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INTERNATIONAL RENT SHARING AND DOMESTIC LABOUR MARKETS:

A Macroeconomic Analaysis

W. Jos Jansen and Ad C.J. Stokman*

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De Nederlandsche Bank NV
Monetary and Economic Policy
Department/
Research Department
P.O. Box 98
1000 AB AMSTERDAM
The Netherlands

ABSTRACT

International Rent Sharing and Domestic Labour Markets: a Macroeconomic Analysis

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Foreign subsidiaries account for a significant part of output in many industrialised countries. However, compared to international trade, relatively little is known about the role of foreign direct investment (FDI) and multinational firm behaviour in the transmission of disturbances from one country to the next. Inspired by the micro-evidence on profit sharing within multinational corporations and within industries, we investigate whether a cross-border rent-sharing phenomenon can be identified at the macro-level. The rent-sharing hypothesis implies that an increase in foreign profitability should boost wages and/or employment in the domestic economy.
Our empirical study provides evidence that international rent sharing might be an important aspect of global economic linkages. Especially in continental Europe and the UK, labour market conditions (wages and/or employment) are significantly affected by profitability conditions abroad. The US labour market, on the other hand, does not appear to be sensitive to changes in profitability in other countries, which could be explained by the still relatively modest role of FDI capital in the American economy.

Key words: foreign direct investment, international rent sharing, labour markets
JEL codes: E32, F23, F40, J23, J31

SAMENVATTING

International rent sharing en nationale arbeidsmarkten: een macroeconomische analyse

W. Jos Jansen en Ad C.J. Stokman

Buitenlandse dochterondernemingen nemen in veel geïndustrialiseerde landen een aanzienlijk deel van de productie voor hun rekening. Echter, vergeleken met internationale handel is betrekkelijk weinig bekend over de betekenis van buitenlandse directe investeringen en het gedrag van multinationale ondernemingen voor de transmissie van economische schokken van het ene land naar het andere.
Geïnspireerd door de micro-economische empirische steun voor winstdeling binnen multinationale ondernemingen en binnen sectoren, onderzoeken wij in dit paper of ook op macroeconomisch niveau aanwijzingen gevonden kunnen worden voor wat in de economische literatuur bekend staat als international rent sharing. In een aantal grote en kleine Europese landen blijkt hogere (lagere) buitenlandse winstgevendheid inderdaad te leiden tot hogere (lagere) binnenlandse lonen en meer (minder) werkgelegenheid. Voor de VS konden we geen significante invloed vaststellen, hetgeen vermoedelijk samenhangt met de nog relatief bescheiden rol van buitenlandse directe investeringen daar.

Trefwoorden: directe investeringen, international rent sharing, arbeidsmarkten

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1 INTRODUCTION

Over the past decades, the national economies have become more integrated through ever intensifying foreign trade relations and international financial relations. For example, cross-borders holdings of stocks and bonds have grown spectacularly in the past twenty years due to sharply lower transaction costs and the worldwide trend towards capital account liberalisation and financial sector deregulation. An important aspect of international economic integration is the larger role of foreign direct investment (FDI) in the economy. FDI has grown at rates far greater than those of international trade or output have since the late 1980s, especially among the industrialised countries. Estimates by the UNCTAD (2002) put the total stock of FDI capital at 17.5% of global GDP in 2000, more than double the size in 1990 (8.3%). A direct consequence of the greater presence of foreign-owned firms is the internationalisation of production. Currently, about 11% of global production is accounted for by companies that are under control of foreign investors.

The rise in international economic interdependence means that economic conditions in one country have become increasingly sensitive to disturbances occurring in other economies. The 'traditional' channel through which economies may affect each other is formed by international trade flows. Furthermore, it is widely recognised that the increase in international capital mobility has boosted the importance of financial markets as a conduit for the cross-border transmission of disturbances. Correlations among the major stock markets have greatly increased in the past twenty years (Berben and Jansen 2002). As a consequence, international trade flows and financial asset prices serve as the main linkages among economies in the macroeconometric models that are currently used for making forecasts and conducting policy analyses by national and international policy makers.

By contrast, comparatively little is known about the role of FDI and multinational firm behaviour in the transmission of disturbances from one country to the next at the aggregate level. The empirical literature on the impact of FDI mainly deals with supply-side effects on host economies in the longer run – focusing on the transfer of technology, management techniques and business models – rather than business cycle issues. Jansen and Stokman (2003) recently found that countries maintaining comparatively intense FDI relations also have business cycles that are more correlated, even when we control for the intensity of bilateral trade relations. Next to foreign trade flows and financial flows, FDI thus appears to be a separate, third channel through which economies may affect each other in an economically significant fashion. This finding naturally raises the question how the FDI channel operates. What are the underlying mechanisms at work?

This paper aims to contribute to the literature on economic integration by empirically investigating a mechanism that may explain in what way FDI and the associated internationalization of production

may affect cross-country business cycle correlations. The starting point of our analysis is the practice of profit sharing within multinational corporations (also known as international rent sharing), which has been documented by Budd and Slaughter (2000) and Budd, Konings and Slaughter (2002). These authors find that wages at a multinational company's subsidiaries are not only determined by local factors, but also by profits at the company level. In our empirical analysis, we analyse the macroeconomic version of international rent sharing. We examine for six countries whether domestic labour market conditions (wages and employment) are determined in part by profitability conditions abroad. The rent-sharing hypothesis implies that an increase in foreign profitability should boost wages and employment in the domestic economy.

The remainder of the paper is structured as follows. Section 2 discusses the main trends in FDI positions, the significance of foreign affiliates for host-economy output and employment, and the channels through which FDI may transmit disturbances across borders. Section 3 focuses on micro-level evidence of rent sharing. Section 4 reports the results of our labour market analysis. Section 5 summarises our main findings.

2 FOREIGN DIRECT INVESTMENT: SOME FACTS

Foreign direct investments are financial transactions aimed at acquiring a lasting interest in a company in another country. A lasting interest means that the direct investor has a long-term relationship with and significant influence on the management and policies of the foreign company. Direct investment commonly takes place when a company in one country obtains all or much of the share capital of a company in another country, often via merger and acquisition. In statistics, ownership of at least ten percent of the ordinary shares or voting stock is the criterion for the existence of a direct investment relationship. Ownership of less than ten percent is recorded as a portfolio investment. FDI comprises not only mergers and take-overs / acquisitions and new investments, but also reinvested earnings and loans and similar capital transfers between parents and affiliates.

