function [Eq. (12)] using the system GMM estimator. We apply two classification procedures.

1) Classification procedure 1, on which we comment below, is summarized as follows:

Classification procedure 1: Hypothesis test	Null hypothesis not rejected
H_{10}: $\left(\mu_j - 1 = \frac{\left(\varepsilon_M^Q\right)_j}{(\alpha_M)_j} - 1\right) \leq 0.10$ and H_{20}: $\left(\psi_j = \frac{\left(\varepsilon_M^Q\right)_j}{(\alpha_M)_j} - \frac{\left(\varepsilon_N^Q\right)_j}{(\alpha_N)_j}\right) \leq \lvert 0.30 \rvert$	$R = PC\text{-}PR$
H_{10}: $\left(\mu_j - 1 = \frac{\left(\varepsilon_M^Q\right)_j}{(\alpha_M)_j} - 1\right) > 0.10$ and H_{20}: $\left(\psi_j = \frac{\left(\varepsilon_M^Q\right)_j}{(\alpha_M)_j} - \frac{\left(\varepsilon_N^Q\right)_j}{(\alpha_N)_j}\right) \leq \lvert 0.30 \rvert$	$R = IC\text{-}PR$
H_{10}: $\left(\mu_j - 1 = \frac{\left(\varepsilon_M^Q\right)_j}{(\alpha_M)_j} - 1\right) \leq 0.10$ and H_{20}: $\left(\psi_j = \frac{\left(\varepsilon_M^Q\right)_j}{(\alpha_M)_j} - \frac{\left(\varepsilon_N^Q\right)_j}{(\alpha_N)_j}\right) > 0.30$	$R = PC\text{-}EB$
H_{10}: $\left(\mu_j - 1 = \frac{\left(\varepsilon_M^Q\right)_j}{(\alpha_M)_j} - 1\right) > 0.10$ and H_{20}: $\left(\psi_j = \frac{\left(\varepsilon_M^Q\right)_j}{(\alpha_M)_j} - \frac{\left(\varepsilon_N^Q\right)_j}{(\alpha_N)_j}\right) > 0.30$	$R = IC\text{-}EB$
H_{10}: $\left(\mu_j - 1 = \frac{\left(\varepsilon_M^Q\right)_j}{(\alpha_M)_j} - 1\right) \leq 0.10$ and H_{20}: $\left(\psi_j = \frac{\left(\varepsilon_M^Q\right)_j}{(\alpha_M)_j} - \frac{\left(\varepsilon_N^Q\right)_j}{(\alpha_N)_j}\right) \leq -0.30$	$R = PC\text{-}MO$
H_{10}: $\left(\mu_j - 1 = \frac{\left(\varepsilon_M^Q\right)_j}{(\alpha_M)_j} - 1\right) > 0.10$ and H_{20}: $\left(\psi_j = \frac{\left(\varepsilon_M^Q\right)_j}{(\alpha_M)_j} - \frac{\left(\varepsilon_N^Q\right)_j}{(\alpha_N)_j}\right) \leq -0.30$	$R = IC\text{-}MO$

Classification 1 is entirely based on the point estimates of the price-cost mark-up μ_j and the joint market imperfections parameter ψ_j. On pragmatic grounds, we argue that defining $H_0 : \left(\mu_j - 1\right) = \psi_j = 0$ is too excessive. Based on the industry-specific input shares $\left(\alpha_J\right)_j$ $(J = N, M, K)$ and the industry-specific output elasticities $\left(\widehat{\varepsilon}_J^Q\right)_j$ $(J = N, M, K)$ of the three countries, we select a common threshold of 1.10 for μ_j and $|0.30|$ for ψ_j.[7] For example, if our null hypothesis is that imperfect competition in the product market and efficient bargaining in the labor market feature the industry, we perform the following test: $H_{10} : \left(\mu_j - 1\right) > 0.10$ and $H_{20} : \psi_j > 0.30$. The test rejects that the *IC*-*EB*-regime applies if either H_{10} or H_{20} is rejected. By construction, this procedure does not take into account the precision of the estimates but has the advantage of entailing a *complete* classification.

Table 2 summarizes the resulting industry classification. Columns 3-5 in Table B.5 in Appendix B provide details on the specific industries belonging to each regime according to classification 1. Focusing on the product market side, more than 83% of the industries comprising more than 91% of the firms are typified by imperfect competition in FR and NL whilst this does only hold for 43% of the industries comprising 39% of the firms in JP. On the labor market side, 30% of the industries comprising 55% of the firms are characterized by efficient bargaining, 63% of the industries comprising 43% of the firms by perfect competition or right-to-manage bargaining and monopsony features only 7% of the industries comprising 2% of the firms in FR. In JP, 53% of the industries comprising 51% of the firms are characterized by perfect competition or right-to-manage bargaining, 23% of the industries comprising 30% of the firms by monopsony and 23% of the industries comprising 20% of the firms by efficient bargaining. In NL, the three labor market settings are more evenly distributed compared to FR and JP: 40% of the industries comprising 55% of the firms are characterized by perfect competition or right-to-manage bargaining, 30% of the industries comprising 25% of the firms by monopsony and 30% of the industries comprising 20% of the firms by efficient bargaining.

Taken together, the three predominant regimes in FR are *IC*-*EB*, *IC*-*PR* and *PC*-*MO*:

- *IC*-*EB*-regime: 30% of the industries comprising 51% of the firms,
- *IC*-*PR*-regime : 40% of the industries comprising 38% of the firms and
- *IC*-*MO*-regime: 13% of the industries comprising 5% of the firms.

In JP, the three predominant regimes are *PC*-*PR*, *PC*-*MO* and *IC*-*PR*:

- *PC*-*PR*-regime: 23% of the industries comprising 27% of the firms,
- *PC*-*MO*-regime: 20% of the industries comprising 27% of the firms and
- *IC*-*PR*-regime: 30% of the industries comprising 24% of the firms.

[7] Table B.4 in Appendix B motivates the choice of $|0.30|$ for ψ_j.

In NL, the three predominant regimes are IC-PR (which is by far the dominant regime), IC-EB and IC-MO:

- IC-PR-regime: 37% of the industries comprising 53% of the firms,
- IC-EB-regime: 30% of the industries comprising 20% of the firms and
- IC-MO-regime: 20% of the industries comprising 18% of the firms.

<Insert Table 2 about here>

2) Classification procedure 2, on which we comment below, is summarized as follows:

Classification procedure 2:	Statistical significance level	Null hypothesis not rejected
Hypothesis test for product market setting (PMS)		
PC is null: H_{10}: $\mu_j - 1 \leq 0.10$ against H_{1a}: $\mu_j - 1 > 0.10$	5%	$PMS = PC$
IC is null: H_{10}: $\mu_j - 1 > 0.10$ against H_{1a}: $\mu_j - 1 \leq 0.10$	5%	$PMS = IC$
Hypothesis test for EB-labor market setting (LMS)		
PR is null: H_{10}: $\psi_j \leq 0.30$ against H_{1a}: $\psi_j > 0.30$	5%	$LMS = PR$
EB is null: H_{10}: $\psi_j > 0.30$ against H_{1a}: $\psi_j \leq 0.30$	5%	$LMS = EB$
Hypothesis test for MO-labor market setting (LMS)		
PR is null: H_{10}: $\psi_j > -0.30$ against H_{1a}: $\psi_j \leq -0.30$	5%	$LMS = PR$
MO is null: H_{10}: $\psi_j \leq -0.30$ against H_{1a}: $\psi_j > -0.30$	5%	$LMS = MO$

Classification procedure 2 is based on confidence intervals around estimated parameters. To determine the relevant product/labor market setting, we consider two *a priori* null hypotheses. Focusing on the product market side, choosing IC as the null hypothesis can be interpreted as believing more strongly in (some degree of) imperfect competition, whilst the opposite is true when choosing PC as the null hypothesis. The choice of two *a priori* null hypotheses allows the characterization of three types of industries. In particular, industry j

- is characterized to be highly imperfectly competitive or far from perfectly competitive, denoted by IC^*, if $PMS = IC$ under both null hypotheses.
- is characterized to be weakly imperfectly competitive or nearly perfectly competitive, denoted by PC^*, if $PMS = PC$ under both null hypotheses.
- belongs to the overlapping category, denoted by mover, if the PMS-type is different under both null hypotheses.

Focusing on the labor market side, choosing EB/MO as the null hypothesis can be interpreted as believing more strongly that the marginal employee receives a wage that differs from his/her marginal revenue, whilst choosing PR as the null hypothesis supports more the belief that the marginal employee receives a wage equal to his/her marginal revenue. The choice of two *a priori* null hypotheses allows the characterization of four types of industries. In particular, industry j

- is most likely to be characterized by efficient bargaining, denoted by EB^*, if $LMS = EB$ under both null hypotheses.
- is most likely to be characterized by monopsony, denoted by MO^*, if $LMS = MO$ under both null hypotheses.
- is most likely to be characterized by perfect competition/right-to-manage bargaining, denoted by PR^*, if $LMS = PR$ under both null hypotheses.
- belongs to the overlapping category, denoted by mover, if the LMS-type is different under both null hypotheses.

Table 3a reports the three types of industries on the product market side and the four types of industries on the labor market side. Table 3b summarizes the resulting –incomplete– industry classification. Table B.5 in Appendix B provides details on (i) the characterization of the specific industries (columns 6-8 on the product market side, columns 9-11 on the labor market side) and (ii) the specific industries belonging to a particular regime (columns 12-14).

Let us first focus the discussion on the product market side. A large proportion of industries is characterized to be highly imperfectly competitive in FR and NL: 63% of the industries comprising 83% of the firms in the former and 83% of the industries comprising 90% of the firms in the latter. In contrast, 33% of the industries comprising 37% of the firms are typified to be nearly perfectly competitive in JP. In NL (FR), only 13% (7%) of the industries making up 9% (13) of the firms are typified as movers whereas 43% of the industries comprising 38% of the firms belong to the overlapping category in JP.

On the labor market side, about 50% of the industries making up about 50% of the firms are typified as movers in the three countries. In FR, 23% of the industries comprising 41% of the firms are most likely to be characterized by efficient bargaining whereas the remaining 30% of industries comprising 10% of the firms are most likely to be characterized by perfect competition/right-to-manage bargaining. In NL and JP, about 40% of the industries making up more than 42% of the firms are typified as PR^*-industries whereas only a small proportion –7% (10%) of the industries comprising 4% (6%) of the firms in JP (NL)– are characterized as EB^*-industries.

<Insert Table 3a about here>

Whereas classification procedure 2 provides a more statistically correct characterization of industries, it entails an incomplete classification. From Table 3b, it follows that only about 40% of the industries comprising 40% of the firms can be classified in one of the six regimes in FR and NL whereas this is only true for 27% of the industries making up 28% of the firms in JP. The dominant regime is

- IC^*-EB^* in FR, covering 23% of the industries comprising 41% of the firms,
- PC^*-PR^* in JP, covering 17% of the industries comprising 22% of the firms and
- IC^*-PR^* in NL, covering 27% of the industries comprising 33% of the firms.

<Insert Table 3b about here>

Summing up, we observe important differences in the prevalent product and labor market settings, and hence in the prevalent regimes across the three countries. Irrespective of the classification procedure, the proportion of industries (and firms) that is characterized by imperfect competition in the product market is much higher in FR and NL than in JP. Irrespective of the classification procedure, the most prevalent labor market setting is efficient bargaining in FR and perfect competition or right-to-manage bargaining in JP and NL. As such, according to both classification procedures, the dominant regime is one of imperfect competition in the product market and efficient bargaining in the labor market in FR, one of perfect competition in the product market and perfect competition or right-to-manage bargaining in the labor market in JP and one of imperfect competition in the product market and perfect competition or right-to-manage bargaining in the labor market in NL.[8]

Does the finding of important regime differences across the three countries imply that manufacturing industries in the three countries differ considerably in the type of competition prevailing in product and labor markets? To answer that question, we compare the relevant regime of each industry $j \in \{1, \ldots, 30\}$ across the three countries. To ensure a complete classification, we base the comparison on classification procedure 1. From columns 3-5 in Table B.5 in Appendix B, it follows that ten industries are characterized by the same product market setting in each of the three countries. The livestock, seafood and flour products industry is characterized by perfect competition whereas industries manufacturing textiles, furniture, chemicals, pharmaceuticals, metals, special industrial machinery, electronic parts and components, other transport equipment and miscellaneous

[8] In Dobbelaere and Mairesse (2013), we applied a slightly different classification procedure, consisting of two parts. In the first part, we performed an F-test of the joint hypothesis $H_0 : (\mu_j - 1) = \psi_j = 0$, where the alternative is that at least one of the parameters does not equal zero. The first part allows to select industries belonging to the PC-PR-regime. In the second part, we tested a 2-dimensional hypothesis by conducting two separate t-tests to classify the remaining industries in one of the 5 other regimes. Comparing this classification procedure with classification procedure 1 in the current study shows (i) no differences in the prevalent PMS in FR and NL, but a slightly higher prevalence of imperfect competition in JP and (ii) no differences in the prevalent LMS in FR, only minor differences in NL (classification procedure 1 results in a slightly lower prevalence of EB and a slightly higher prevalence of PR and MO) and a much higher (lower) prevalence of MO (PR) according to classification procedure 1 in JP. Consistent with classification procedures 1 & 2, we find that the dominant regime is IC-EB, PC-PR and IC-PR in FR, JP and NL respectively. Details on this classification procedure are not reported but available upon request.

manufacturing products are characterized by imperfect competition. Three industries are typified by the same labor market setting in each of the three countries. Industries manufacturing furniture and metals are characterized by perfect competition or right-to-manage bargaining whilst the miscellaneous machinery industry is characterized by monopsony.

5 Within-regime industry differences in parameters of interest

To what extent do manufacturing industries within a particular regime differ in the *degree of imperfections* in the product and labor markets in which they operate? To address that question, we condition our answer on classification 1 and investigate industry differences in the estimated industry-specific scale elasticity parameter $\widehat{\lambda}_j$, joint market imperfections parameter $\widehat{\psi}_j$, and corresponding price-cost mark-up $\widehat{\mu}_j$ and absolute extent of rent-sharing $\widehat{\phi}_j$ or labor supply elasticity $\left(\widehat{\varepsilon}_w^N\right)_j$ parameters within each of the three predominant regimes in FR, JP and NL.