Industrial countries typically act both as host to FDI projects in their own country and as participant in investment projects in other countries. A country's inward FDI position is made up of the hosted FDI projects, while the outward FDI position consists of the FDI projects owned abroad. Both larger inward and outward FDI positions may make the domestic economy more sensitive to economic disturbances abroad in the short run.

Main trends in FDI

Foreign direct investment has increased very rapidly in the OECD area since the mid-1980s, with a marked acceleration since 1995 (Annex I, Figure 1A). The background to this development is the on-going liberalisation of international capital flows, the further dismantling of trade barriers and progress in information and communication technology. The favourable economic climate in the second half of the 1990s also promoted the growth of direct investment. The outward FDI position of the two largest EMU-countries Germany and France is currently around 25% of GDP, four to five times the level of 1985. For traditional investor countries like the UK and the Netherlands, positions are much larger, 55% and 80% respectively. The outward investment position of the US increased from 5% of GDP in 1985 to 13% in 2000. As outward and inward FDI positions tend to move in tandem over time, gross positions have grown much faster than net positions. The increase in FDI ties among the industrialised countries can thus be characterised as a process of diversification. The Japanese experience does not fit in with the general picture. Japanese corporations even reduced their presence abroad in the second half of the 1990s, while Japan's stock of inward FDI is very small (1% of GDP in 2000). Finally, foreign direct investment grew much faster than foreign trade in almost every country (Annex I, Figure 1B). This implies that the links between economies via foreign direct investment have gained in significance over time compared with the traditional channel of international trade.

FDI and its significance for the host economies

The presence of foreign investors means that part of domestic output is produced by firms controlled by foreigners. Comprehensive data on the share of output accounted for by foreign affiliates are scarce. In Table 1 we have collected some data, taken from several sources that may give an impression of the weight of foreign-owned companies in the manufacturing sector and the total economy in 13 host countries in 1989 and 1998-1999. The table first shows the output produced by majority-owned foreign affiliates (MOFA) of US companies as a percentage of host country GDP in 12 countries [1]. US MOFAs alone were responsible for 17% of Irish GDP, 10% of Canadian GDP and 7% of UK GDP in 1999. In Australia, Belgium and the Netherlands, their output share was around 5%. If we combine this information with the share of the US in the host country's inward FDI position, if available, we arrive at a back-of-the-envelope estimate of the output share of all foreign affiliates taken together [2]. These, admittedly rough, estimates indicate that between 10 and 20% of GDP could be accounted for by foreign-owned firms, pointing to a substantial role for foreign affiliates in the domestic economy. Because the US economy is so large, foreign affiliates still account for a relatively small part of US GDP: 5.6% in 1999 and 6.0% in 2000 (Zeile 2002). Still, this represents a substantial increase from the level ten years ago (4.1%).

Table 1 also reports, depending on availability, the share in employment in the manufacturing sector accounted for by foreign affiliates in 1998. As foreign-owned firms are generally characterised by high labour productivity, their share in employment is somewhat smaller than that in output. These numbers also point to a potentially important influence of multinational firm behaviour on host economies.

Effects of FDI

Favourable supply-side effects from FDI can theoretically be explained by more recent developments in growth theory, which highlights the importance of improvements in technology, efficiency and productivity in stimulating growth (Ewe-Ghee Lim 2001). Empirically, there is solid evidence that the presence of foreign companies has a beneficial effect on the economy of the capital-importing country (Blomström, Globerman and Kokko 2000; Barrell and Pain, 1997). The available evidence suggests that productivity in domestically owned companies improves as more foreign-owned companies operate in an economy as a result of foreign direct investment. This type of spillover reflects the transfer of new technologies, new marketing techniques and the benefits of increased competition. The

1 US FDI in MOFAs is approximately 85% of total outward FDI.

2 We computed the estimated output share of all foreign affiliates by dividing the US MOFA output share by the US share in inward FDI (as reported by the host country).

Table 1 The role of foreign affiliates in host economies
Percentages

	Share in host country GDP of US affiliates		Estimated share in host country GDP of all foreign affiliates		Share in host country man. employment of all foreign affiliates	p.m. US share in host country inward FDI stock	
	1989	1999	1989	1999	1998	1989	1999
Australia	4.9	4.7	18.7	10.8	-	26.3	43.6
Belgium	5.6	5.1	-	-	-	-	-
Canada	9.5	10.0	14.5	14.4	-	65.6	69.5
France	2.3	2.6	12.0	15.0	27.8	19.1	17.3
Germany	3.0	2.9	9.3	12.0	7.2	32.4	24.2
Ireland	12.4	16.8	-	-	36.8	-	-
Italy	1.9	2.0	12.7	15.0	14.0	15.0	13.3
Japan	0.5	0.7	1.0	1.7	1.8	50.5	40.5
The Netherlands	5.8	4.5	21.4	17.7	21.9	27.1	25.4
Sweden	1.2	2.6	12.2	19.6	26.8	9.9	13.2
Switzerland	2.9	3.3	12.3	10.3	-	23.6	32.0
UK	6.2	7.0	14.7	14.9	27.3	42.1	47.0
US	-	-	4.1	5.6	13.4	-	-

Sources: columns 1 and 2: Borga and Yorgason (2002); US data: Zeile (2002); columns 3 and 4: own calculations; column 5: UNCTAD (2002) and OECD (2002); columns 6 and 7: UNCTAD (2002).

magnitude of these supply-side effects is largely dependent on the ability of the host economy to absorb foreign technology. If there is a large difference in technological level between direct investor and host country, domestic companies will have difficulty in adopting the new technology and so the positive spillover on the economy will be limited. This explains why FDI is highly concentrated in developed countries.

Apart from affecting the supply side in the longer run, FDI (inward as well as outward) may make the domestic economy more sensitive to economic disturbances abroad in the short run. Studying business cycle correlations of Canada, France, Germany, the Netherlands, the UK and the US – among themselves and with six other industrialised countries – in the years 1982–2001, Jansen and Stokman (2003) report that higher bilateral business cycle correlations are associated with closer bilateral FDI relationships.