Table 4 presents the industry mean and the industry quartile values of the system GMM results within the three predominant regimes in each country. The left part of Table 4 reports the estimated scale elasticity parameter, the middle part the estimated joint market imperfections parameter and the right part the relevant product and labor market imperfection parameters, i.e. the price-cost mark-up within *PC*-*PR* and *IC*-*PR*, the price-cost mark-up and the extent of rent sharing within *IC*-*EB*, and the price-cost mark-up and the labor supply elasticity within *PC*-*MO* and *IC*-*MO*. We also present the industry-specific profit ratio parameter, which can be expressed as the estimated industry-specific price-cost mark-up divided by the estimated industry-specific scale elasticity $\left(\frac{\widehat{\mu}}{\widehat{\lambda}}\right)_j$. This ratio shows that the source of profit lies either in imperfect competition or decreasing returns to scale. The standard errors (σ) of $\widehat{\mu}_j$, $\widehat{\gamma}_j$, $\widehat{\phi}_j$, $\widehat{\beta}_j$ and $\left(\widehat{\varepsilon}_w^N\right)_j$ are computed using the Delta method (Wooldridge, 2002).[9] All industry-specific estimates are presented in Table B.6 in Appendix B.[10] In addition to the parameters reported in Table 4, Table B.6 also reports the computed factor shares and the output elasticity estimates. In Table B.6, industries within the *PC*-*PR*- and *IC*-*PR*-regimes are ranked according to $\widehat{\mu}_j$. Within the *PC*-*EB*- and *IC*-*EB*-regimes, we rank industries

[9] Dropping subscript j, $\widehat{\mu}$, $\widehat{\gamma}$, $\widehat{\phi}$, $\widehat{\beta}$ and $\widehat{\varepsilon}_w^N$ are derived as follows: $\widehat{\mu} = \frac{\widehat{\varepsilon}_M^Q}{\alpha_M}$, $\widehat{\gamma} = \frac{\widehat{\varepsilon}_N^Q - \left(\widehat{\varepsilon}_M^Q \frac{\alpha_N}{\alpha_M}\right)}{\frac{\widehat{\varepsilon}_M^Q}{\alpha_M}(\alpha_N+\alpha_M-1)}$, $\widehat{\phi} = \frac{\widehat{\gamma}}{1+\widehat{\gamma}}$, $\widehat{\beta}_j = \frac{\alpha_N}{\alpha_M}\frac{\widehat{\varepsilon}_M^Q}{\widehat{\varepsilon}_N^Q}$ and $\widehat{\varepsilon}_w^N = \frac{\widehat{\beta}}{1-\widehat{\beta}}$. Their respective standard errors are computed as:

$$(\sigma_{\widehat{\mu}})^2 = \frac{1}{(\alpha_M)^2}\left(\sigma_{\widehat{\varepsilon}_M^Q}\right)^2, \quad (\sigma_{\widehat{\gamma}})^2 = \left(\frac{\alpha_M}{\alpha_N+\alpha_M-1}\right)^2 \frac{\left(\widehat{\varepsilon}_M^Q\right)^2\left(\sigma_{\widehat{\varepsilon}_N^Q}\right)^2 - 2\widehat{\varepsilon}_N^Q\widehat{\varepsilon}_M^Q\left(\sigma_{\widehat{\varepsilon}_N^Q,\widehat{\varepsilon}_M^Q}\right) + \left(\widehat{\varepsilon}_N^Q\right)^2\left(\sigma_{\widehat{\varepsilon}_N^Q}\right)^2}{\left(\widehat{\varepsilon}_M^Q\right)^4}, \quad \left(\sigma_{\widehat{\phi}}\right)^2 = \frac{(\sigma_{\widehat{\gamma}})^2}{(1+\widehat{\gamma})^4},$$

$$\left(\sigma_{\widehat{\beta}}\right)^2 = \left(\frac{\alpha_N}{\alpha_M}\right)^2 \frac{\left(\widehat{\varepsilon}_M^Q\right)^2\left(\sigma_{\widehat{\varepsilon}_N^Q}\right)^2 - 2\widehat{\varepsilon}_N^Q\widehat{\varepsilon}_M^Q\left(\sigma_{\widehat{\varepsilon}_N^Q,\widehat{\varepsilon}_M^Q}\right) + \left(\widehat{\varepsilon}_N^Q\right)^2\left(\sigma_{\widehat{\varepsilon}_M^Q}\right)^2}{\left(\widehat{\varepsilon}_N^Q\right)^4} \text{ and } \left(\sigma_{\widehat{\varepsilon}_w^N}\right)^2 = \frac{\left(\sigma_{\widehat{\beta}}\right)^2}{(1-\widehat{\beta})^4}.$$

[10] For reasons of completeness, Table B.6 also provides detailed information on the system GMM estimates of the industries which are classified in the non-predominant regimes in the three countries, i.e. the *PC*-*PR*- and *PC*-*MO*-regimes in FR, the *PC*-*EB*-, *IC*-*EB*- and *IC*-*MO*-regimes in JP and the *PC*-*MO*- and *PC*-*PR*-regimes in NL.

in increasing order of $\widehat{\phi}_j$. Within the *PC-MO*- and *IC-MO*-regimes, industries are ranked according to $\widehat{\beta}_j$.

Let us focus the discussion on the primary parameters within the predominant regimes in FR, JP and NL respectively. The predominant regimes in FR are *IC-EB* (30% of industries/51% of firms), *IC-PR* (40% of industries/38% of firms) and *IC-MO* (13% of industries/5% of firms).

- Within regime $R =$ *IC-EB* in FR, $\widehat{\lambda}_j$ is lower than 0.937 for industries in the first quartile and higher than 0.971 for industries in the third quartile. $\widehat{\psi}_j$ is lower than 0.477 for industries in the first quartile and higher than 0.702 for industries in the third quartile. The corresponding $\widehat{\mu}_j$ is lower than 1.295 for the first quartile of industries and higher than 1.413 for the top quartile. The corresponding $\widehat{\phi}_j$ is lower than 0.376 for the first quartile of industries and higher than 0.460 for the top quartile. The median values of λ_j, ψ_j, μ_j and ϕ_j are estimated at 0.948, 0.518, 1.320 and 0.414 respectively.

- Within regime $R =$ *IC-PR* in FR, $\widehat{\lambda}_j$ is lower than 0.998 for industries in the first quartile and higher than 1.017 for industries in the third quartile. $\widehat{\mu}_j$ is lower than 1.215 for industries in the first quartile and higher than 1.305 for industries in the upper quartile. The median values of λ_j and μ_j are estimated at 1.005 and 1.248 respectively.

- Within regime $R =$ *IC-MO* in FR, $\widehat{\lambda}_j$ is lower than 1.014 for industries in the first quartile and higher than 1.055 for industries in the third quartile. $\widehat{\psi}_j$ is lower than -0.659 for industries in the first quartile and higher than -0.317 for industries in the third quartile. The corresponding $\widehat{\mu}_j$ is lower than 1.128 for the first quartile of industries and higher than 1.230 for the top quartile. The corresponding $\left(\widehat{\varepsilon}_w^N\right)_j$ is estimated to be lower than 1.789 for industries in the first quartile and higher than 3.723 for industries in the upper quartile. The median values of λ_j, ψ_j, μ_j and $(\varepsilon_w^N)_j$ are estimated at 1.034, -0.489, 1.178 and 2.763 respectively.

The predominant regimes in JP are *PC-PR* (23% of industries/27% of firms), *PC-MO* (20% of industries/27% of firms) and *IC-PR* (30% of industries/24% of firms).

- Within regime $R =$ *PC-PR* in JP, $\widehat{\lambda}_j$ is lower than 1.021 for industries in the first quartile and higher than 1.068 for industries in the third quartile. $\widehat{\mu}$ is lower than 1.011 for industries in the first quartile and higher than 1.063 for industries in the upper quartile. The median values of λ_j and μ_j are estimated at 1.053 and 1.050 respectively.

- Within regime $R =$ *PC-MO* in JP, $\widehat{\lambda}_j$ is lower than 1.060 for industries in the first quartile and higher than 1.099 for industries in the third quartile. $\widehat{\psi}_j$ is lower than -0.514 for industries in the first quartile and higher than -0.340 for industries in the third quartile. The corresponding $\widehat{\mu}_j$ is lower than 1.010 for the first quartile of industries and higher than 1.062 for the top quartile. The corresponding $\left(\widehat{\varepsilon}_w^N\right)_j$ is estimated to be lower than 2.065 for industries in the first quartile and higher than 2.975 for industries in the upper quartile. The median values of λ_j, ψ_j, μ_j and $(\varepsilon_w^N)_j$ are estimated at 1.088, -0.424, 1.029 and 2.426 respectively.

- Within regime $R = IC\text{-}PR$ in JP, $\widehat{\lambda}_j$ is lower than 1.032 for industries in the first quartile and higher than 1.045 for industries in the third quartile. $\widehat{\mu}$ is lower than 1.116 for industries in the first quartile and higher than 1.174 for industries in the upper quartile. The median values of λ_j and μ_j are estimated at 1.034 and 1.136 respectively.

  The predominant regimes in NL are $IC\text{-}PR$ (37% of industries/53% of firms), $IC\text{-}EB$ (30% of industries/20% of firms) and $IC\text{-}MO$ (20% of industries/18% of firms).

- Within regime $R = IC\text{-}PR$ in NL, $\widehat{\lambda}_j$ is lower than 0.995 for industries in the first quartile and higher than 1.048 for industries in the third quartile. $\widehat{\mu}$ is lower than 1.306 for industries in the first quartile and higher than 1.390 for industries in the upper quartile. The median values of λ_j and μ_j are estimated at 1.027 and 1.357 respectively.

- Within $R = IC\text{-}EB$ in NL, $\widehat{\lambda}_j$ is lower than 0.983 for industries in the first quartile and higher than 1.021 for industries in the third quartile. $\widehat{\psi}_j$ is lower than 0.406 for industries in the first quartile and higher than 0.693 for industries in the third quartile. The corresponding $\widehat{\mu}_j$ is lower than 1.331 for the first quartile of industries and higher than 1.470 for the top quartile. The corresponding $\widehat{\phi}_j$ is estimated to be lower than 0.267 for industries in the first quartile and higher than 0.294 for industries in the upper quartile. The median values of λ_j, ψ_j, μ_j and ϕ_j are estimated at 1.013, 0.465, 1.444 and 0.273 respectively.

- Within $R = IC\text{-}MO$ in NL, $\widehat{\lambda}_j$ is lower than 1.023 for industries in the first quartile and higher than 1.064 for industries in the third quartile. $\widehat{\psi}_j$ is lower than -0.668 for industries in the first quartile and higher than -0.341 for industries in the third quartile. The corresponding $\widehat{\mu}_j$ is lower than 1.223 for the first quartile of industries and higher than 1.279 for the top quartile. The corresponding $\left(\widehat{\varepsilon}_w^N\right)_j$ is estimated to be lower than 1.831 for industries in the first quartile and higher than 3.746 for industries in the upper quartile. The median values of λ_j, ψ_j, μ_j and $(\varepsilon_w^N)_j$ are estimated at 1.053, -0.550, 1.251 and 2.268 respectively.

<Insert Table 4 about here>

Summing up, we do not only observe important regime differences across the three countries, we also find differences in the levels of product and labor market imperfections and scale economies within a regime. Within the $IC\text{-}PR$-regime in FR, JP and NL, the median scale elasticity estimates are comparable across the three countries while the median price-cost mark-up is estimated to be the highest in NL and the lowest in JP. Within the $IC\text{-}EB$-regime in FR and NL, the median scale elasticity and the median price-cost mark-up are estimated to be the highest in NL whilst the median absolute extent of rent sharing is estimated to be the highest in FR. Within the $IC\text{-}MO$-regime in FR and NL, the median scale elasticity and the median price-cost mark-up are estimated to be the highest in NL whilst the median labor supply elasticity is estimated to be the highest in FR.

Existing empirical studies –relying on either the same or a simplified version of our theoretical model– have found that product and labor market imperfections are likely to go hand in hand by documenting a positive correlation between the estimated price-cost mark-up and the estimated extent of rent sharing in the cross-section dimension (see Dobbelaere, 2004; Boulhol *et al.*, 2011 and Dobbelaere and Mairesse, 2013). Corroborative evidence is provided by several OECD studies indicating that (*i*) there is a positive correlation between product market regulation and industry wage mark-ups (OECD, 2001) and (*ii*) product and labor market deregulations are correlated across countries (e.g. Brandt *et al.*, 2005). Supporting evidence is also given by Ebell and Haefke (2006) who argue that the strong decline in coverage and unionization in the UK and the US might have been a direct consequence of product market reforms of the early 1980s and by Boulhol (2009) who develops a theoretical model formalizing the idea that trade and capital market liberalization put pressure on labor market institutions leading to deregulation. Do we observe any relationship between product and labor imperfections in the three countries under consideration? To get a first insight, Table B.7 in Appendix B reports correlations between product and labor market imperfection parameters for all industries and for the relevant predominant regimes in each of the three countries. Two types of correlations between $\widehat{\mu}_j$ and $\widehat{\gamma}_j$ / $\widehat{\mu}_j$ and $\widehat{\beta}_j$ are reported: Spearman's rank correlation coefficients and biweight midcorrelation coefficients. The latter, which is based on Wilcox (2005), gives a correlation that is less sensitive to outliers and therefore more robust. Considering all industries, we observe a significant and strong correlation (of more than 0.75) between either $\widehat{\mu}_j$ and $\widehat{\gamma}_j$ or $\widehat{\mu}_j$ and $\widehat{\beta}_j$ in FR. This holds for both types of correlation coefficients. Within the predominant regimes in FR, we find a significant correlation of about 0.65 between $\widehat{\mu}_j$ and $\widehat{\gamma}_j$ in the IC-EB-regime. Considering all industries, we observe a significantly positive rank (robust) correlation of 0.50 (0.16) between $\widehat{\mu}_j$ and $\widehat{\gamma}_j$ and a significantly negative rank correlation of -0.46 between $\widehat{\mu}_j$ and $\widehat{\beta}_j$ in JP. The latter correlation loses significance in the PC-MO-regime. Considering all industries, we observe a significantly positive correlation of about 0.73 between either $\widehat{\mu}_j$ and $\widehat{\gamma}_j$ or $\widehat{\mu}_j$ and $\widehat{\beta}_j$ in NL. This is true for both types of correlation coefficients. However, none of the correlation coefficients are significant within the predominant regimes. A visual representation is given in Graphs 1-3. Each graph corresponds to one country. The first two panels in each graph focus on all industries, whereas the last two panels in Graphs 1 and 3 and the last panel in Graph 2 focus on the predominant regimes. The dashed lines denote the median values of the product and labor market imperfection parameters.

<*Insert Graphs 1-3 about here*>

How do our estimates of product and labor market imperfections match up with other studies focusing on the same countries? Our industry classification 1 and the order of magnitudes of our joint market imperfections parameter and corresponding product and labor market imperfection parameters within each regime are consistent with the classification and parameter estimates of Dobbelaere and Mairesse (2013). The latter study uses an unbalanced panel of 10,646 French firms in 30 manufacturing industries over the period 1978-2001 extracted from EAE and assumes constant returns to scale. Using an unbalanced panel of more than 8,000 Japanese firms in 26 manufacturing industries over the period 1994-2006 extracted from the BSJBSA and imposing $LMS = PR$ on the data, Kiyota (2010) estimates the scale elasticity parameter to be lower than 0.868 for the bottom quartile of industries and higher than 0.930 for the top quartile. The price-cost mark-up is estimated to be lower than 0.940 for the first quartile of industries and higher than 0.993 for the upper quartile. Using an unbalanced panel of 2,471 Dutch firms in 11 manufacturing industries over the period 1992-1997 extracted from the Amadeus database, assuming constant returns to scale and imposing $LMS = PR$ on the data, Konings *et al.* (2001) find that the price-cost mark-up is lower than 1.460 for the first quartile of industries and higher than 1.790 for the upper quartile.

As mentioned above, other studies focusing on the same kind of analysis include Dobbelaere (2004) and Boulhol *et al.* (2011). Using an unbalanced panel of 7,086 Belgian firms in 18 manufacturing industries over the period 1988-1995 extracted from the annual company accounts collected by the National Bank of Belgium and imposing $LMS = EB$ on the data, the former estimates the scale elasticity parameter to be lower than 1.000 for the first quartile of industries and higher than 1.171 for the upper quartile. The price-cost mark-up is estimated to be lower than 1.347 for the bottom quartile of industries and higher than 1.629 for the top quartile. The corresponding absolute extent of rent-sharing estimate is lower than 0.134 for the first quartile of industries and higher than 0.221 for the third quartile. Using a panel of 11,799 British firms in 20 manufacturing industries over the period 1988-2003 extracted from OneSource and Financial Analysis Made Easy, assuming constant returns to scale and imposing $LMS = EB$ on the data , Boulhol *et al.* (2011) estimate the price-cost mark-up to be lower than 1.212 for the bottom quartile of industries and higher than 1.292 for the top quartile. The corresponding absolute extent of rent sharing is estimated to be lower than 0.189 for the first quartile of industries and higher than 0.544 for the upper quartile. Whereas there is an abundant literature on estimating the extent of product market power (see Bresnahan, 1989 for a survey), there is less direct evidence of employer market power over its workers. For studies estimating the wage elasticity of the labor supply curve facing an individual employer, we refer to Reynolds (1946), Nelson (1973), Sullivan (1989), Boal (1995), Staiger *et al.* (1999), Falch (2001), Manning (2003) and Booth and Katic (2011). These studies point to an elasticity in the [0.7-5]-range.

6 Conclusion

How different are manufacturing industries in their factor shares, in their marginal products, in their scale economies and in their imperfections in the product and labor markets in which they operate? How does their behavior deviate across countries? In order to analyze these questions, we rely on two extensions of Hall's (1988) econometric framework for estimating price-cost margins and scale economies by nesting three distinct labor market settings (perfect competition or right-to-manage bargaining, efficient bargaining and monopsony).

Using an unbalanced panel of 17,653 firms over the period 1986-2001 in France, 8,725 firms over the period 1994-2006 in Japan and 7,828 firms over the period 1993-2008 in the Netherlands, we first apply two procedures to determine the prevalent product market and labor market settings, and hence the prevalent regime, in 30 comparable manufacturing industries. Irrespective of the classification procedure, our analysis provides evidence of pronounced regime differences across the three countries. The dominant regime in France is one of imperfect competition in the product market and efficient bargaining in the labor market (*IC-EB*). The median profit ratio –defined as the price-cost mark-up divided by the scale elasticity– and absolute extent of rent-sharing parameters in the *IC-EB*-industries are of 1.41 and 0.41 respectively. In Japan, the dominant regime is perfect competition in the product market and perfect competition or right-to-manage bargaining in the labor market (*PC-PR*), with a median profit ratio of about 1.00. The dominant regime in the Netherlands is one of imperfect competition in the product market and perfect competition or right-to-manage bargaining in the labor market (*IC-PR*), with a median profit ratio of about 1.39. Our study does not only highlight cross-country regime differences, it also reveals cross-country differences in the levels of product and labor market imperfections and scale economies within a particular regime.

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Table 1: Descriptive statistics by country

Variables	Mean	Sd.	Q_1	Q_2	Q_3	N
FRANCE (1986-2001)						
Real firm output growth rate Δq_{it}	0.033	0.152	-0.050	0.030	0.115	156,947
Labor growth rate Δn_{it}	0.014	0.128	-0.040	0.000	0.066	156,947
Materials growth rate Δm_{it}	0.049	0.192	-0.054	0.044	0.148	156,947
Capital growth rate Δk_{it}	0.008	0.156	-0.070	-0.013	0.074	156,947
$(\alpha_N)_j (\Delta n_{it} - \Delta k_{it}) + (\alpha_M)_j (\Delta m_{it} - \Delta k_{it})$	0.022	0.148	-0.058	0.024	0.102	156,947
$(\alpha_N)_j (\Delta k_{it} - \Delta n_{it})$	-0.002	0.055	-0.028	-0.004	0.024	156,947
SR_{it}	0.003	0.098	-0.052	0.004	0.059	156,947
Labor share in nominal output $(\alpha_N)_i$	0.309	0.130	0.217	0.296	0.386	156,947
Materials share in nominal output $(\alpha_M)_i$	0.502	0.143	0.413	0.511	0.602	156,947
$1 - (\alpha_N)_i - (\alpha_M)_i$	0.188	0.087	0.130	0.165	0.219	156,947
Number of employees N_{it}	144	722	30	46	99	156,947
JAPAN (1994-2006)						
Variables	Mean	Sd.	Q_1	Q_2	Q_3	N
Real firm output growth rate Δq_{it}	0.020	0.140	-0.050	0.015	0.085	75,038
Labor growth rate Δn_{it}	-0.002	0.099	-0.045	-0.005	0.038	75,038
Materials growth rate Δm_{it}	0.013	0.161	-0.065	0.009	0.088	75,038
Capital growth rate Δk_{it}	-0.003	0.108	-0.071	-0.032	0.028	75,038
$(\alpha_N)_j (\Delta n_{it} - \Delta k_{it}) + (\alpha_M)_j (\Delta m_{it} - \Delta k_{it})$	0.011	0.144	-0.058	0.021	0.090	75,038
$(\alpha_N)_j (\Delta k_{it} - \Delta n_{it})$	0.000	0.027	-0.015	-0.003	0.011	75,038
SR_{it}	0.011	0.067	-0.022	0.009	0.042	75,038
Labor share in nominal output $(\alpha_N)_i$	0.199	0.088	0.139	0.187	0.245	83,291
Materials share in nominal output $(\alpha_M)_i$	0.714	0.105	0.657	0.728	0.786	83,291
$1 - (\alpha_N)_i - (\alpha_M)_i$	0.087	0.048	0.054	0.074	0.105	83,291
Number of employees N_{it}	530	2,253	94	160	340	83,291
THE NETHERLANDS (1993-2008)						
Variables	Mean	Sd.	Q_1	Q_2	Q_3	N
Real firm output growth rate Δq_{it}	0.025	0.186	-0.063	0.022	0.115	65,321
Labor growth rate Δn_{it}	0.004	0.127	-0.026	0.000	0.034	65,321
Materials growth rate Δm_{it}	0.026	0.251	-0.088	0.020	0.142	65,321
Capital growth rate Δk_{it}	0.016	0.227	-0.076	0.000	0.114	65,321
$(\alpha_N)_j (\Delta n_{it} - \Delta k_{it}) + (\alpha_M)_j (\Delta m_{it} - \Delta k_{it})$	0.001	0.175	-0.077	-0.003	0.078	65,321
$(\alpha_N)_j (\Delta k_{it} - \Delta n_{it})$	0.003	0.061	-0.023	0.000	0.032	65,321
SR_{it}	0.008	0.107	-0.043	0.004	0.059	65,321
Labor share in nominal output $(\alpha_N)_i$	0.275	0.109	0.200	0.273	0.344	73,149
Materials share in nominal output $(\alpha_M)_i$	0.447	0.147	0.349	0.439	0.539	73,149
$1 - (\alpha_N)_i - (\alpha_M)_i$	0.278	0.092	0.215	0.272	0.332	73,149
Number of employees N_{it}	105	472	27	45	93	73,149

Note: $SR_{it} = \Delta q_{it} - (\alpha_N)_j \Delta n_{it} - (\alpha_M)_j \Delta m_{it} - (1 - \alpha_N - \alpha_M)\Delta k_{it}$.

Table 2: Industry classification 1 by country

# ind. prop. of ind. (%) prop. of firms (%)	LABOR MARKET SETTING											
PRODUCT MARKET SETTING	**PR**			**EB**			**MO**					
	FR	*JP*	*NL*	*FR*	*JP*	*NL*	*FR*	*JP*	*NL*	*FR*	*JP*	*NL*
	3	7	1	0	4	0	2	6	3	5	17	4
PC	10.0	23.3	3.3	0	13.3	0	6.7	20.0	10.0	16.7	56.6	13.3
	4.9	26.9	1.2	0	7.9	0	1.8	26.9	7.5	6.7	61.7	8.7
	12	9	11	9	3	9	4	1	6	25	13	26
IC	40.0	30.0	36.7	30.0	10.0	30.0	13.3	3.3	20.0	83.3	43.3	86.7
	37.5	23.7	53.4	50.6	11.9	20.2	5.2	3.4	17.7	93.3	39.0	91.3
	15	16	12	9	7	9	6	7	9	30	30	30
	63.3	53.3	40.0	30.0	23.3	30.0	6.7	23.3	30.0	100	100	100
	43.1	50.6	54.6	55.3	19.8	20.2	1.6	30.3	25.2	100	100	100

Table 3a: Product and labor market settings according to industry classification 2 by country

PRODUCT MARKET SETTING	*FR*	*JP*	*NL*
*PC**			
# ind.	3	10	1
prop. of ind. (%)	10.0	33.3	3.3
prop. of firms (%)	4.0	36.5	1.0
*IC**			
# ind.	19	7	25
prop. of ind. (%)	63.3	23.3	83.3
prop. of firms (%)	83.2	25.3	90.3
mover			
# ind.	8	13	4
prop. of ind. (%)	6.7	43.3	13.3
prop. of firms (%)	12.9	38.3	8.7
LABOR MARKET SETTING	*FR*	*JP*	*NL*
*PR**			
# ind.	9	13	12
prop. of ind. (%)	30.0	43.3	40.0
prop. of firms (%)	10.1	50.1	41.7
*EB**			
# ind.	7	2	3
prop. of ind. (%)	23.3	6.7	10.0
prop. of firms (%)	41.3	3.5	6.2
*MO**			
# ind.	0	0	0
prop. of ind. (%)	0	0	0
prop. of firms (%)	0	0	0
mover			
# ind.	14	15	15
prop. of ind. (%)	46.7	50.0	50.0
prop. of firms (%)	48.6	46.4	52.1

Table 3b: Industry classification 2 by country

# ind. prop. of ind. (%) prop. of firms (%)	**LABOR MARKET SETTING**											
PRODUCT MARKET SETTING	**PR***			**EB***			**MO***					
	FR	*JP*	*NL*	*FR*	*JP*	*NL*	*FR*	*JP*	*NL*	*FR*	*JP*	*NL*
	2	5	1	0	1	0	0	0	0	2	6	1
PC*	6.7	16.7	3.3	0	3.3	0	0	0	0	6.7	20.0	3.3
	1.0	21.5	1.0	0	1.5	0	0	0	0	1.0	23.0	1.0
	2	1	8	7	1	3	0	0	0	9	2	11
IC*	6.7	3.3	26.7	23.3	3.3	10.0	0	0	0	30.0	6.6	36.7
	2.2	3.4	33.2	41.3	2.0	6.2	0	0	0	43.5	5.4	39.4
	4	6	9	7	2	3	0	0	0	11	8	12
	13.4	20.0	30.0	23.3	6.6	10.0	0	0	0	36.7	26.6	40.0
	3.2	24.9	34.2	41.3	3.5	6.2	0	0	0	44.5	28.4	40.4

Table 4: Industry-specific scale elasticity parameter $\widehat{\lambda}_j$, joint market imperfections parameter $\widehat{\psi}_j$, and corresponding price-cost mark-up $\widehat{\mu}_j$ and absolute extent of rent sharing $\widehat{\phi}_j$ or labor supply elasticity $\left(\widehat{\varepsilon}_w^N\right)_j$ by country

FRANCE						
Regime $R = IC\text{-}EB$ **[30% of industries, 51% of firms]**	$\widehat{\lambda}_j$	$\widehat{\psi}_j$	$\widehat{\mu}_j$	$\left(\frac{\widehat{\mu}}{\lambda}\right)_j$	$\widehat{\gamma}_j$	$\widehat{\phi}_j$
Industry mean	0.948 (0.025)	0.561 (0.173)	1.338 (0.055)	1.412 (0.073)	0.734 (0.200)	0.413 (0.071)
Industry Q_1	0.937 (0.020)	0.477 (0.139)	1.295 (0.043)	1.349 (0.058)	0.603 (0.140)	0.376 (0.045)
Industry Q_2	0.948 (0.023)	0.518 (0.146)	1.320 (0.046)	1.413 (0.062)	0.707 (0.151)	0.414 (0.054)
Industry Q_3	0.971 (0.027)	0.702 (0.163)	1.413 (0.065)	1.482 (0.080)	0.853 (0.222)	0.460 (0.064)
Regime $R = IC\text{-}PR$ **[40% of industries, 38% of firms]**	$\widehat{\lambda}_j$	$\widehat{\psi}_j$	$\widehat{\mu}_j$	$\left(\frac{\widehat{\mu}}{\lambda}\right)_j$		
Industry mean	1.003 (0.027)	0.098 (0.224)	1.267 (0.072)	1.263 (0.083)		
Industry Q_1	0.998 (0.021)	0.016 (0.191)	1.215 (0.053)	1.212 (0.062)		
Industry Q_2	1.005 (0.027)	0.119 (0.215)	1.248 (0.061)	1.251 (0.074)		
Industry Q_3	1.017 (0.033)	0.207 (0.269)	1.305 (0.091)	1.303 (0.105)		
Regime $R = IC\text{-}MO$ **[13% of industries, 5% of firms]**	$\widehat{\lambda}_j$	$\widehat{\psi}_j$	$\widehat{\mu}_j$	$\left(\frac{\widehat{\mu}}{\lambda}\right)_j$	$\widehat{\beta}_j$	$\left(\widehat{\varepsilon}_w^N\right)_j$
Industry mean	1.034 (0.026)	-0.488 (0.330)	1.179 (0.081)	1.140 (0.090)	0.715 (0.153)	2.756 (2.439)
Industry Q_1	1.014 (0.025)	-0.659 (0.291)	1.128 (0.070)	1.091 (0.075)	0.641 (0.134)	1.789 (1.073)
Industry Q_2	1.034 (0.026)	-0.489 (0.304)	1.178 (0.082)	1.145 (0.094)	0.718 (0.164)	2.763 (2.539)
Industry Q_3	1.055 (0.028)	-0.317 (0.369)	1.230 (0.092)	1.190 (0.104)	0.788 (0.173)	3.723 (3.806)
JAPAN						
Regime $R = PC\text{-}PR$ **[23% of industries, 27% of firms]**	$\widehat{\lambda}_j$	$\widehat{\psi}_j$	$\widehat{\mu}_j$	$\left(\frac{\widehat{\mu}}{\lambda}\right)_j$		
Industry mean	1.049 (0.021)	-0.111 (0.238)	1.048 (0.048)	1.000 (0.056)		
Industry Q_1	1.021 (0.017)	-0.285 (0.164)	1.011 (0.036)	0.966 (0.046)		
Industry Q_2	1.053 (0.019)	-0.111 (0.221)	1.050 (0.038)	0.996 (0.047)		
Industry Q_3	1.068 (0.029)	0.005 (0.298)	1.063 (0.066)	1.029 (0.068)		
Regime $R = PC\text{-}MO$ **[20% of industries, 27% of firms]**	$\widehat{\lambda}_j$	$\widehat{\psi}_j$	$\widehat{\mu}_j$	$\left(\frac{\widehat{\mu}}{\lambda}\right)_j$	$\widehat{\beta}_j$	$\left(\widehat{\varepsilon}_w^N\right)_j$
Industry mean	1.082 (0.023)	-0.447 (0.258)	1.025 (0.046)	0.948 (0.052)	0.701 (0.133)	2.434 (1.673)
Industry Q_1	1.060 (0.020)	-0.514 (0.222)	1.010 (0.036)	0.923 (0.045)	0.674 (0.114)	2.065 (1.069)
Industry Q_2	1.088 (0.022)	-0.424 (0.247)	1.029 (0.042)	0.941 (0.049)	0.706 (0.126)	2.426 (1.686)
Industry Q_3	1.099 (0.026)	-0.340 (0.309)	1.062 (0.054)	0.960 (0.054)	0.748 (0.150)	2.975 (1.972)
Regime $R = IC\text{-}PR$ **[30% of industries, 24% of firms]**	$\widehat{\lambda}_j$	$\widehat{\psi}_j$	$\widehat{\mu}_j$	$\left(\frac{\widehat{\mu}}{\lambda}\right)_j$		
Industry mean	1.035 (0.018)	0.109 (0.218)	1.152 (0.037)	1.114 (0.045)		
Industry Q_1	1.032 (0.014)	0.133 (0.199)	1.116 (0.032)	1.089 (0.041)		
Industry Q_2	1.034 (0.018)	0.145 (0.234)	1.136 (0.038)	1.097 (0.043)		
Industry Q_3	1.045 (0.020)	0.242 (0.236)	1.174 (0.042)	1.118 (0.046)		