The macroeconomic vulnerability related to outward FDI has to do with the consequences that disturbances abroad might have for the financial position of the investing domestic firms. Unfavourable developments abroad may reduce the value of their overseas investment projects, and thus the value of the domestic firms. This reduction of net worth may lead to lower stock prices and greater difficulties for domestic firms in securing external finance for planned domestic investment projects, both in the capital market and with banks. Domestic investment may thus be hurt via the

balance sheet channel and the stock market channel (Tobin's q). The fall in stock prices may adversely affect domestic consumption via wealth effects, balance sheet effects and confidence effects. These types of effects are outside the scope of this paper, however, as financial asset prices play a crucial part in the transmission of shocks.

As the inward position represents imported capital, the host country always runs the risk that foreign investors, for whatever reason, may want to withdraw their money. More generally, a deterioration of the economic conditions in the foreign investor's home country may weaken the financial health of the parent company, which in turn may lead the multinational to decide to lower employment, wages and investment at affiliates in host countries. As explained in the next section, international rent sharing within multinational companies may be at the root of this type of vulnerability. Within a multinational corporation, firm-specific assets are a joint input, giving economics of scale at the company level rather than at the level of the individual plant. Global profits and losses may be shared (with a lag) with affiliates and their workers. Due to the trend towards a greater presence of foreign firms, domestic wages and employment may thus increasingly reflect international factors in addition to local economic conditions (Blanchflower, Oswald and Sanfey, 1996; Budd, Konings and Slaughter 2002).

3 INTERNATIONAL RENT SHARING AND THE LABOUR MARKET

This section outlines how international profit sharing within multinational firms may affect domestic labour market conditions. Rent sharing is a mechanism through which the increased relevance of FDI may contribute to the synchronisation of business cycles among countries. Given the low degree of international labour mobility, labour markets are typically thought off as being determined by national regulations and governmental policies, negotiations between national employer organisations and trade unions and domestic economic conditions and so on. Blanchflower, Oswald and Sanfey (1996) argue that, with increasing globalisation, this closed economy perspective may miss important aspects of wage setting.

Multinational companies are by their very nature internationally oriented. As foreign-owned firms' shares in employment and output are substantial in quite a number of countries (Table 1), their behaviour may be an important determinant of wage and employment outcomes in host countries. Multinational firms have a strong incentive to create an internal market across national borders. They may impose company strategies and labour practices on local production units. The option to reallocate activities to other countries or to withdraw from markets altogether gives multinational firms a strong bargaining position (Edwards, Rees and Coller 1999) [3]. Unlike (direct investment) capital, labour throughout the world has been, so far, unable to organise itself across nation-states (Letto-Gillies 2000). Edwards, Rees and Coller (1999) examine the consequences of corporate restructuring, based on information provided by trade unions in European countries. They find that unions are at best involved in negotiating the consequences of mergers and acquisitions, but are rarely involved in the initial decision.

Rent sharing

Within an industry, profits are often shared with local firms and local workers belonging to that particular industry (Christofides and Oswald 1992; Oswald 1996). In the literature, this phenomenon is known as *economic rent sharing*. Figure 2A in Annex II visualizes the main idea of rent sharing that apart from local factors, such as the profitability of the individual company, industry-wide profits exert a separate, independent influence on wages paid by the firms in the industry.

Within a multinational corporation, firm-specific assets – such as innovations and knowledge, management skills, brands, distribution networks and so on – are a joint input. Typically these firm-

[3] An interesting example is the Volkswagen agreement in 2001, which led to more flexible work conditions and wage moderation. It was quite clear that the management explicitly used the argument that production could be relocated if the outcome would not be satisfactory for the management (Andersen 2003).

specific assets cannot be split and often requires a large investment in research and development. Organising production within a multinational firm protects intangible assets, creating economies of scale and scope at the company level rather than the level of the local business unit. Cross-border profit (or loss) sharing is the natural consequence of the sharing of firm-specific assets with subsidiaries that is essential to a multinational operation. The recent global economic downturn has seen quite a few examples of multinational parent losses that had major consequences for wages, employment, investment projects and (internal and external) financing at the affiliate level in host countries. However, subsidiaries may also affect parents, as a number of recent accounting scandals have shown. Wages and employment at the affiliate level may therefore be determined by local factors as well as profitability at the multinational's top level. Figure 2B in Annex II depicts the practice of rent sharing within a multinational firm.

Budd and Slaughter (2000) and Budd, Konings and Slaughter (2002) are the first empirical studies on cross-border profit sharing within multinational firms. Budd and Slaughter (2000) analyse 1000 Canadian labour contracts in manufacturing from 1980 up to 2000. They find support for profit sharing across the borders of the US and Canada in both directions: US industry profits have a significantly positive effect on wages of US owned affiliates located in Canada, and Canadian industry profits affect positively wages of Canadian owned affiliates located in the US. On wages in Canadian domestic companies, US industry profits had, however, a negative impact. As high profits in the US also point to strength of the American businesses, Canadian domestically owned companies feel competitive pressure and respond by restraining wages. Budd, Konings and Slaughter (2002) also find micro-evidence of cross-border profit sharing by multinationals within Europe. Their study is based on a panel data analysis for almost 900 parent companies concentrated in Western Europe (France, Germany, Italy and Belgium) and about 2000 affiliates operating in Europe from 1993 up to 1998. With an elasticity of foreign affiliate wages to parent profits per worker of 0.03, about 20% of observed variation in affiliate wages could be explained.

We are not aware of firm-level studies on cross-border profit sharing in terms of employment. However, there is ample anecdotal evidence to be found in newspaper reports on employment decisions in foreign affiliates that appear to be motivated by the financial needs of the multinational parent company rather than by purely local economic conditions. For this reason, we will also investigate whether international rent sharing might express itself in a sensitivity of domestic employment to profitability conditions abroad.