Table 4 (ctd): Industry-specific scale elasticity parameter $\widehat{\lambda}_j$, joint market imperfections parameter $\widehat{\psi}_j$, and corresponding price-cost mark-up $\widehat{\mu}_j$ and absolute extent of rent sharing $\widehat{\phi}_j$ or labor supply elasticity $\left(\widehat{\varepsilon}_w^N\right)_j$ by country

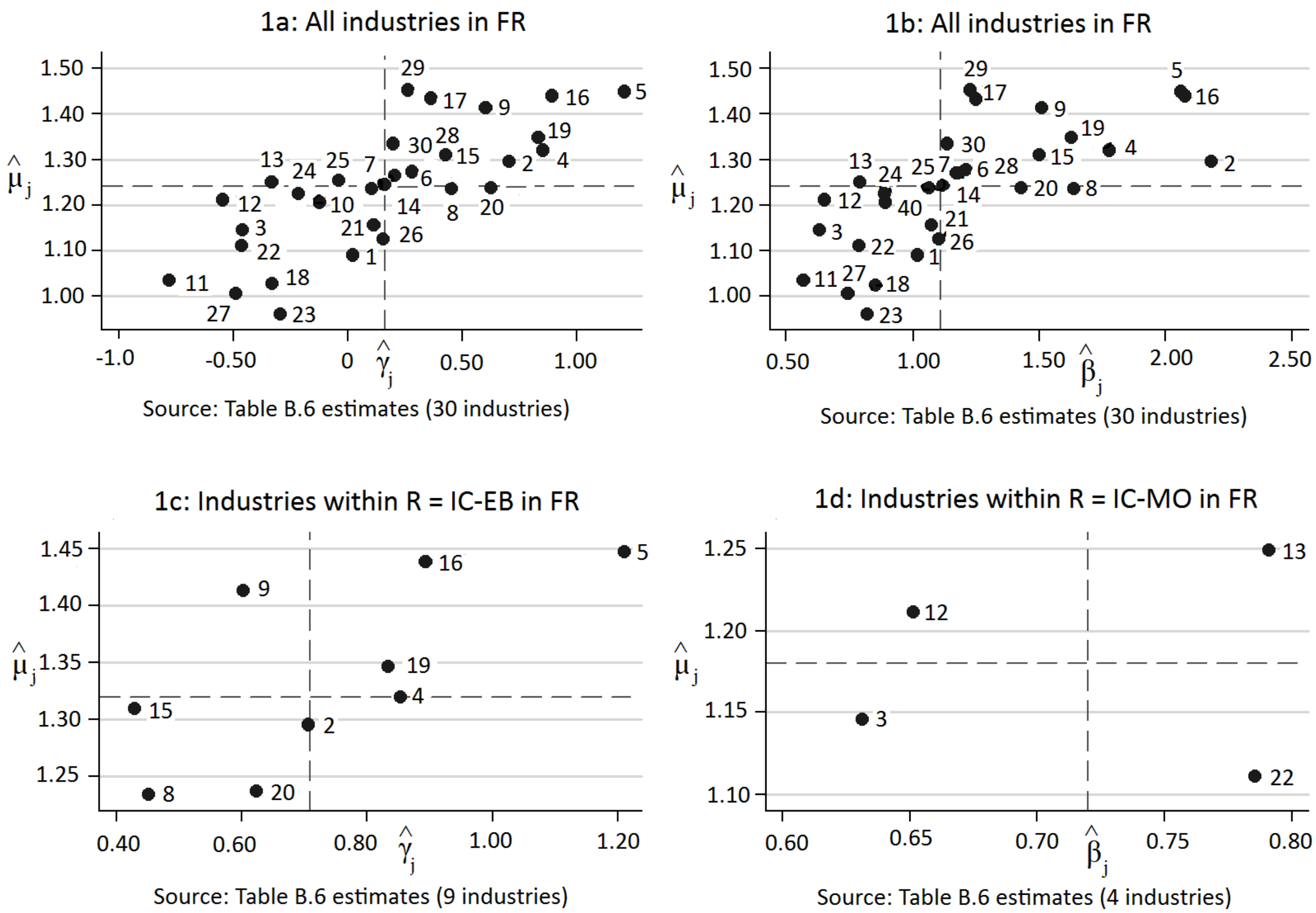
THE NETHERLANDS						
Regime $R = IC\text{-}PR$ **[37% of industries, 53% of firms]**	$\widehat{\lambda}_j$	$\widehat{\psi}_j$	$\widehat{\mu}_j$	$\left(\frac{\widehat{\mu}}{\widehat{\lambda}}\right)_j$		
Industry mean	1.024 (0.022)	0.136 (0.223)	1.344 (0.063)	1.313 (0.074)		
Industry Q_1	0.995 (0.014)	0.032 (0.143)	1.306 (0.050)	1.272 (0.057)		
Industry Q_2	1.027 (0.019)	0.126 (0.179)	1.357 (0.055)	1.328 (0.067)		
Industry Q_3	1.048 (0.033)	0.269 (0.260)	1.390 (0.070)	1.352 (0.086)		
Regime $R = IC\text{-}EB$ **[30% of industries, 20% of firms]**	$\widehat{\lambda}_j$	$\widehat{\psi}_j$	$\widehat{\mu}_j$	$\left(\frac{\widehat{\mu}}{\widehat{\lambda}}\right)_j$	$\widehat{\gamma}_j$	$\widehat{\phi}_j$
Industry mean	1.010 (0.032)	0.534 (0.298)	1.435 (0.108)	1.419 (0.118)	0.386 (0.180)	0.271 (0.095)
Industry Q_1	0.983 (0.022)	0.406 (0.207)	1.331 (0.067)	1.340 (0.082)	0.364 (0.149)	0.267 (0.091)
Industry Q_2	1.013 (0.028)	0.465 (0.257)	1.444 (0.089)	1.410 (0.116)	0.375 (0.185)	0.273 (0.099)
Industry Q_3	1.021 (0.042)	0.693 (0.337)	1.470 (0.106)	1.460 (0.127)	0.417 (0.190)	0.294 (0.101)
Regime $R = IC\text{-}MO$ **[20% of industries, 18% of firms]**	$\widehat{\lambda}_j$	$\widehat{\psi}_j$	$\widehat{\mu}_j$	$\left(\frac{\widehat{\mu}}{\widehat{\lambda}}\right)_j$	$\widehat{\beta}_j$	$\left(\widehat{\varepsilon}_w^N\right)_j$
Industry mean	1.048 (0.031)	-0.724 (0.333)	1.254 (0.099)	1.197 (0.104)	0.671 (0.110)	2.512 (1.565)
Industry Q_1	1.023 (0.022)	-0.668 (0.196)	1.223 (0.068)	1.177 (0.070)	0.647 (0.079)	1.831 (0.955)
Industry Q_2	1.053 (0.032)	-0.550 (0.327)	1.251 (0.099)	1.186 (0.106)	0.693 (0.094)	2.268 (1.089)
Industry Q_3	1.064 (0.041)	-0.341 (0.399)	1.279 (0.117)	1.241 (0.119)	0.789 (0.142)	3.746 (2.175)

Notes: First-step robust standard errors in parentheses.

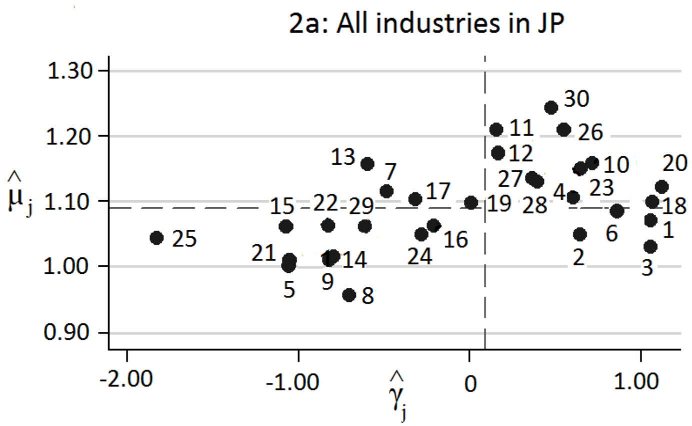
$$\widehat{\psi}_j = \frac{\left(\widehat{\varepsilon}_M^Q\right)_j}{(\alpha_M)_j} - \frac{\left(\widehat{\varepsilon}_N^Q\right)_j}{(\alpha_N)_j} \qquad \widehat{\gamma}_j = \frac{\left(\widehat{\varepsilon}_N^Q\right)_j - \left[\left(\widehat{\varepsilon}_M^Q\right)_j \frac{(\alpha_N)_j}{(\alpha_M)_j}\right]}{\frac{\left(\widehat{\varepsilon}_M^Q\right)_j}{(\alpha_M)_j}\left[(\alpha_N)_j + (\alpha_M)_j - 1\right]} \qquad \widehat{\beta}_j = \frac{(\alpha_N)_j}{(\alpha_M)_j}\frac{\left(\widehat{\varepsilon}_M^Q\right)_j}{\left(\widehat{\varepsilon}_N^Q\right)_j}$$

$$\widehat{\mu}_j = \frac{\left(\widehat{\varepsilon}_M^Q\right)_j}{(\alpha_M)_j} \qquad \widehat{\phi}_j = \frac{\widehat{\gamma}_j}{1+\widehat{\gamma}_j} \qquad \left(\widehat{\varepsilon}_w^N\right)_j = \frac{\widehat{\beta}_j}{1-\widehat{\beta}_j}$$

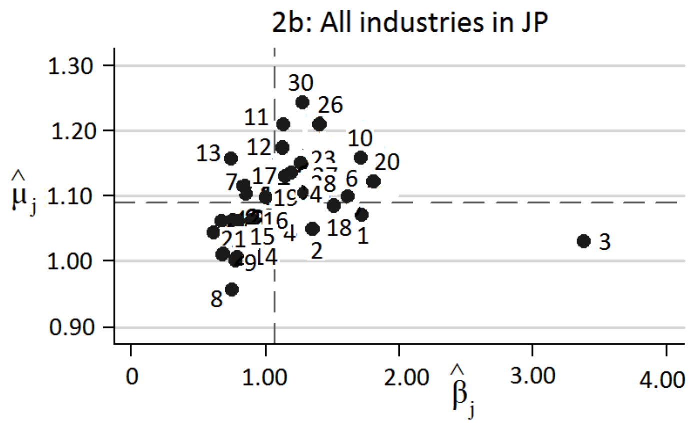
Graph 1: Product and labor market imperfection parameters in France



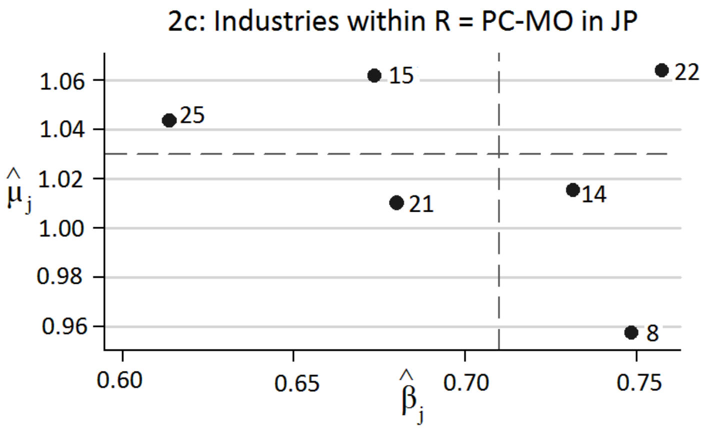
Graph 2: Product and labor market imperfection parameters in Japan



Source: Table B.6 estimates (30 industries)

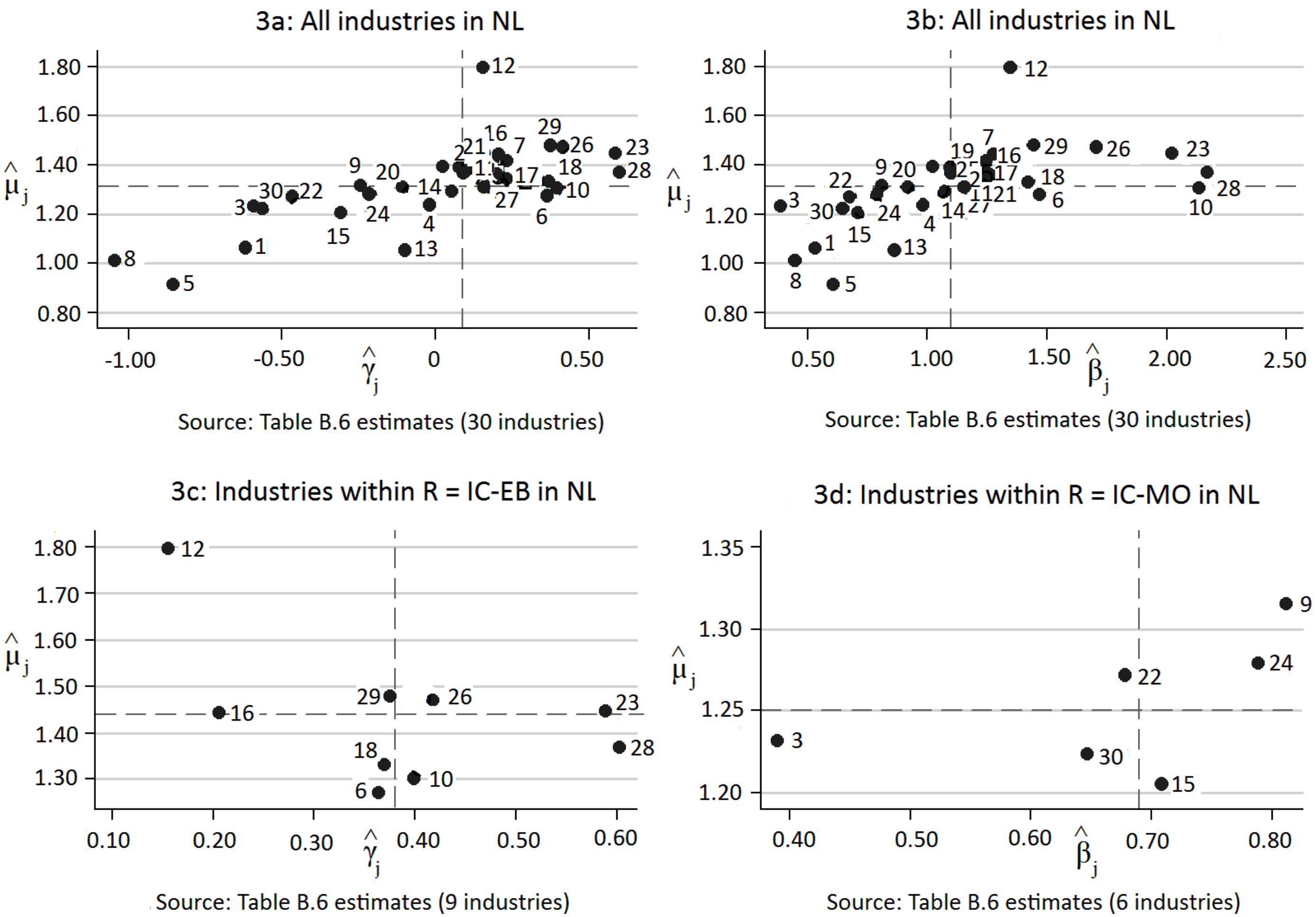


Source: Table B.6 estimates (30 industries)



Source: Table B.6 estimates (6 industries)

Graph 3: Product and labor market imperfection parameters in the Netherlands



Appendix A : Technical details of the theoretical framework

A.1 *IC* and perfectly comp. labor market/right-to-manage bargaining (*IC-PR*)

IC *and perfectly competitive labor market*

Let us start from the following specification of the production function: $q_{it} = (\varepsilon_N^Q)_{it} n_{it} + (\varepsilon_M^Q)_{it} m_{it} + (\varepsilon_K^Q)_{it} k_{it} + \theta_{it}$ (Eq. (1) in the main text). Firms operate under imperfect competition in the product market (IC) and act as price takers in the input markets. Assuming that material input and labor are variable input factors, short-run profit maximization implies the following two first-order conditions:

$$(\varepsilon_M^Q)_{it} = \mu_{it}\,(\alpha_M)_{it} \quad \text{(A.1)}$$

$$(\varepsilon_N^Q)_{it} = \mu_{it}\,(\alpha_N)_{it} \quad \text{(A.2)}$$

Eqs. (A.1) and (A.2) equal Eqs. (2) and (3) in the main text.

Assuming that the elasticity of scale, $\lambda_{it} = (\varepsilon_N^Q)_{it} + (\varepsilon_M^Q)_{it} + (\varepsilon_K^Q)_{it}$, is known, the capital elasticity can be expressed as:

$$(\varepsilon_K^Q)_{it} = \lambda_{it} - (\varepsilon_N^Q)_{it} - (\varepsilon_M^Q)_{it} \quad \text{(A.3)}$$

Inserting Eqs. (A.1), (A.2) and (A.3) in the production function and rearranging terms yields:

$$q_{it} = \mu_{it}\,[(\alpha_N)_{it}\,(n_{it} - k_{it}) + (\alpha_M)_{it}\,(m_{it} - k_{it})] + \lambda_{it} k_{it} + \nu_{it} \quad \text{(A.4)}$$

IC *and right-to-manage (RTM) bargaining*

Let us abstain from the assumption that labor is priced competitively. We assume that the workers and the firm bargain over wages (w) but that the firm retains the right to set employment (N) unilaterally afterwards (right-to-manage bargaining; Nickell and Andrews, 1983). Since, as in the perfectly competitive labor market case, material input and labor are unilaterally determined by the firm from profit maximization [see Eqs. (A.1) and (A.2) respectively], the mark-up of price over marginal cost (μ) that follows from Eq. (A.4) is not only consistent with the assumption that the labor market is perfectly competitive but also with the less restrictive right-to-manage bargaining assumption.

A.2 *IC* and efficient bargaining (*IC-EB*)

Firms operate under imperfect competition in the product market (IC). On the labor side, we assume that the workers and the firm bargain over wages (w) and employment (N) (efficient bargaining; McDonald and Solow, 1981). It is the objective of the workers to maximize $U(w_{it}, N_{it}) = N_{it} w_{it} + (\overline{N}_{it} - N_{it})\overline{w}_{it}$, where $\overline{N}_{it}$ is the competitive employment level ($0 < N_{it} \leq$

$\overline{N}_{it}$) and $\overline{w}_{it} \leq w_{it}$ the reservation wage. Consistent with capital quasi-fixity, it is the firm's objective to maximize its short-run profit function: $\pi_{it} = R_{it} - w_{it}N_{it} - j_{it}M_{it}$, where $R_{it} = P_{it}Q_{it}$ stands for total revenue. The outcome of the bargaining is the generalized Nash solution to:

$$\max_{w_{it},\, N_{it},\, M_{it}} \left\{N_{it}w_{it} + \left(\overline{N}_{it} - N_{it}\right)\overline{w}_{it} - \overline{N}_{it}\overline{w}_{it}\right\}^{\phi_{it}} \left\{R_{it} - w_{it}N_{it} - j_{it}M_{it}\right\}^{1-\phi_{it}} \tag{A.5}$$

where $\phi_{it} \in [0,1]$ represents the absolute extent of rent sharing.

Material input is unilaterally determined by the firm from profit maximization, which directly leads to Eq. (A.1).

Maximization with respect to the wage rate and labor respectively gives the following first-order conditions:

$$w_{it} = \overline{w}_{it} + \gamma_{it}\left[\frac{R_{it} - w_{it}N_{it} - j_{it}M_{it}}{N_{it}}\right] \tag{A.6}$$

$$w_{it} = \left(R_N\right)_{it} + \phi_{it}\left[\frac{R_{it} - \left(R_N\right)_{it} N_{it} - j_{it}M_{it}}{N_{it}}\right] \tag{A.7}$$

with $\gamma_{it} = \frac{\phi_{it}}{1-\phi_{it}}$ the relative extent of rent sharing and $\left(R_N\right)_{it}$ the marginal revenue of labor.

Solving simultaneously Eqs. (A.6) and (A.7) leads to the following expression for the contract curve:

$$\left(R_N\right)_{it} = \overline{w}_{it} \tag{A.8}$$

Eq. (A.8) shows that under risk neutrality, the firm's decision about employment equals the one of a (non-bargaining) neoclassical firm that maximizes its short-run profit at the reservation wage.

Denote the marginal revenue by $\left(R_Q\right)_{it}$ and the marginal product of labor by $\left(Q_N\right)_{it}$. Given that $\mu_{it} = \frac{P_{it}}{\left(R_Q\right)_{it}}$ in equilibrium, we can express the marginal revenue of labor as $\left(R_N\right)_{it} = \left(R_Q\right)_{it}\left(Q_N\right)_{it} = \left(R_Q\right)_{it}(\varepsilon_N^Q)_{it}\frac{Q_{it}}{N_{it}} = \frac{P_{it}(Q_N)_{it}}{\mu_{it}}$. Using this expression together with Eq. (A.8), the elasticity of output with respect to labor can be written as:

$$(\varepsilon_N^Q)_{it} = \mu_{it}\left(\frac{\overline{w}_{it}N_{it}}{P_{it}Q_{it}}\right) = \mu_{it}\,(\overline{\alpha}_N)_{it} \tag{A.9}$$

Given that we can rewrite Eq. (A.6) as $(\alpha_N)_{it} = (\overline{\alpha}_N)_{it} + \gamma_{it}\left[1 - (\alpha_N)_{it} - (\alpha_M)_{it}\right]$, Eq. (A.9) is equivalent to Eq. (4) in the main text:

$$(\varepsilon_N^Q)_{it} = \mu_{it}\,(\alpha_N)_{it} - \mu_{it}\gamma_{it}\left[1 - (\alpha_N)_{it} - (\alpha_M)_{it}\right] \tag{A.10}$$

A.3 *IC* and monopsony (*IC-MO*)

So far, we have assumed that there is a potentially infinite supply of employees wanting a job in the firm. A small wage cut by the employer will result in the immediate resignation of all existing workers. However, there are a number of reasons why labor supply might be less than perfectly elastic, creating rents to jobs. Paramount among these are the absence of perfect information on alternative possible jobs (Burdett and Mortensen, 1998), moving costs (Boal and Ransom, 1997) and heterogeneous worker preferences for job characteristics (Bhaskar and To, 1999; Bhaskar *et al.*, 2002) on the supply side, and efficiency wages with diseconomies of scale in monitoring (Boal and Ransom, 1997) and entry costs on the part of competing firms on the demand side. All these factors give employers nonnegligible market power over their workers.

Consider a firm that operates under imperfect competition in the product market (IC) and faces a labor supply $N_{it}(w_{it})$, which is an increasing function of the wage w_{it}. Both $N_{it}(w_{it})$ and the inverse of this relationship $w_{it}(N_{it})$ are referred to as the labor supply curve of the individual firm. The monopsonist firm's objective is to maximize its short-run profit function, taking the labor supply curve as given:

$$\max_{N_{it},\, M_{it}} \pi(w_{it},\, N_{it},\, M_{it}) = R_{it}(N_{it},\, M_{it}) - w_{it}(N_{it})\, N_{it} - j_{it}M_{it} \tag{A.11}$$

Maximization with respect to material input directly leads to Eq. (A.1).

Maximization with respect to labor gives the following first-order condition:

$$w_{it} = \beta_{it}(R_N)_{it} \tag{A.12}$$

where $\beta_{it} = \frac{(\varepsilon_w^N)_{it}}{1+(\varepsilon_w^N)_{it}}$ and $(\varepsilon_w^N)_{it} \in \Re_+$ represents the wage elasticity of the labor supply. Rewriting Eq. (A.12) gives the following expression for the elasticity of output with respect to labor (Eq. (5) in the main text):

$$(\varepsilon_N^Q)_{it} = \mu_{it}(\alpha_N)_{it}\left(1 + \frac{1}{(\varepsilon_w^N)_{it}}\right) \tag{A.13}$$

Appendix B : Statistical annex

B.1 Measurement of the cost of capital in the Japanese data

The capital stock is constructed from tangible fixed assets. In the BSJBSA, tangible fixed assets include land that is reported at nominal book values except for 1995 and 1996. In other words, the information on land is available only in 1995 and 1996. To construct the capital stock, we first exclude land from tangible fixed assets, multiplying by (1 − the land ratio):

$$(\widetilde{B}_K)_{it} = (1 - \varkappa)(B_K)_{it} \tag{B.1}$$

where $(\widetilde{B}_K)_{it}$ and $(B_K)_{it}$ are the book value of tangible fixed assets that excludes land and includes land respectively and $\varkappa$ is the land ratio. Following Fukao and Kwon (2006), the land ratio is proxied by the industry-average ratio of land to tangible fixed assets in 1995 and 1996.[1]

The book value of tangible assets (excluding land) is then converted to the current value of tangible assets (or nominal tangible assets). The conversion rate is constructed from the Financial Statements Statistics of Corporations by Industry published by the Ministry of Finance. The value of nominal tangible assets is then deflated by the investment goods deflator:

$$\widetilde{K}_{it} = \frac{\rho_t (\widetilde{B}_K)_{it}}{(P_I)_t} \tag{B.2}$$

where $\widetilde{K}_{it}$ denotes real tangible assets for firm i in year t (2000 constant prices), ρ_t is the conversion rate[2] and $(P_I)_t$ is the investment goods deflator, which is defined as industry-specific nominal investment flows divided by industry-specific real investment flows. The latter is obtained from the JIP 2009 database. The real value of tangible assets in the initial year τ is defined as the initial capital stock $\left(\widetilde{K}_{i\tau}\right)$, where τ equals 1994 or the first year that a firm appears in the BSJBSA. The perpetual inventory method is then used to construct the real capital stock:

$$K_{it} = (1 - \delta_t) K_{it-1} + \frac{I_{it}}{(P_I)_t} \tag{B.3}$$

where K_{it} is the capital stock for firm i in year t, δ_t the depreciation rate defined as the weighted average of various assets in an industry and I_{it} investment.[3] δ_t is obtained from the JIP 2009 database.

The cost of capital is the user cost of capital multiplied by the real capital stock. The user cost of capital is obtained from the JIP 2009 database and defined as the industry-specific nominal capital cost divided by the industry-specific real capital stock.

[1] Therefore, the land ratio is constant throughout the period.
[2] For more details on the conversion rate, see Tokui *et al.* (2008).
[3] We consider firms that did not report investment as firms with zero investment.

Table B.1: Panel structure: Number of observations per firm by country

	FRANCE				JAPAN				THE NETHERLANDS			
# obs. / firm [a]	**# obs**	%	**# firms**	%	**# obs**	%	**# firms**	%	**# obs**	%	**# firms**	%
4	2,568	1.47	642	3.64	2,224	2.67	556	6.37	4,100	5.60	1,025	13.09
5	4,910	2.81	982	5.56	3,185	3.82	637	7.30	3,065	4.19	613	7.83
6	12,162	6.97	2,027	11.48	3,582	4.30	597	6.84	3,960	5.41	660	8.43
7	13,972	8.00	1,996	11.31	4,627	5.56	661	7.58	4,634	6.34	662	8.46
8	14,128	8.09	1,766	10.00	5,360	6.44	670	7.68	4,504	6.16	563	7.19
9	14,346	8.22	1,594	9.03	6,678	8.02	742	8.50	5,310	7.26	590	7.54
10	15,650	8.96	1,565	8.87	8,120	9.75	812	9.31	5,940	8.12	594	7.59
11	13,926	7.98	1,266	7.17	9,955	11.95	905	10.37	6,292	8.60	572	7.31
12	14,856	8.51	1,238	7.01	15,900	19.09	1,325	15.19	6,768	9.25	564	7.20
13	13,000	7.45	1,000	5.66	23,660	28.41	1,820	20.86	6,929	9.47	533	6.81
14	10,892	6.24	778	4.41					8,638	11.81	617	7.88
15	8,910	5.10	594	3.36					5,265	7.2	351	4.48
16	35,280	20.21	2,205	12.49					7,744	10.59	484	6.18
Total	174,600	100.0	17,653	100.0	83,291	100.0	8,725	100.0	73,149	100.0	7,828	100.0

Note: a) Median number of observations per firm: 9 [FR], 10 [JP] and 9 [NL].