4 EMPIRICAL ANALYSIS

Inspired by the empirical evidence for profit sharing within industries as well as within multinational firms, this section investigates whether some sort of profit sharing can be detected at the level of national economies. In the spirit of the rent sharing literature, we look whether profits at a higher level of aggregation than the unit of observation (country) exert an independent influence on national real wages. In addition, we investigate whether employment is directly affected by this mechanism. Given the facilitating role of FDI and multinational firms, our empirical analysis focuses on the six largest recipients of direct investment capital: the United States, the United Kingdom, Germany, France, the Netherlands and Belgium. Together, they host over 70% of all FDI capital in the OECD area. The sample consists of annual observations in the period 1982-2000.

Empirical specification issues

Our empirical work utilises standard equations for the real wage rate and aggregate employment to which we have added a variable that may capture international rent sharing. The standard analytical framework underlying the empirical modelling of the labour market assumes that unions and employers first bargain about the wage rate and that employers then choose employment. Wages are typically explained by domestic factors such as consumer prices, labour productivity and national wage pressure variables such as the unemployment rate. Employment mainly depends on the real wage rate and the level of output. We estimate the following equations for real wages and aggregate employment in the business sector:

$$\Delta w = a_0 + a_1 \Delta apl - a_2 \Delta ur_{-1} + a_3 fp_{-2} - l\,(w - d_1 apl + d_2 ur_{-1})_{-1} \qquad (1)$$

$$\Delta l = g_0 + g_1 \Delta w + g_2 \Delta y + g_3 fp_{-2} - j\,(l - y - f_1 w - f_2 t)_{-1} \qquad (2)$$

w	log of real wage per employee
apl	log of average productivity of labour
ur	unemployment rate
fp	foreign profitability variable
l	log of employment in business sector
y	log of production volume of business sector
t	linear trend

Since the time series involved are non-stationary, eqs. (1) and (2) are of the error correction type, with the long-run relationship appearing in the last term. The parameters *?* and f measure the speed of

adjustment towards the long-run equilibrium. The expected sign of all slope coefficients is positive. Real wages are determined by labour productivity and the bargaining power of labour, which is negatively related to the unemployment rate. The employment equation is derived from a CES-production function, in which employment depends on real wages, output and a (labour saving) autonomous rate of technology progress.

To investigate whether the micro-evidence on international rent sharing might have a counterpart at the aggregate level, we introduce into the regression equations a variable measuring foreign profitability (*fp*). Conceptually, the variable *fp* plays the same part as industry-wide profitability in studies on rent sharing within industries using firm-level data (Christofides and Oswald 1992). The variable *fp* for country *i* is calculated as the weighted average of the capital income shares in the business sector in the countries of origin of the direct investors in country *i* [4]. The weighting scheme to calculate *fp* is inspired by the idea that foreign direct investment and multinational firms are the channel through which domestic labour markets are affected. The FDI channel may also explain why the economic developments in the US are more important for European countries than seems to be justified based on international trade patterns alone. For example, for the Netherlands exports to US amount to 5% of total exports, whereas over 20% of imported FDI capital originates from the US.

As we focus here on the business-cycle effects of FDI through the cross-border transmission of economic shocks, the foreign-profitability measure is added to the dynamic part of the equation only [5]. Empirical work on rent sharing finds that changes in industry profits take time to pass through to firm-level wages, with the lag ranging from one to three years (Christofides and Oswald 1992; Blanchflower, Oswald and Sanfey 1996). Based on preliminary experiments, foreign profitability enters the wage equations with a two-year lag and the employment equations with a one-year lag. Later, we conduct a sensitivity analysis, varying the lag from one to three years.

Throughout the exercise, we use uniform specifications and lag structures across countries, as we are primarily interested in the influence of foreign profitability. Furthermore, with an eye on the limited number of observations in our sample 1982-2000, we have imposed some cross-country equality restrictions on the parameters of conventional determinants. We have freely estimated the coefficients of foreign profitability and the speeds of adjustment towards long-run equilibrium, whose *t*-statistics

4 The weighting scheme aggregates across eight countries of origin, the six countries for which the analysis is done plus Italy and Japan. Data on the geographical composition of inward FDI capital are taken from UNCTAD (2002). It would also have been interesting to do the analysis with *fp* defined as the weighted average of profits at the parent company level of all foreign-owned firms operating in country *i*. Unfortunately, such data are unavailable.

5 This is also consistent with the time series properties of the foreign profitability variable, which is found to be stationary.

are equivalent to a co-integration test (Kremers, Ericsson and Dolado 1992). The imposed parameter restrictions are easily accepted by the data. The marginal significance level of the Wald test regarding the restrictions on the wage equations is 0.79. Its counterpart for the employment equations is 0.85. Finally, for both labour market variables we jointly estimate the six country equations by the Seemingly Unrelated Regression (SUR) method in order to exploit the possibility of contemporaneously correlated disturbances across the equations.

Empirical results

Tables 2 and 3 present our preferred regressions for the real wage rate and employment respectively. Turning to the results on the regular determinants first, the estimated coefficients generally have the expected sign and are significantly different from zero. This holds for both short-term dynamics and long-term equilibrium relations. Gains in labour productivity boost real wages, while run-ups in unemployment depress real wages. In the UK and the US, real wages display a much stronger short-run response to changes in labour productivity than in continental Europe, in particular the small open economies Belgium and the Netherlands. In the long run, real wages move almost one-for-one with labour productivity in four countries [6]. Regarding the sensitivity of wages to unemployment, differences between the European countries and the US are limited. German wages are the most sensitive to unemployment, in the short run as well as in the long run. In Belgium, wages do not react to unemployment in the short run. The error correction coefficient in the real wage equations is significant for all countries, indicating co-integration. In three countries, more than half of the deviation of actual and long-run equilibrium values is corrected within the space of one year.

The estimates for the employment equations show that in the short run employment reacts much stronger to changes in real wages and output in the Anglo-Saxon countries than in continental Europe. The estimates for the UK and the US tend to be two to three times larger than their continental European counterparts. The high short-run output elasticity of France is the exception on this pattern. For Belgium and France, we also find that employment very slowly adjusts to deviations from long-run equilibrium, although the estimated coefficients are significantly different from zero. In the case of France, it takes about four years to cut the initial disequilibrium in half. The corresponding number for the fastest adjusting labour market (UK) is less than one year. Remarkably, Germany has the

6 The long-run effect of productivity is rather muted in the Netherlands in particular. This might be due to the long-sustained policy of wage moderation, which was the result of the 1982 Wassenaar agreement (Den Butter and Mosch 2003).