Table B.2: Estimates of output elasticities and market imperfection parameters by country

	FR	JP	NL
$\widehat{\varepsilon}_N^Q$	0.274	0.233	0.265
	(0.036)	(0.069)	(0.050)
$\widehat{\varepsilon}_M^Q$	0.629	0.706	0.640
	(0.026)	(0.041)	(0.028)
$\widehat{\varepsilon}_K^Q$	0.040	0.080	0.076
	(0.050)	(0.093)	(0.067)
$\widehat{\lambda}$	0.943	1.020	0.981
	(0.023)	(0.040)	(0.029)
$\widehat{\psi}$	0.366	-0.181	0.467
	(0.151)	(0.383)	(0.232)
$\widehat{\mu}$	1.252	0.989	1.429
	(0.051)	(0.058)	(0.064)
$\widehat{\gamma}$	0.479		0.324
	(0.184)		(0.149)
$\widehat{\phi}$	0.324		0.245
	(0.084)		(0.085)
$\frac{\widehat{\mu}}{\widehat{\lambda}}$	1.327	0.970	1.457
	(0.061)	(0.080)	(0.093)

Notes: First-step robust standard errors. Industry and time dummies are included but not reported. The set of instruments includes the lagged levels of n, m and k dated $(t-2)$ and $(t-3)$ in the first-differenced equations and the lagged first-differences of n, m and k dated $(t-1)$ in the levels equations.

$$\widehat{\psi} = \frac{\widehat{\varepsilon}_M^Q}{\alpha_M} - \frac{\widehat{\varepsilon}_N^Q}{\alpha_N} \qquad \widehat{\gamma} = \frac{\widehat{\varepsilon}_N^Q - \left[\widehat{\varepsilon}_M^Q \frac{\alpha_N}{\alpha_M}\right]}{\frac{\widehat{\varepsilon}_M^Q}{\alpha_M}\left[\alpha_N + \alpha_M - 1\right]}$$

$$\widehat{\mu} = \frac{\widehat{\varepsilon}_M^Q}{\alpha_M} \qquad \widehat{\phi} = \frac{\widehat{\gamma}}{1+\widehat{\gamma}}$$

Table B.3: Industry repartition by country

		FRANCE		JAPAN		THE NETHERLANDS	
Industry j	Name	Code - NES 114[a)]	# Firms (# Obs.)	Code - BSJBSA[b)]	# Firms (# Obs.)	Code - SBI[c)]	# Firms (# Obs.)
1	Livestock, seafood and flour products	B01	520 (4,794)	91-93	276 (2,550)	151-152, 156	283 (2,688)
2	Miscellaneous food and related products	B02, B04-B06	1,381 (13,636)	99, 102	566 (5,489)	153-155, 157- 158	867 (7,649)
3	Beverages and tobacco	B03	182 (1,854)	101	130 (1,277)	159, 160	37 (430)
4	Textiles	F21-F23	881 (8,398)	111-113, 119	207 (1,902)	171-177	208 (2,051)
5	Clothing and skin goods	C11-C12	1,267 (11,105)	121-122	144 (1,134)	181-183	76 (610)
6	Wooden products	F31	840 (9,197)	131, 139	82 (721)	201-205	270 (2,606)
7	Furniture	C41	586 (5,723)	140	88 (759)	361	413 (3,680)
8	Pulp, paper and paper products	F32-F33	546 (6,005)	151-152	294 (2,889)	211-212	229 (2,572)
9	Publishing, (re)printing	C31	1,391 (12,973)	160, 413-414	561 (5,401)	221-222	865 (7,222)
10	Chemicals	F41, F43	372 (4,003)	171, 181, 189, 201, 209	229 (2,409)	231-233, 251	49 (495)
11	Organic chemical products	F42	100 (1,046)	172-173	154 (1,569)	241-243, 247	205 (2,040)
12	Pharmaceuticals	C31	205 (2,041)	175	181 (1,936)	244	39 (373)
13	Miscellaneous chemical products	C32	189 (1,968)	174, 179	293 (3,104)	245-246	96 (949)
14	Plastics	F45-F46	1,206 (12,572)	190	470 (4,542)	252	388 (3,928)
15	Ceramic, stone and clay products	F13-F14	830 (8,474)	221-222, 229	408 (3,804)	261-267	309 (2,963)
16	Steel	F51, F53	326 (3,581)	231-232	281 (2,735)	271-273, 2751-2752	48 (520)
17	Metals	E22, F52, F55	1,376 (14,268)	241-242	218 (2,203)	274, 2753-2754, 282-283	134 (1,415)
18	Architectural metal products	E21	256 (2,336)	251	198 (1,761)	281	619 (5,783)
19	Other metal products	F54	1,747 (18,426)	259	485 (4,729)	284-287	689 (6,452)
20	Special industrial machinery	E25, E27-E28	556 (5,278)	262	252 (2,371)	291, 293, 295	555 (5,423)
21	General industrial machinery	E24	410 (3,647)	261, 263	263 (2,441)	292	475 (4,557)
22	Miscellaneous machinery	E23, E26	344 (3,498)	269	506 (4,809)	294	34 (342)
23	Industrial apparatus	E32	85 (675)	271	245 (2,203)	311	42 (394)
24	Household electrical appliances	C44-C46	204 (2,011)	272	73 (630)	223, 297, 334-335	64 (627)
25	Other electrical machinery	E31, E33	120 (882)	273, 281-282	404 (3,580)	300, 322-323	44 (347)
26	Electronic parts and components	F61-F62	533 (4,825)	290	504 (4,649)	314-316, 321	138 (1,109)
27	Motor vehicles	D01	219 (2,104)	301	672 (6,794)	341-343	204 (1,984)
28	Other transport equipment	D02, E11-E14	345 (3,443)	309	131 (1,213)	351-355	148 (1,329)
29	Precision instruments	E34-E35	310 (2,541)	311-313, 319	237 (2,132)	331-333	227 (1,920)
30	Miscellaneous manufacturing products	C42-C43	326 (3,296)	310, 320	173 (1,555)	362-366	73 (691)
Total			17,653 (174,600)		8,725 (83,291)		7,828 (73,149)

Notes: a) NES 114: French industrial classification, "**N**omenclature **E**conomique de **S**ynthèse - Niveau 3",
b) BSJBSA: **B**asic **S**urvey of **J**apanese **B**usiness **S**tructure and **A**ctivities,
c) SBI: Dutch industrial classification, "**S**tandaard **B**edrijfs**i**ndeling".

Table B.4: Underpinnings of common threshold of $|0.30|$ for ψ_j by country

	FR	JP	NL
$(\alpha_N)_j$	0.294 [0.302]	0.196 [0.198]	0.263 [0.269]
$(\alpha_M)_j$	0.510 [0.516]	0.719 [0.723]	0.510 [0.516]
$(\alpha_K)_j$	0.196 [0.190]	0.085 [0.083]	0.283 [0.285]
$\left(\widehat{\varepsilon}_N^Q\right)_j$	0.327 [0.326]	0.215 [0.214]	0.344 [0.319]
$\left(\widehat{\varepsilon}_M^Q\right)_j$	0.627 [0.642]	0.786 [0.788]	0.589 [0.603]
$\left(\widehat{\varepsilon}_K^Q\right)_j$	0.029 [0.021]	0.040 [0.050]	0.092 [0.078]
$\widehat{\gamma}_j$	0.366 [0.402]	0.632 [0.692]	0.302 [0.321]
$\widehat{\phi}_j$	0.268 [0.287]	0.387 [0.409]	0.232 [0.243]
$\widehat{\beta}_j$	0.804 [0.806]	0.785 [0.784]	0.794 [0.796]
$\left(\widehat{\varepsilon}_w^N\right)_j$	4.097 [4.147]	3.643 [3.630]	3.848 [3.895]

Notes: Average values. Median values in square brackets.

$\widehat{\gamma}_j = 0.30 \frac{(\alpha_M)_j}{\left(\widehat{\varepsilon}_M^Q\right)_j} \frac{(\alpha_N)_j}{(\alpha_K)_j}$ $\quad \widehat{\beta}_j = \frac{\left(\widehat{\varepsilon}_w^N\right)_j}{1+\left(\widehat{\varepsilon}_w^N\right)_j}$

$\widehat{\phi}_j = \frac{\widehat{\gamma}_j}{1+\widehat{\gamma}_j}$ $\quad \left(\widehat{\varepsilon}_w^N\right)_j = -\frac{\left(\widehat{\varepsilon}_M^Q\right)_j}{0.30\,(\alpha_M)_j}$

Table B.5: Details on industry classification 1 & 2 by country

		Classification 1			Classification 2								
		Regime R			PMS			LMS			Regime R		
Industry j	Name	FR	JP	NL	FR	JP	NL	FR	JP	NL	FR	JP	NL
1	Livestock, seafood and flour products	PC-PR	PC-EB	PC-MO	PC*	PC*	mover	mover	mover	PR*			
2	Miscellaneous food and related products	IC-EB	PC-PR	IC-PR	IC*	PC*	IC*	EB*	mover	mover	IC*-EB*		
3	Beverages and tobacco	IC-MO	PC-EB	IC-MO	mover	PC*	IC*	PR*	EB*	PR*		PC*-EB*	IC*-PR*
4	Textiles	IC-EB	IC-PR	IC-PR	IC*	mover	IC*	EB*	mover	mover	IC*-EB*		
5	Clothing and skin goods	IC-EB	PC-PR	PC-MO	IC*	PC*	PC*	EB*	PR*	PR*	IC*-EB*	PC*-PR*	PC*-PR*
6	Wooden products	IC-PR	PC-EB	IC-EB	IC*	mover	IC*	mover	mover	mover			
7	Furniture	IC-PR	IC-PR	IC-PR	IC*	mover	IC*	mover	PR*	mover			
8	Pulp, paper and paper products	IC-EB	PC-MO	PC-MO	IC*	PC*	mover	mover	PR*	PR*		PC*-PR*	
9	Publishing, (re)printing	IC-EB	PC-PR	IC-MO	IC*	PC*	IC*	mover	PR*	PR*		PC*-PR*	IC*-PR*
10	Chemicals	IC-PR	IC-EB	IC-EB	IC*	IC*	IC*	mover	mover	mover			
11	Organic chemical products	PC-MO	IC-PR	IC-PR	PC*	IC*	IC*	PR*	mover	EB*	PC*-PR*		IC*-EB*
12	Pharmaceuticals	IC-MO	IC-PR	IC-EB	mover	IC*	IC*	PR*	mover	mover			
13	Miscellaneous chemical products	IC-MO	IC-MO	PC-PR	IC*	IC*	mover	PR*	PR*	mover	IC*-PR*	IC*-PR*	
14	Plastics	IC-PR	PC-MO	IC-PR	IC*	PC*	IC*	mover	PR*	mover		PC*-PR*	
15	Ceramic, stone and clay products	IC-EB	PC-MO	IC-MO	IC*	mover	IC*	mover	PR*	PR*			IC*-PR*
16	Steel	IC-EB	PC-PR	IC-EB	IC*	mover	IC*	EB*	mover	PR*	IC*-EB*		IC*-PR*
17	Metals	IC-PR	IC-PR	IC-PR	IC*	mover	IC*	EB*	PR*	EB*	IC*-EB*		IC*-EB*
18	Architectural metal products	PC-PR	PC-EB	IC-EB	mover	mover	IC*	PR*	mover	mover			
19	Other metal products	IC-EB	PC-PR	IC-PR	IC*	mover	IC*	EB*	PR*	PR*	IC*-EB*		IC*-PR*
20	Special industrial machinery	IC-EB	IC-EB	IC-PR	IC*	mover	IC*	mover	mover	PR*			IC*-PR*
21	General industrial machinery	IC-PR	PC-MO	IC-PR	mover	PC*	IC*	mover	PR*	mover			
22	Miscellaneous machinery	IC-MO	PC-MO	IC-MO	mover	mover	IC*	PR*	PR*	PR*			IC*-PR*
23	Industrial apparatus	PC-PR	IC-PR	IC-EB	PC*	mover	IC*	PR*	mover	mover	PC*-PR*		
24	Household electrical appliances	IC-PR	PC-PR	IC-MO	IC*	PC*	IC*	PR*	mover	PR*	IC*-PR*		IC*-PR*
25	Other electrical machinery	IC-PR	PC-MO	IC-PR	mover	PC*	IC*	mover	PR*	mover		PC*-PR*	
26	Electronic parts and components	IC-PR	IC-EB	IC-EB	mover	IC*	IC*	mover	mover	mover			
27	Motor vehicles	PC-MO	IC-PR	IC-PR	mover	IC*	IC*	PR*	mover	mover			
28	Other transport equipment	IC-PR	IC-PR	IC-EB	IC*	mover	IC*	mover	mover	EB*			IC*-EB*
29	Precision instruments	IC-PR	PC-PR	IC-EB	IC*	mover	IC*	EB*	PR*	mover	IC*-EB*		
30	Miscellaneous manufacturing products	IC-PR	IC-PR	IC-MO	IC*	IC*	mover	mover	EB*	PR*		IC*-EB*	
Total		IC-EB	PC-PR	IC-EB									

Table B.6: Industry-specific input shares $(\alpha_J)_j$ $(J = N, M, K)$, output elasticities $\left(\widehat{\varepsilon}_J^Q\right)_j$, scale elasticity $\widehat{\lambda}_j$, joint market imperfections parameter $\widehat{\psi}_j$, and corresponding price-cost mark-up $\widehat{\mu}_j$ and absolute extent of rent sharing $\widehat{\phi}_j$ or labor supply elasticity $\left(\widehat{\varepsilon}_w^N\right)_j$ by country

FRANCE														
Regime $R = IC\text{-}EB$ [30% of industries, 51% of firms]														
Industry j	$(\alpha_N)_j$	$(\alpha_M)_j$	$(\alpha_K)_j$	$\left(\widehat{\varepsilon}_N^Q\right)_j$	$\left(\widehat{\varepsilon}_M^Q\right)_j$	$\left(\widehat{\varepsilon}_K^Q\right)_j$	$\widehat{\lambda}_j$	$\widehat{\psi}_j$	$\widehat{\mu}_j$	$\widehat{\gamma}_j$	$\widehat{\phi}_j$	*Sargan*	$m1$	$m2$
15	0.290	0.485	0.225	0.253 (0.033)	0.636 (0.032)	0.082 (0.042)	0.971 (0.024)	0.436 (0.146)	1.310 (0.066)	0.430 (0.131)	0.300 (0.064)	0.798	-11.23	-1.43
8	0.243	0.548	0.209	0.183 (0.068)	0.677 (0.057)	0.077 (0.118)	0.938 (0.027)	0.480 (0.373)	1.235 (0.103)	0.453 (0.317)	0.312 (0.150)	0.188	-7.60	-3.73
9	0.337	0.474	0.189	0.316 (0.031)	0.670 (0.022)	0.014 (0.040)	1.000 (0.021)	0.477 (0.122)	1.413 (0.046)	0.603 (0.140)	0.376 (0.054)	0.000	-11.53	-1.21
20	0.345	0.490	0.165	0.299 (0.059)	0.607 (0.032)	0.073 (0.077)	0.979 (0.027)	0.371 (0.221)	1.238 (0.066)	0.625 (0.346)	0.385 (0.131)	0.839	-10.79	1.05
2	0.245	0.568	0.188	0.145 (0.034)	0.735 (0.024)	0.056 (0.045)	0.937 (0.020)	0.702 (0.163)	1.296 (0.043)	0.707 (0.150)	0.414 (0.052)	0.695	-9.69	-2.32
19	0.382	0.442	0.176	0.316 (0.028)	0.595 (0.016)	0.037 (0.033)	0.948 (0.018)	0.518 (0.163)	1.346 (0.036)	0.833 (0.139)	0.454 (0.041)	0.000	-18.86	-2.27
4	0.336	0.492	0.172	0.249 (0.045)	0.649 (0.025)	-0.008 (0.039)	0.891 (0.039)	0.577 (0.151)	1.320 (0.051)	0.853 (0.209)	0.460 (0.061)	0.332	-10.62	-1.86
16	0.297	0.531	0.172	0.206 (0.035)	0.763 (0.025)	-0.007 (0.043)	0.962 (0.017)	0.745 (0.139)	1.438 (0.046)	0.894 (0.151)	0.472 (0.042)	0.798	-7.21	-0.52
5	0.407	0.420	0.173	0.286 (0.054)	0.608 (0.017)	0.018 (0.042)	0.912 (0.034)	0.744 (0.144)	1.447 (0.040)	1.211 (0.222)	0.548 (0.045)	0.002	-11.64	-1.30
Regime $R = IC\text{-}PR$ [40% of industries, 38% of firms]														
Industry j	$(\alpha_N)_j$	$(\alpha_M)_j$	$(\alpha_K)_j$	$\left(\widehat{\varepsilon}_N^Q\right)_j$	$\left(\widehat{\varepsilon}_M^Q\right)_j$	$\left(\widehat{\varepsilon}_K^Q\right)_j$	$\widehat{\lambda}_j$	$\widehat{\psi}_j$	$\widehat{\mu}_j$			*Sargan*	$m1$	$m2$
26	0.317	0.491	0.191	0.324 (0.060)	0.553 (0.029)	0.112 (0.061)	0.989 (0.033)	0.106 (0.219)	1.125 (0.058)			0.006	-6.76	-1.42
21	0.308	0.511	0.182	0.331 (0.075)	0.590 (0.054)	-0.006 (0.105)	0.915 (0.042)	0.079 (0.317)	1.155 (0.106)			1.000	-8.02	0.65
10	0.225	0.554	0.221	0.304 (0.060)	0.668 (0.043)	0.033 (0.070)	1.005 (0.028)	-0.148 (0.300)	1.205 (0.078)			0.997	-7.45	-1.97
24	0.324	0.492	0.184	0.445 (0.056)	0.603 (0.041)	-0.033 (0.086)	1.015 (0.027)	-0.151 (0.240)	1.225 (0.084)			0.992	-5.75	-0.35
7	0.310	0.524	0.166	0.361 (0.049)	0.648 (0.030)	-0.014 (0.064)	0.996 (0.022)	0.074 (0.196)	1.237 (0.058)			0.622	-9.96	-1.98
14	0.275	0.542	0.183	0.305 (0.033)	0.673 (0.021)	0.041 (0.040)	1.019 (0.017)	0.133 (0.140)	1.242 (0.040)			0.001	-14.29	-1.97
25	0.329	0.404	0.267	0.425 (0.065)	0.507 (0.051)	0.087 (0.084)	1.020 (0.027)	-0.041 (0.269)	1.254 (0.126)			0.994	-2.34	-1.00
6	0.259	0.549	0.192	0.278 (0.040)	0.698 (0.023)	0.032 (0.053)	1.008 (0.022)	0.194 (0.186)	1.270 (0.042)			0.005	-11.62	-0.30
28	0.293	0.521	0.185	0.309 (0.050)	0.666 (0.030)	0.025 (0.067)	1.000 (0.021)	0.221 (0.212)	1.277 (0.058)			0.753	-6.81	-0.89
30	0.328	0.474	0.198	0.385 (0.056)	0.632 (0.030)	-0.015 (0.062)	1.003 (0.036)	0.160 (0.208)	1.334 (0.064)			1.000	-8.20	1.42
17	0.343	0.466	0.192	0.392 (0.037)	0.667 (0.022)	-0.001 (0.045)	1.058 (0.020)	0.287 (0.138)	1.431 (0.048)			0.009	-14.89	-5.06
29	0.358	0.391	0.251	0.423 (0.074)	0.568 (0.038)	0.015 (0.089)	1.005 (0.033)	0.269 (0.270)	1.451 (0.098)			0.349	-7.24	-0.23
Regime $R = IC\text{-}MO$ [13% of industries, 5% of firms]														
Industry j	$(\alpha_N)_j$	$(\alpha_M)_j$	$(\alpha_K)_j$	$\left(\widehat{\varepsilon}_N^Q\right)_j$	$\left(\widehat{\varepsilon}_M^Q\right)_j$	$\left(\widehat{\varepsilon}_K^Q\right)_j$	$\widehat{\lambda}_j$	$\widehat{\psi}_j$	$\widehat{\mu}_j$	$\widehat{\beta}_j$	$\left(\widehat{\varepsilon}_w^N\right)_j$	*Sargan*	$m1$	$m2$
3	0.181	0.590	0.229	0.328 (0.044)	0.676 (0.039)	0.060 (0.063)	1.064 (0.025)	-0.669 (0.281)	1.145 (0.066)	0.631 (0.107)	1.711 (0.784)	1.000	-4.87	-1.88
12	0.230	0.545	0.225	0.427 (0.081)	0.660 (0.049)	-0.066 (0.120)	1.022 (0.025)	-0.648 (0.430)	1.211 (0.089)	0.651 (0.166)	1.867 (1.363)	1.000	-4.28	-0.39
22	0.326	0.482	0.192	0.461 (0.073)	0.535 (0.045)	0.010 (0.105)	1.006 (0.029)	-0.304 (0.301)	1.111 (0.094)	0.785 (0.180)	3.659 (3.896)	0.949	-8.94	-0.75
13	0.255	0.543	0.203	0.402 (0.063)	0.678 (0.040)	-0.034 (0.091)	1.046 (0.027)	-0.330 (0.307)	1.249 (0.074)	0.791 (0.162)	3.787 (3.715)	0.975	-4.71	-1.05