Table 2 Parameter estimates of country wage equations with fp *lagged 2 years* 1982-2000

Country a)	Belgium	Netherlands	Germany	France	UK	US
Δapl	0.12	0.12	0.49	0.40	0.89	0.63
	(1.5)	(-)	(2.6)	(3.7)	(8.0)	(3.8)
Δur_{-1}	0	-0.007	-0.016	-0.007	-0.007	-0.007
	-	(7.7)	(3.3)	(-)	(-)	(-)
fp_{-2}	0.005	0.001	0.013	0.003	0.004	-0.003
	(1.6)	(0.8)	(4.4)	(2.6)	(2.0)	(1.4)
LT(l)	0.41	0.42	0.60	0.57	0.54	0.24
	(2.6)	(3.3)	(10.5)	(5.0)	(2.9)	(2.4)
apl_{-1}	0.88	0.40	0.88	0.61	0.88	0.88
	(21.6)	(7.9)	(-)	(12.8)	(-)	(-)
ur_{-2}	-0.012	-0.012	-0.030	-0.018	-0.012	-0.012
	(10.6)	(-)	(6.9)	(5.5)	(-)	(-)
dumGE b)	-	-	0.12	-	-	-
			(12.7)			
$\bar{R}^2$	0.38	0.60	0.90	0.61	0.63	0.32
SE	0.014	0.006	0.012	0.006	0.009	0.012
LM_1 c)	0.66	0.74	0.76	0.11	0.26	0.23
LM_2 c)	0.90	0.05	0.32	0.26	0.19	0.44

T-values between brackets
a) Wald-test on all combined parameter restrictions: associated p-value=0.79
b) DumGE is a German re-unification dummy: 0 in the period 1981-1990 and 1 from 1991 onwards
c) Associated p-values

same adjustment speed as the US. However, one should keep in mind that, given the shock in wages or output, deviations from long-run equilibrium will be much less sizeable to begin with in the US. Overall, our findings are consistent with the widely held view that labour markets in continental Europe are characterised by poor flexibility compared to the UK and the US.

We next discuss the main results on the influence of foreign profitability on national labour markets conditions. For wages, we find a statistically significant effect at the 5% level for Germany, France and the UK, while for Belgium there is some tentative supportive evidence for an influence of foreign profitability. Regarding employment, we find strong evidence for a role of foreign profitability in Belgium and the Netherlands. Consequently, the US is the only country for which we fail to detect any effects of foreign profitability. This may be related to the fact that, due to the large size of the American economy compared to the other countries, foreign-owned firms still account for a relatively

Table 3 Parameter estimates of country employment equations with fp *lagged 1 year* 1982-2000

Country a)	Belgium	Netherlands	Germany	France	UK	US
Dw	-0.14	0.05	-0.13	-0.17	-0.52	-0.33
	(3.2)	(0.5)	(4.1)	(1.2)	(4.3)	(5.7)
Dy	0.28	0.14	0.24	0.72	0.42	0.63
	(6.8)	(1.5)	(5.2)	(7.0)	(3.5)	(19.6)
fp_{-1}	0.004	0.006	-0.001	-0.001	0.000	-0.000
	(6.2)	(4.1)	(0.7)	(0.8)	(0.1)	(0.2)
LT(j)	0.11	0.34	0.46	0.15	0.58	0.45
	(7.2)	(6.3)	(5.9)	(3.5)	(4.5)	(5.1)
w_{-1}	-0.72	-0.72	-0.72	-0.72	-0.72	-0.72
	(9.8)	(-)	(-)	(-)	(-)	(-)
t	-0.002	-0.002	-0.002	-0.002	-0.002	-0.006
	(2.0)	(-)	(-)	(-)	(-)	(6.0)
dumGE b)	-	-	0.012	-	-	-
			(2.6)			
$\overline{R}^2$	0.89	0.88	0.89	0.68	0.83	0.88
SE	0.003	0.006	0.004	0.008	0.009	0.004
LM_1 c)	0.23	0.25	0.67	0.51	0.10	0.58
LM_2 c)	0.33	0.48	0.13	0.27	0.03	0.71

T-values between brackets.
a) Wald-test on combined parameter restrictions: associated p-value=0.85.
b) DumGE is a German re-unification dummy: 0 in the period 1981-1990 and 1 from 1991 onwards.
c) Associated p-value.

minor part of US GDP (see Table 1). The phenomenon of international rent sharing may therefore not be widespread enough to register at the aggregate level in the US. Table 4 presents the estimated coefficients on foreign profitability with the lag varying from one to three years. We focus on the difference between the smaller and the larger European countries. Belgium and the Netherlands have equal coefficients, and so do France, Germany and the UK [7]. The results from this sensitivity analysis do not alter our insights fundamentally. Painting with a broad brush, a increase in capital income share abroad by one percentage point stimulates employment by around 0.5% after one to two years in Belgium and the Netherlands, and raises real wages by around 0.5% after two to three years in the

[7] In order to test whether we may speak from a genuine foreign influence, we have also run regressions with domestic profitability entering as an additional explanatory variable in the equations. Overall, we find similar results for the impact of foreign profitability. In a few cases, the significance of the foreign profitability measure drops substantially, which is an indication of multicollineality between foreign and domestic profitability. A table summarizing these results can be found in the appendix III.

Table 4 Estimates a_3, γ_3 for small *vs* larger EU-countries with *fp* lagged 1, 2 and 3 years 1982-2000

	Ge= Fr= UK		Be=Nl		US	
Employment with fp						
- lagged 1year	-0.001	(0.9)	0.005	(6.9)	-0.000	(0.5)
- lagged 2 years	-0.001	(1.6)	0.004	(4.6)	-0.000	(0.8)
- lagged 3 years	0.001	(1.2)	0.002	(2.7)	0.002	(3.2) a)
Wages with fp						
- lagged 1 year	0.003	(2.0)	0.001	(0.9)	-0.002	(0.6)
- lagged 2 years	0.005	(3.9)	0.002	(1.6)	0.002	(0.8)
- lagged 3 years	0.005	(5.5)	0.001	(0.9)	0.003	(1.3)

T-values between brackets.
a) No longer significant at 95%-level after inclusion of *dp* US. See also Annex III, Table 3A.

larger European countries. In all countries, total compensation is temporarily 0.5 percentage points higher, providing a spending impulse to the domestic economy. Between 1997 and 2000 foreign profitability declined by about 1.5 percentage points for all six countries. The unusually synchronised nature of the downturn in 2001 may be partly due to the rent-sharing phenomenon. Of course, these numbers are partial, first-order effects. For example, the rise in real wages will also affect employment, competitiveness and so on. Therefore, the overall implications of international rent sharing need to be investigated further in the context of a macroeconomic multi-country model (see Conclusions).

Regarding the timing of the impact of foreign profitability, Table 4 suggests that wages display a more delayed response than employment. This can be explained by the way contractual wages are set. As wage agreements between firms and trade unions often fix pay for the next one to three years, contractual wages tend to react to changes in determinants with a substantial lag. By contrast, firms enjoy more flexibility to alter capital spending plans or to expand or contract their labour force as a consequence of higher profits abroad.

Finally, Tables 2–4 suggest that in small countries (Belgium and the Netherlands) it is employment that benefits from an improvement in profitability abroad, while in large countries (France, Germany and the UK) it is wages. One could say that the 'foreign dividend' is mostly paid out in the form of more jobs in Belgium and the Netherlands and in the form of higher wages in France, Germany and the UK. This might reflect differences in preferences of trade unions with respect to the trade-off between wages and employment. Trade unions in small open economies might be more aware of the negative effects of high wages on competitiveness of domestic firms in home and foreign markets. They may therefore be more avid to protect jobs or expanding employment than to extract high wages from firms. By contrast, unions in large countries may feel less constrained by such considerations and focus more on securing high wages.

5 CONCLUSIONS

Foreign affiliates account for a significant part of output in many industrialised countries. However, compared to international trade, relatively little is known about the role of FDI and multinational firm behaviour in the transmission of disturbances from one country to the next at the aggregate level. In related research, we found that countries that maintain comparatively intense FDI relations also have business cycles that are more correlated, even when foreign trade relations were taken into account. In this paper, we therefore attempt to shed some light on the underlying mechanisms at work in the FDI transmission channel. Inspired by the micro-evidence on profit sharing within multinational corporations and within industries, we investigate whether a cross-border rent-sharing phenomenon can be identified at the aggregate level. More specifically, we examine for Belgium, France, Germany, the Netherlands, the UK and the US whether domestic labour market conditions (wages and employment) are partly determined by profitability conditions abroad. The rent-sharing hypothesis implies that an increase in foreign profitability should boost wages and/or employment in the domestic economy.

We find that employment in Belgium and the Netherlands positively responds to improvements foreign profitability with a lag of one year, but that wages do not react. We obtain the reverse pattern for France, Germany and the UK. In these countries, wages are affected by foreign profitability with a lag of two years, but employment is not. Our findings point to the existence of a form of international rent sharing at the aggregate level. Union preferences may determine whether the rent sharing involves wages or employment. US labour market conditions do not appear to be sensitive to changes in profitability in other countries, which could be explained by the still relatively modest role of foreign-owned investment capital in the American economy.

Up until now, international trade and financial asset prices serve as the main linkages among individual economies in the econometric models that are employed by national policy makers and international organisations, such as the IMF and the OECD. The absence of FDI as a transmission channel may lead policy makers to underestimate the degree of interdependence in the world economy. Our results suggest that adding a variable measuring foreign profitability to the specification of wage or employment equations could be a useful first step towards the incorporation of the FDI transmission channel into (large-scale) econometric models. In a future research project, we plan to examine the relative importance of this particular channel of transmission in a multi-country model. Another topic on our research agenda is possible spillovers on investment behaviour. Finally, it would be interesting to repeat the empirical analysis for data on the industry level, as the degree of international rent sharing may considerably differ across industries.