Table B.6 (ctd): Industry-specific input shares $(\alpha_J)_j$ $(J = N, M, K)$, output elasticities $\left(\widehat{\varepsilon}_J^Q\right)_j$, scale elasticity $\widehat{\lambda}_j$, joint market imperfections parameter $\widehat{\psi}_j$, and corresponding price-cost mark-up $\widehat{\mu}_j$ and absolute extent of rent sharing $\widehat{\phi}_j$ or labor supply elasticity $\left(\widehat{\varepsilon}_w^N\right)_j$ by country

Industry j	$(\alpha_N)_j$	$(\alpha_M)_j$	$(\alpha_K)_j$	$\left(\widehat{\varepsilon}_N^Q\right)_j$	$\left(\widehat{\varepsilon}_M^Q\right)_j$	$\left(\widehat{\varepsilon}_K^Q\right)_j$	$\widehat{\lambda}_j$	$\widehat{\psi}_j$	$\widehat{\mu}_j$	$\widehat{\beta}_j$	$\left(\widehat{\varepsilon}_w^N\right)_j$	*Sargan*	*m*1	*m*2
FRANCE (ctd)														
Regime $R = PC\text{-}PR$ [10% of industries, 5% of firms]														
23	0.330	0.423	0.247	0.388 (0.077)	0.407 (0.043)	0.166 (0.090)	0.960 (0.045)	-0.213 (0.293)	0.962 (0.102)			1.000	-3.69	-0.39
18	0.273	0.580	0.147	0.329 (0.059)	0.594 (0.042)	0.015 (0.067)	0.938 (0.046)	-0.177 (0.249)	1.024 (0.073)			1.000	-7.55	-2.38
1	0.221	0.602	0.176	0.237 (0.055)	0.656 (0.028)	0.015 (0.055)	0.908 (0.033)	0.021 (0.263)	1.089 (0.047)			1.000	-6.83	-1.63
Regime $R = PC\text{-}MO$ [7% of industries, 2% of firms]														
11	0.198	0.610	0.193	0.360 (0.072)	0.631 (0.029)	0.028 (0.087)	1.019 (0.023)	-0.788 (0.396)	1.035 (0.048)	0.568 (0.131)	1.314 (0.703)	0.998	-3.70	-1.94
27	0.257	0.561	0.182	0.347 (0.073)	0.564 (0.042)	0.059 (0.096)	0.971 (0.028)	-0.348 (0.334)	1.005 (0.074)	0.743 (0.193)	2.885 (2.918)	1.000	-5.65	1.59
JAPAN														
Regime $R = PC\text{-}PR$ [23% of industries, 27% of firms]														
5	0.223	0.717	0.060	0.287 (0.053)	0.719 (0.052)	0.049 (0.098)	1.055 (0.036)	-0.285 (0.299)	1.003 (0.072)			1.000	-3.65	-1.13
9	0.249	0.664	0.087	0.324 (0.043)	0.671 (0.036)	0.051 (0.074)	1.046 (0.019)	-0.289 (0.221)	1.011 (0.054)			0.817	-7.86	-2.30
24	0.201	0.731	0.069	0.231 (0.053)	0.766 (0.028)	0.056 (0.054)	1.054 (0.029)	-0.101 (0.277)	1.049 (0.038)			0.996	-3.22	-1.10
2	0.186	0.738	0.076	0.144 (0.025)	0.776 (0.027)	0.101 (0.049)	1.021 (0.017)	0.276 (0.164)	1.050 (0.036)			0.014	-5.95	-1.38
29	0.227	0.678	0.095	0.303 (0.043)	0.720 (0.026)	0.051 (0.058)	1.074 (0.019)	-0.272 (0.217)	1.062 (0.038)			0.996	-4.82	-2.11
16	0.165	0.752	0.083	0.194 (0.044)	0.800 (0.050)	0.025 (0.091)	1.018 (0.009)	-0.111 (0.329)	1.063 (0.066)			0.000	-5.27	-2.15
19	0.229	0.679	0.092	0.250 (0.034)	0.745 (0.020)	0.072 (0.041)	1.068 (0.020)	0.005 (0.163)	1.098 (0.030)			0.252	-7.51	-1.55
Regime $R = PC\text{-}MO$ [20% of industries, 27% of firms]														
25	0.228	0.694	0.079	0.387 (0.044)	0.724 (0.025)	-0.024 (0.060)	1.088 (0.021)	-0.657 (0.222)	1.044 (0.036)	0.614 (0.087)	1.589 (0.582)	0.000	-4.52	-0.33
15	0.197	0.714	0.089	0.310 (0.042)	0.759 (0.039)	0.051 (0.066)	1.120 (0.026)	-0.514 (0.247)	1.062 (0.055)	0.674 (0.114)	2.065 (1.069)	0.649	-6.11	-2.80
21	0.217	0.685	0.097	0.323 (0.062)	0.693 (0.028)	0.084 (0.074)	1.099 (0.026)	-0.475 (0.314)	1.010 (0.041)	0.680 (0.151)	2.127 (1.472)	0.996	-5.03	-2.97
14	0.176	0.742	0.082	0.244 (0.038)	0.754 (0.032)	0.090 (0.062)	1.088 (0.020)	-0.373 (0.247)	1.015 (0.043)	0.732 (0.137)	2.725 (1.900)	0.213	-7.21	-1.60
8	0.166	0.755	0.079	0.212 (0.042)	0.723 (0.049)	0.103 (0.087)	1.038 (0.022)	-0.322 (0.309)	0.957 (0.065)	0.748 (0.193)	2.975 (3.043)	0.778	-4.97	-0.53
22	0.238	0.669	0.092	0.335 (0.045)	0.712 (0.023)	0.014 (0.051)	1.060 (0.020)	-0.341 (0.208)	1.064 (0.034)	0.758 (0.116)	3.125 (1.972)	0.000	-6.78	-1.69

Table B.6 (ctd): Industry-specific input shares $(\alpha_J)_j$ $(J = N, M, K)$, output elasticities $\left(\widehat{\varepsilon}_J^Q\right)_j$, scale elasticity $\widehat{\lambda}_j$, joint market imperfections parameter $\widehat{\psi}_j$, and corresponding price-cost mark-up $\widehat{\mu}_j$ and absolute extent of rent sharing $\widehat{\phi}_j$ or labor supply elasticity $\left(\widehat{\varepsilon}_w^N\right)_j$ by country

JAPAN (ctd)														
Regime $R = IC\text{-}PR$ [30% of industries, 24% of firms]														
Industry j	$(\alpha_N)_j$	$(\alpha_M)_j$	$(\alpha_K)_j$	$\left(\widehat{\varepsilon}_N^Q\right)_j$	$\left(\widehat{\varepsilon}_M^Q\right)_j$	$\left(\widehat{\varepsilon}_K^Q\right)_j$	$\widehat{\lambda}_j$	$\widehat{\psi}_j$	$\widehat{\mu}_j$			*Sargan*	$m1$	$m2$
17	0.169	0.744	0.087	0.217 (0.036)	0.821 (0.029)	0.008 (0.052)	1.045 (0.020)	-0.182 (0.236)	1.103 (0.039)			0.000	-2.86	0.45
4	0.226	0.692	0.082	0.195 (0.033)	0.765 (0.019)	0.055 (0.042)	1.015 (0.018)	0.242 (0.159)	1.106 (0.028)			1.000	-4.13	1.18
7	0.199	0.727	0.074	0.262 (0.048)	0.811 (0.023)	-0.041 (0.059)	1.032 (0.024)	-0.199 (0.263)	1.116 (0.032)			0.998	-3.30	0.80
28	0.238	0.685	0.077	0.235 (0.028)	0.775 (0.029)	0.002 (0.049)	1.012 (0.014)	0.145 (0.149)	1.131 (0.042)			0.886	-3.40	-1.27
27	0.187	0.731	0.082	0.178 (0.034)	0.830 (0.019)	0.027 (0.045)	1.036 (0.014)	0.183 (0.199)	1.136 (0.026)			0.000	-7.77	-4.46
23	0.225	0.702	0.073	0.205 (0.044)	0.809 (0.034)	0.038 (0.074)	1.051 (0.018)	0.242 (0.236)	1.151 (0.049)			0.874	-5.64	-2.90
12	0.212	0.648	0.140	0.221 (0.041)	0.761 (0.033)	0.073 (0.068)	1.055 (0.015)	0.133 (0.235)	1.174 (0.051)			0.044	-4.86	-2.68
11	0.139	0.758	0.103	0.147 (0.026)	0.917 (0.030)	-0.030 (0.041)	1.035 (0.013)	0.146 (0.199)	1.210 (0.040)			0.997	-3.05	-0.07
30	0.193	0.719	0.088	0.188 (0.053)	0.895 (0.023)	-0.050 (0.047)	1.032 (0.029)	0.271 (0.283)	1.244 (0.032)			1.000	-2.98	-2.45
Regime $R = PC\text{-}EB$ [13% of industries, 8% of firms]														
Industry j	$(\alpha_N)_j$	$(\alpha_M)_j$	$(\alpha_K)_j$	$\left(\widehat{\varepsilon}_N^Q\right)_j$	$\left(\widehat{\varepsilon}_M^Q\right)_j$	$\left(\widehat{\varepsilon}_K^Q\right)_j$	$\widehat{\lambda}_j$	$\widehat{\psi}_j$	$\widehat{\mu}_j$	$\widehat{\gamma}_j$	$\widehat{\phi}_j$	*Sargan*	$m1$	$m2$
2	0.155	0.784	0.061	0.112 (0.023)	0.851 (0.011)	0.030 (0.029)	0.992 (0.014)	0.367 (0.158)	1.086 (0.014)	0.862 (0.363)	0.463 (0.105)	0.919	-3.94	-1.13
13	0.129	0.786	0.086	0.039 (0.032)	0.810 (0.038)	0.126 (0.037)	0.975 (0.016)	0.726 (0.247)	1.031 (0.049)	1.060 (0.358)	0.514 (0.084)	0.877	-3.27	0.28
1	0.150	0.790	0.060	0.094 (0.036)	0.847 (0.017)	0.057 (0.027)	0.997 (0.030)	0.450 (0.246)	1.072 (0.022)	1.061 (0.576)	0.515 (0.136)	0.972	-4.54	-1.68
18	0.189	0.744	0.067	0.129 (0.043)	0.818 (0.047)	0.053 (0.083)	0.999 (0.015)	0.419 (0.283)	1.099 (0.063)	1.068 (0.668)	0.516 (0.156)	0.000	-4.04	-0.97
Regime $R = IC\text{-}EB$ [10% of industries, 12% of firms]														
Industry j	$(\alpha_N)_j$	$(\alpha_M)_j$	$(\alpha_K)_j$	$\left(\widehat{\varepsilon}_N^Q\right)_j$	$\left(\widehat{\varepsilon}_M^Q\right)_j$	$\left(\widehat{\varepsilon}_K^Q\right)_j$	$\widehat{\lambda}_j$	$\widehat{\psi}_j$	$\widehat{\mu}_j$	$\widehat{\gamma}_j$	$\widehat{\phi}_j$	*Sargan*	$m1$	$m2$
26	0.209	0.681	0.110	0.287 (0.040)	0.823 (0.028)	0.029 (0.055)	1.033 (0.017)	0.349 (0.213)	1.209 (0.041)	0.551 (0.326)	0.355 (0.136)	0.000	-6.63	-2.00
10	0.171	0.730	0.099	0.324 (0.025)	0.847 (0.025)	0.045 (0.037)	1.007 (0.015)	0.483 (0.159)	1.159 (0.035)	0.719 (0.226)	0.418 (0.077)	0.027	-5.46	-3.44
20	0.203	0.716	0.081	0.231 (0.042)	0.804 (0.032)	0.063 (0.066)	0.993 (0.014)	0.502 (0.239)	1.123 (0.045)	1.128 (0.503)	0.530 (0.111)	0.420	-5.27	-2.01
Regime $R = IC\text{-}MO$ [3% of industries, 3% of firms]														
Industry j	$(\alpha_N)_j$	$(\alpha_M)_j$	$(\alpha_K)_j$	$\left(\widehat{\varepsilon}_N^Q\right)_j$	$\left(\widehat{\varepsilon}_M^Q\right)_j$	$\left(\widehat{\varepsilon}_K^Q\right)_j$	$\widehat{\lambda}_j$	$\widehat{\psi}_j$	$\widehat{\mu}_j$	$\widehat{\beta}_j$	$\left(\widehat{\varepsilon}_w^N\right)_j$	*Sargan*	$m1$	$m2$
13	0.172	0.728	0.101	0.268 (0.046)	0.842 (0.031)	0.000 (0.038)	1.110 (0.031)	-0.402 (0.275)	1.158 (0.042)	0.742 (0.133)	2.880 (1.999)	0.768	-5.61	-3.85