ANNEX I

Figure 1A FDI-position for selected countries
% GDP

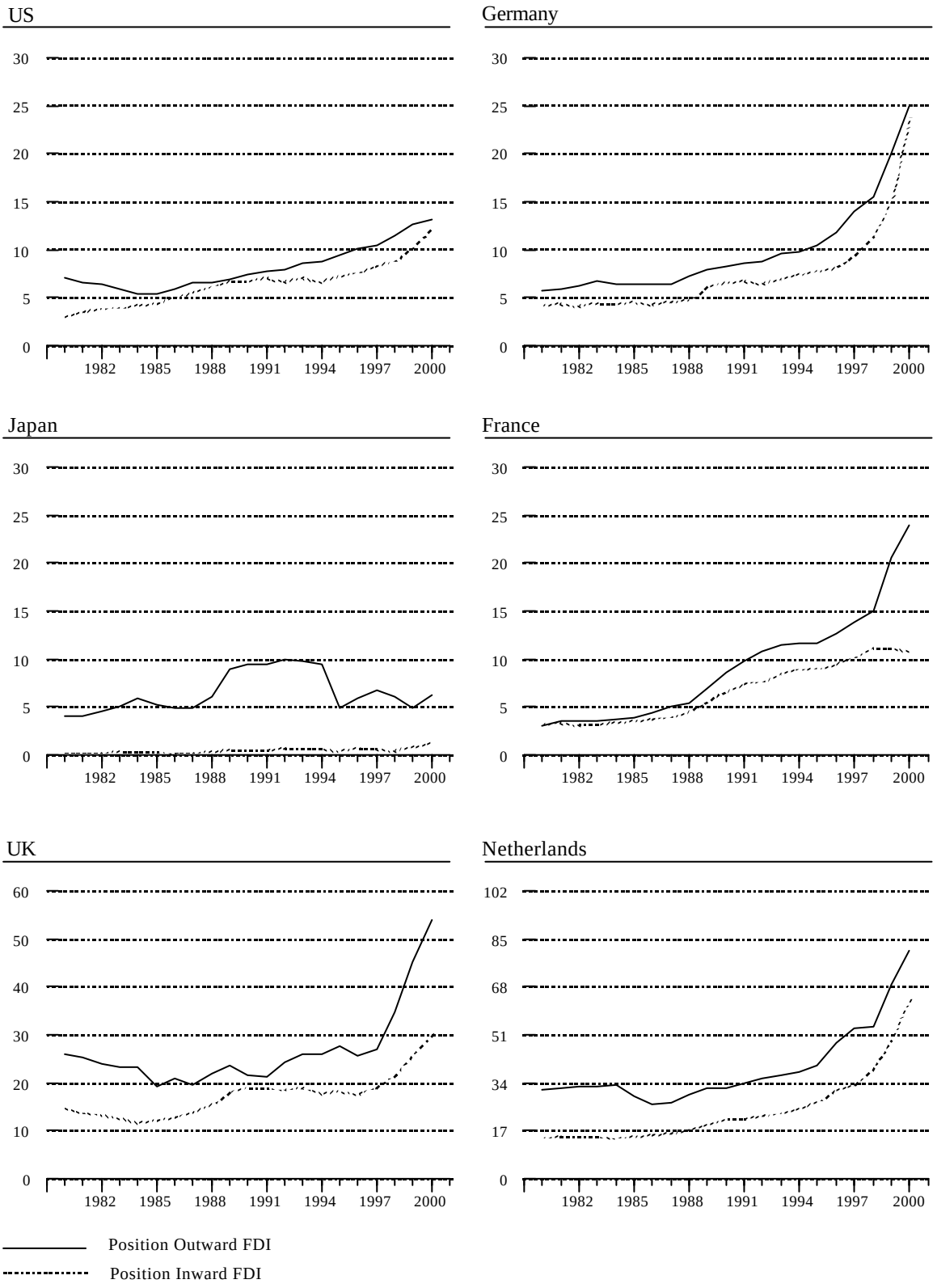
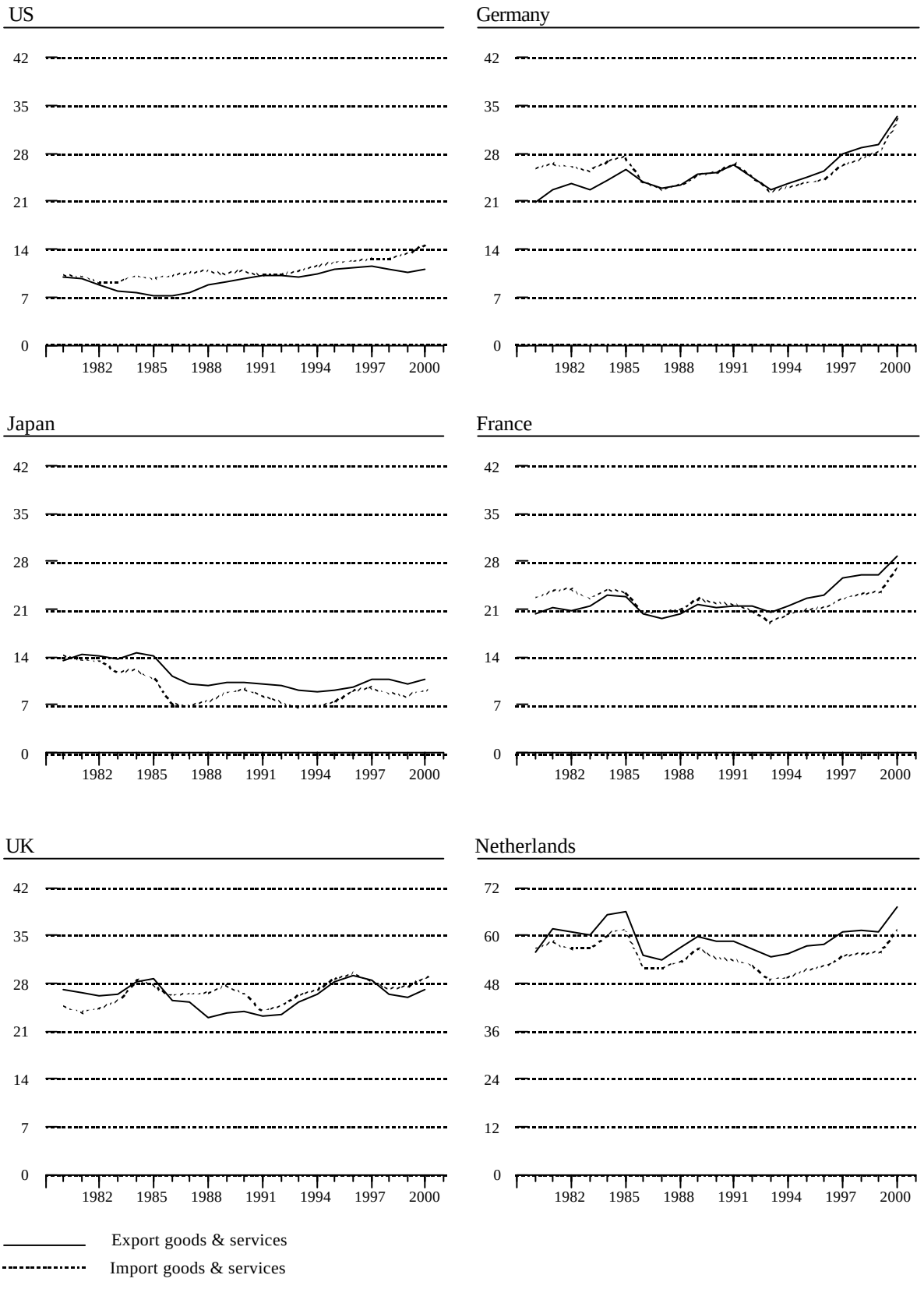


Figure 1B Foreign trade selected economies
% GDP



ANNEX II

Figure 2A Example of rent sharing

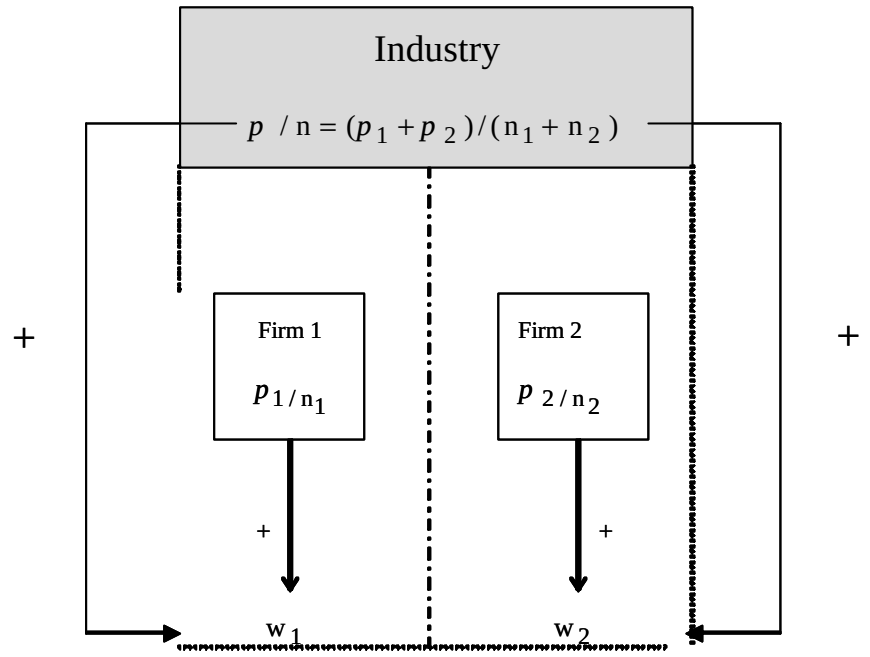
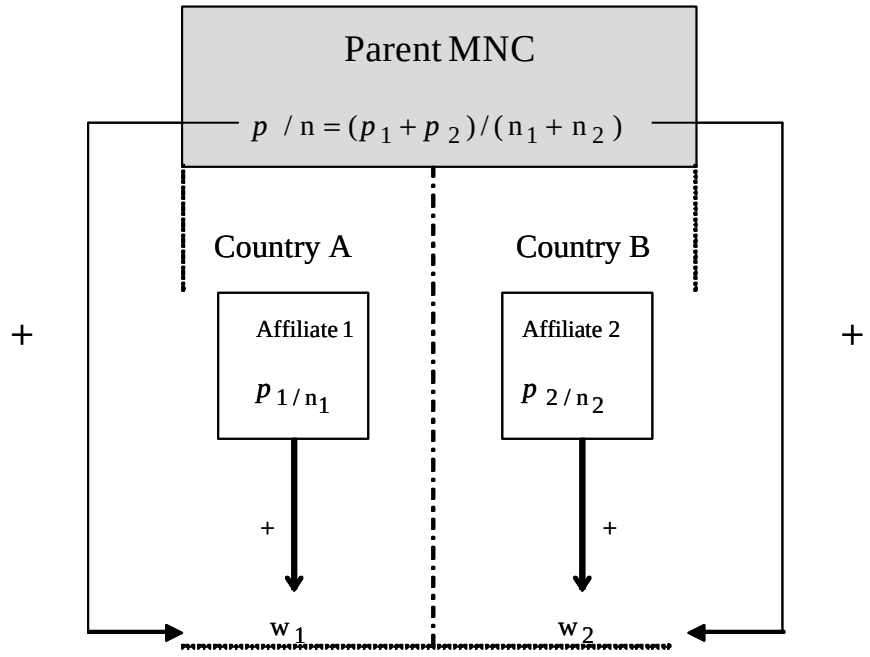


Figure 2B Example of international rent sharing



p_i : total profits firm resp. affiliate i
n_i : number of employees firm resp. affiliate i
w_i : wage per employee firm resp. affiliate i

ANNEX III

Table 3A Parameter estimates for fp with and without domestic profitability dp in Eq 1 and 2

Country / Parameter	Belgium	Netherlands	Germany	France	UK	US
Wages						
fp_{-1}	0.006 (1.7)	0.001 (0.4)	0.011 (3.1)	0.001 (0.4)	0.001 (0.3)	-0.005 (2.4)
fp_{-1} (incl dp_{-1})	0.007 (2.0)	0.000 (0.1)	0.007 (1.8)	0.000 (0.1)	0.001 (0.2)	-0.005 (2.6)
fp_{-2}	0.005 (1.6)	0.001 (0.8)	0.013 (4.4)	0.003 (2.6)	0.004 (2.0)	-0.003 (1.4)
fp_{-2} (incl dp_{-2})	-0.004 (1.0)	-0.001 (0.7)	0.021 (5.6)	0.004 (3.2)	0.005 (1.5)	-0.001 (0.6)
fp_{-3}	0.002 (0.1)	0.001 (0.6)	0.007 (2.9)	0.004 (3.8)	0.005 (3.1)	0.002 (1.1)
fp_{-3} (incl dp_{-3})	-0.001 (2.6)	-0.004 (2.9)	0.025 (7.9)	0.004 (4.1)	0.009 (2.3)	0.002 (0.7)
Employment						
fp_{-1}	0.004 (6.2)	0.006 (4.1)	-0.001 (0.7)	-0.001 (0.8)	0.000 (0.1)	-0.000 (0.2)
fp_{-1} (incl dp_{-1})	0.006 (4.8)	0.009 (4.6)	-0.002 (1.0)	-0.002 (1.0)	0.001 (0.3)	-0.000 (0.1)
fp_{-2}	0.003 (2.7)	0.007 (5.5)	-0.001 (1.6)	-0.003 (1.6)	0.000 (0.1)	0.000 (0.1)
fp_{-2} (incl dp_{-2})	0.005 (3.4)	0.006 (3.8)	-0.002 (1.4)	-0.003 (1.5)	-0.002 (0.5)	0.001 (0.3)
fp_{-3}	0.001 (1.3)	0.005 (4.2)	0.000 (0.5)	-0.002 (1.4)	0.006 (3.0)	0.002 (3.4)
fp_{-3} (incl dp_{-3})	0.003 (2.4)	0.003 (1.5)	0.000 (0.3)	-0.002 (1.4)	0.007 (2.1)	0.001 (1.5)

Shaded areas (dark+light): Cases for which we have found significant international rent sharing effects
Light shaded areas: Cases of international rent sharing that are no longer significant after inclusion of domestic profitability (95% -confidence level)

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