Table B.6 (ctd): Industry-specific input shares $(\alpha_J)_j$ $(J = N, M, K)$, output elasticities $\left(\widehat{\varepsilon}_J^Q\right)_j$, scale elasticity $\widehat{\lambda}_j$, joint market imperfections parameter $\widehat{\psi}_j$, and corresponding price-cost mark-up $\widehat{\mu}_j$ and absolute extent of rent sharing $\widehat{\phi}_j$ or labor supply elasticity $\left(\widehat{\varepsilon}_w^N\right)_j$ by country

THE NETHERLANDS

Regime $R = IC\text{-}PR$ [37% of industries, 53% of firms]

Industry j	$(\alpha_N)_j$	$(\alpha_M)_j$	$(\alpha_K)_j$	$\left(\widehat{\varepsilon}_N^Q\right)_j$	$\left(\widehat{\varepsilon}_M^Q\right)_j$	$\left(\widehat{\varepsilon}_K^Q\right)_j$	$\widehat{\lambda}_j$	$\widehat{\psi}_j$	$\widehat{\mu}_j$			*Sargan*	$m1$	$m2$
4	0.269	0.461	0.270	0.338 (0.058)	0.569 (0.032)	0.103 (0.070)	1.010 (0.036)	-0.023 (0.260)	1.235 (0.070)			1.000	-4.46	-1.42
14	0.240	0.450	0.310	0.288 (0.036)	0.582 (0.022)	0.116 (0.046)	0.986 (0.020)	0.089 (0.179)	1.292 (0.050)			1.000	-7.33	-0.61
27	0.249	0.542	0.209	0.282 (0.042)	0.708 (0.030)	0.037 (0.067)	1.027 (0.014)	0.174 (0.216)	1.307 (0.055)			1.000	-4.97	-2.36
20	0.307	0.430	0.262	0.439 (0.038)	0.563 (0.023)	0.078 (0.052)	1.080 (0.018)	-0.118 (0.163)	1.309 (0.053)			1.000	-9.45	-2.33
21	0.314	0.430	0.257	0.340 (0.032)	0.576 (0.024)	0.079 (0.051)	0.995 (0.020)	0.258 (0.143)	1.342 (0.055)			1.000	-8.12	-2.35
17	0.267	0.466	0.268	0.286 (0.043)	0.632 (0.033)	0.076 (0.057)	0.995 (0.025)	0.284 (0.200)	1.357 (0.070)			1.000	-4.67	-0.37
25	0.267	0.469	0.264	0.331 (0.087)	0.640 (0.059)	0.057 (0.132)	1.028 (0.033)	0.126 (0.434)	1.365 (0.126)			1.000	-1.82	1.06
11	0.171	0.504	0.325	0.190 (0.074)	0.693 (0.034)	0.144 (0.082)	1.027 (0.034)	0.269 (0.470)	1.376 (0.067)			1.000	-4.59	-2.43
2	0.242	0.488	0.270	0.307 (0.025)	0.679 (0.018)	0.078 (0.036)	1.063 (0.012)	0.121 (0.126)	1.390 (0.037)			0.996	-8.21	-3.43
19	0.323	0.358	0.319	0.440 (0.033)	0.499 (0.024)	0.066 (0.053)	1.005 (0.020)	0.032 (0.157)	1.394 (0.067)			1.000	-10.75	-3.39
7	0.300	0.448	0.252	0.341 (0.025)	0.635 (0.018)	0.072 (0.036)	1.048 (0.012)	0.280 (0.109)	1.418 (0.041)			1.000	-6.12	-1.68

Regime $R = IC\text{-}EB$ [30% of industries, 20% of firms]

Industry j	$(\alpha_N)_j$	$(\alpha_M)_j$	$(\alpha_K)_j$	$\left(\widehat{\varepsilon}_N^Q\right)_j$	$\left(\widehat{\varepsilon}_M^Q\right)_j$	$\left(\widehat{\varepsilon}_K^Q\right)_j$	$\widehat{\lambda}_j$	$\widehat{\psi}_j$	$\widehat{\mu}_j$	$\widehat{\gamma}_j$	$\widehat{\phi}_j$	*Sargan*	$m1$	$m2$
12	0.230	0.386	0.384	0.307 (0.102)	0.694 (0.117)	0.066 (0.166)	1.067 (0.049)	0.465 (0.623)	1.797 (0.304)	0.155 (0.189)	0.135 (0.142)	1.000	-0.40	-0.37
16	0.269	0.445	0.285	0.304 (0.048)	0.643 (0.039)	0.074 (0.069)	1.021 (0.022)	0.315 (0.234)	1.444 (0.087)	0.206 (0.144)	0.171 (0.099)	1.000	-2.66	1.87
16	0.270	0.493	0.237	0.234 (0.041)	0.627 (0.033)	0.113 (0.069)	0.974 (0.022)	0.406 (0.207)	1.272 (0.067)	0.364 (0.169)	0.267 (0.091)	1.000	-7.17	-1.67
18	0.292	0.472	0.236	0.273 (0.032)	0.629 (0.022)	0.092 (0.050)	0.994 (0.015)	0.397 (0.149)	1.331 (0.046)	0.369 (0.127)	0.270 (0.068)	0.998	-9.95	-1.97
29	0.364	0.341	0.296	0.374 (0.062)	0.503 (0.025)	0.136 (0.086)	1.013 (0.028)	0.451 (0.257)	1.478 (0.104)	0.375 (0.190)	0.273 (0.101)	1.000	-5.01	-1.12
10	0.223	0.479	0.298	0.136 (0.073)	0.624 (0.058)	0.255 (0.056)	1.016 (0.042)	0.693 (0.326)	1.303 (0.121)	0.399 (0.185)	0.285 (0.095)	1.000	-0.84	-1.10
26	0.287	0.428	0.285	0.247 (0.080)	0.629 (0.038)	0.107 (0.090)	0.983 (0.043)	0.609 (0.337)	1.470 (0.089)	0.417 (0.213)	0.294 (0.106)	1.000	-3.52	-1.46
23	0.290	0.460	0.249	0.208 (0.083)	0.666 (0.049)	0.177 (0.104)	1.051 (0.040)	0.731 (0.347)	1.447 (0.106)	0.588 (0.251)	0.370 (0.100)	1.000	-1.30	1.39
28	0.271	0.487	0.242	0.171 (0.045)	0.667 (0.025)	0.133 (0.060)	0.971 (0.023)	0.738 (0.202)	1.369 (0.051)	0.603 (0.149)	0.376 (0.058)	1.000	-4.44	-1.00

Table B.6 (ctd): Industry-specific input shares $(\alpha_J)_j$ $(J = N, M, K)$, output elasticities $\left(\widehat{\varepsilon}_J^Q\right)_j$, scale elasticity $\widehat{\lambda}_j$, joint market imperfections parameter $\widehat{\psi}_j$, and corresponding price-cost mark-up $\widehat{\mu}_j$ and absolute extent of rent sharing $\widehat{\phi}_j$ or labor supply elasticity $\left(\widehat{\varepsilon}_w^N\right)_j$ by country

THE NETHERLANDS (ctd)														
Regime $R = IC\text{-}MO$ [20% of industries, 18% of firms]														
Industry j	$(\alpha_N)_j$	$(\alpha_M)_j$	$(\alpha_K)_j$	$\left(\widehat{\varepsilon}_N^Q\right)_j$	$\left(\widehat{\varepsilon}_M^Q\right)_j$	$\left(\widehat{\varepsilon}_K^Q\right)_j$	$\widehat{\lambda}_j$	$\widehat{\psi}_j$	$\widehat{\mu}_j$	$\widehat{\beta}_j$	$\left(\widehat{\varepsilon}_w^N\right)_j$	*Sargan*	*m*1	*m*2
3	0.148	0.460	0.392	0.467 (0.080)	0.567 (0.044)	0.012 (0.091)	1.046 (0.041)	-1.930 (0.590)	1.232 (0.095)	0.390 (0.079)	0.638 (0.213)	1.000	-2.04	-0.94
30	0.304	0.402	0.294	0.576 (0.081)	0.491 (0.060)	0.008 (0.133)	1.075 (0.035)	-0.668 (0.399)	1.223 (0.150)	0.647 (0.142)	1.832 (1.141)	1.000	-3.11	-1.58
22	0.290	0.414	0.296	0.544 (0.065)	0.527 (0.048)	-0.007 (0.089)	1.064 (0.030)	-0.604 (0.299)	1.271 (0.117)	0.678 (0.107)	2.106 (1.037)	0.993	-2.78	-1.98
15	0.251	0.416	0.334	0.426 (0.039)	0.501 (0.028)	0.096 (0.053)	1.023 (0.023)	-0.496 (0.196)	1.205 (0.068)	0.709 (0.081)	2.431 (0.955)	1.000	-6.67	-1.12
24	0.264	0.406	0.330	0.428 (0.077)	0.519 (0.042)	0.074 (0.093)	1.022 (0.044)	-0.341 (0.356)	1.279 (0.102)	0.789 (0.172)	3.746 (3.868)	1.000	-2.61	1.17
9	0.323	0.369	0.308	0.523 (0.034)	0.486 (0.022)	0.051 (0.052)	1.059 (0.016)	-0.304 (0.158)	1.315 (0.061)	0.812 (0.077)	4.322 (2.175)	1.000	-8.04	-1.23
Regime $R = PC\text{-}MO$ [10% of industries, 8% of firms]														
Industry j	$(\alpha_N)_j$	$(\alpha_M)_j$	$(\alpha_K)_j$	$\left(\widehat{\varepsilon}_N^Q\right)_j$	$\left(\widehat{\varepsilon}_M^Q\right)_j$	$\left(\widehat{\varepsilon}_K^Q\right)_j$	$\widehat{\lambda}_j$	$\widehat{\psi}_j$	$\widehat{\mu}_j$	$\widehat{\beta}_j$	$\left(\widehat{\varepsilon}_w^N\right)_j$	*Sargan*	*m*1	*m*2
8	0.241	0.474	0.285	0.545 (0.067)	0.480 (0.060)	0.108 (0.113)	1.133 (0.032)	-1.255 (0.380)	1.012 (0.128)	0.446 (0.086)	0.806 (0.279)	1.000	-6.12	-2.35
1	0.148	0.643	0.209	0.294 (0.047)	0.682 (0.033)	0.035 (0.073)	1.011 (0.024)	-0.929 (0.361)	1.061 (0.052)	0.533 (0.103)	1.142 (0.474)	1.000	-4.92	-3.49
5	0.287	0.496	0.217	0.431 (0.119)	0.453 (0.040)	0.090 (0.108)	0.974 (0.051)	-0.592 (0.448)	0.913 (0.080)	0.607 (0.184)	1.542 (1.189)	1.000	-2.29	-0.45
Regime $R = PC\text{-}PR$ [3% of industries, 1% of firms]														
Industry j	$(\alpha_N)_j$	$(\alpha_M)_j$	$(\alpha_K)_j$	$\left(\widehat{\varepsilon}_N^Q\right)_j$	$\left(\widehat{\varepsilon}_M^Q\right)_j$	$\left(\widehat{\varepsilon}_K^Q\right)_j$	$\widehat{\lambda}_j$	$\widehat{\psi}_j$	$\widehat{\mu}_j$			*Sargan*	*m*1	*m*2
13	0.198	0.480	0.322	0.241 (0.072)	0.504 (0.051)	0.246 (0.103)	0.992 (0.044)	-0.169 (0.438)	1.050 (0.105)			1.000	-3.01	-1.22

Notes: First-step robust standard errors in parentheses. Time dummies are included but not reported. The set of instruments includes the lagged levels of n, m and k dated $(t-2)$ and $(t-3)$ in the first-differenced equations and the lagged first-differences of n, m and k dated $(t-1)$ in the levels equations. Industries within $R = PC\text{-}PR$ and $R = IC\text{-}PR$ are ranked according to $\widehat{\mu}_j$, industries within $R = PC\text{-}EB$ and $R = IC\text{-}EB$ are ranked according to $\widehat{\phi}_j$ and industries within $R = PC\text{-}MO$ and $R = IC\text{-}MO$ are ranked according to $\widehat{\beta}_j$.

$$\widehat{\psi}_j = \frac{\left(\widehat{\varepsilon}_M^Q\right)_j}{(\alpha_M)_j} - \frac{\left(\widehat{\varepsilon}_N^Q\right)_j}{(\alpha_N)_j} \qquad \widehat{\gamma}_j = \frac{\left(\widehat{\varepsilon}_N^Q\right)_j - \left[\left(\widehat{\varepsilon}_M^Q\right)_j \frac{(\alpha_N)_j}{(\alpha_M)_j}\right]}{\frac{\left(\widehat{\varepsilon}_M^Q\right)_j}{(\alpha_M)_j}\left[(\alpha_N)_j + (\alpha_M)_j - 1\right]} \qquad \widehat{\beta}_j = \frac{(\alpha_N)_j}{(\alpha_M)_j} \frac{\left(\widehat{\varepsilon}_M^Q\right)_j}{\left(\widehat{\varepsilon}_N^Q\right)_j}$$

$$\widehat{\mu}_j = \frac{\left(\widehat{\varepsilon}_M^Q\right)_j}{(\alpha_M)_j} \qquad \widehat{\phi}_j = \frac{\widehat{\gamma}_j}{1+\widehat{\gamma}_j} \qquad \left(\widehat{\varepsilon}_w^N\right)_j = \frac{\widehat{\beta}_j}{1-\widehat{\beta}_j}$$

Table B.7: Correlations between estimates of product and labor market imperfections by country

	$\rho_{\widehat{\mu}_j,\widehat{\gamma}_j}$	$\rho_{\widehat{\mu}_j,\widehat{\beta}_j}$
FRANCE		
All industries	0.788*** [0.814***]	0.777*** [0.749***]
$R = IC\text{-}EB$	0.683** [0.641**]	
$R = IC\text{-}MO$		0.400 [0.429]
JAPAN		
All industries	0.502*** [0.164*]	-0.463** [0.184]
$R = PC\text{-}MO$		-0.029 [-0.704]
THE NETHERLANDS		
All industries	0.728*** [0.799***]	0.738*** [0.731*]
$R = IC\text{-}EB$	-0.100 [-0.260]	
$R = IC\text{-}MO$		0.600 [0.352]

Notes: Rank correlation is reported. A robust correlation is reported in square brackets.
***Significant at 1%, **Significant at 5%, *Significant at 10%.