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Keywords: Exports of services, unemployment, labour reforms.

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Employment Resilience through Services Exports? Evidence from Matched Employer-Employee Data*

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Can increased exports of services make a significant contribution to employment resilience during recessions? We study the case of Portugal between 2007 and 2013, a period that includes both a major downturn and a number of structural reforms. Our methodology is based on matched employer-employee panel data and a simple difference-in-differences approach, contrasting service sectors, including those with greater export potential, with other sectors. We find that the employment levels of service sectors exhibit relative increases of approximately 10% in 2012-13. We also find that foreign direct investment explains an important part of this positive employment effect. Overall, our results support the view that services exports can accelerate macroeconomic adjustment, particularly when countries are able to attract foreign capital.

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1 Introduction

Can increased exports of services make a significant contribution to employment resilience and growth following recessions? This is an important and topical question in policy and research for a number of reasons. First, many countries in Europe and elsewhere are currently facing important employment challenges, following the 2008-9 financial crisis, the ongoing eurozone debt crisis or the recent slowdown experienced in some emerging economies. Such a challenging macroeconomic context - with relevant labour market effects - generates greater interest in novel ways of promoting employment growth.

Second, exports may be the main option available to stimulate aggregate demand during periods of downturn, particularly in countries with little or no fiscal space (e.g. public debts of 100% or more of GDP). Exports growth is also likely to be important if countries have few degrees of freedom in terms of their exchange rate or trade policies (e.g. the Eurozone) or face challenges in terms of monetary policy effectiveness. In fact, the competitive devaluation and structural reform policies applied in several countries undergoing adjustment programmes have been motivated by the potential of lower unit labour costs and in making labour relatively more attractive for firms. This will have greater potential for businesses selling to foreign markets or supplying domestic firms that export.

Third, services are increasingly more tradable, following technological and institutional (international trade) developments. For instance, world services exports have more than doubled over the last ten years, reaching 4.7 trillion dollars in 2013 (UNCTAD). This context of growth is likely to translate into a large number of further opportunities in services exports for countries that specifically target this sector. For instance, areas of potential may include tourism and information technologies, the latter also in the context of greater involvement by domestic firms in global value chains.

Fourth, service sectors are typically of high labour intensity, implying an important potential in net job creation. Moreover, their corresponding low capital intensity is also relevant for countries whose financial sectors are constrained in their ability to lend to new or expanding businesses. In other words, in contrast to more traditional manufacturing exports, which typically require large investments, long periods of preparation and relatively small numbers of workers, services exports can potentially be generated at relatively low cost and investment requirements but involving a relatively larger number of workers, thus making a

greater contribution to employment levels.

In conclusion, from a general perspective, developments in technology and institutions make services exports a potentially more important area to accelerate the employment recovery of countries undergoing negative macroeconomic shocks, reducing the length and social cost of the adjustment periods. Even if standard macroeconomic policies are not effective, the interaction of structural policies and the specific characteristics of services exports may facilitate a faster adjustment towards macroeconomic equilibrium and higher employment levels.

While the theoretical argument is straightforward, we know of no empirical evidence or case study so far on this potentially very relevant role of service exports. This paper seeks to address this gap, by presenting quantitative evidence on the case of Portugal, a country that faced a sharp crisis in the period 2011-2013, with large employment losses. Portugal is also a country which implemented a number of structural reforms, in both product and labour markets, during the period covered. These reforms had potentially important effects in reducing unit labour costs and increasing (net) job creation or at least reducing employment losses, in particular via the services export channel, as discussed above.

In a nutshell, the labour market reforms implemented in Portugal over the period 2011-12 sought to promote greater convergence across a number of policy dimensions towards OECD averages, reducing unit labour costs and segmentation. One important area included the removal of employment protection restrictions, which placed the country as the most rigid in this respect across the OECD in particular in the area of individual dismissals. The public employment service was modernised and new active labour market policies were introduced (hiring subsidies, internships, training and monitoring). The duration of unemployment benefits was reduced slightly (again from typically high levels, of up to the three years) while coverage was widened (the eligibility period was reduced from 15 to 12 months). The maximum duration of fixed term contracts were prolonged. The minimum wage was frozen (after having increased by 20% in real terms over the previous four years), severance pay was reduced significantly from the previous very high levels (in particular in the case of new hires, in some cases by two thirds or more), overtime pay premiums were cut (again from high levels, in some cases of 100% or more). The extension of collective agreements was made conditional on employer association representativeness criteria, leading to the end of a system

of virtually automatic extensions, even when employers and unions represented 10% or less of the entire sector. Following these and other reforms and in the context of the recovery from the recession, employment levels have been increasing steadily since 2013.¹

These reforms may indeed have had an important effect in stimulating services sectors, in particular those traded internationally and attractive enough from a foreign investment perspective. Indeed, these reforms would have greater effects upon labour intensive sectors. For instance, as a very concrete illustration, according to a news article in Computerweekly.com, in 2012, 'Betfair.com [a large online betting multinational] opened a development centre in Portugal this year. The work was initially carried out by a small third-party firm focused on sporting systems, recently acquired by Betfair. What started with 24 people has already expanded to 48 staff [2014: 220 staff]'. According to this article, the firm's CIO stated that '[The offshore operation] allows me to use very localised talent for very specific things and to lower my cost base considerably while bringing a lot of ideas into the company'.

Following the discussion above, this paper investigates the extent to which the more recent growth of employment and or its resilience during the period of the crisis in Portugal has been facilitated by services exports. The analysis is based on annual matched employer-employee panel data, covering all firms and employees in the country and providing detailed information on employment. We consider the period 2007-2013, immediately before the onset of the financial and Eurozone debt crises and the ensuing adjustment programme, up to the most recent year with data available at the beginning of the recovery period. Our approach is based on the contrast of services sector (or services sector that we regard as of greater export potential) against other sector, including manufacturing. In particular, we compare the employment levels of those sectors, over the seven year period consider, focusing on the 'after' period of 2012 and 2013, following the implementation of the structural reforms. We also analyse our data considering only foreign-owned firms, those that may be less encumbered by domestic financial sector restrictions in availability of loans for investment and may have stronger international links and therefore greater export potential. Finally, on top of employment levels, we also exploit the richness of the data used to consider differences in other related outcomes, namely sales, equity, wage bills and female employment.

This paper is also a contribution to the emerging firm-level literature on international

¹Some of these reforms are described in greater detail and evaluated in IMF (2011), Martins & Pessoa e Costa (2014), Hijzen & Martins (2016), Martins (2016a), Martins (2016b) and Martins (2016c). The author was Secretary of State for Employment during this period (2011-2013) and was co-responsible for these reforms.

trade in services (Hijzen et al. 2011, Breinlich & Criscuolo 2011, Federico & Tosti 2016). This literature has highlighted the important role of firm-level heterogeneity in services trade, in a manner similar to trade in goods. It has also found evidence that importing intermediate services is not associated with job losses or greater worker turnover; if anything, service imports appear to be associated with faster employment growth.² The latter finding may be inconsistent with beggar-thy-neighbour interpretations of structural reforms in economies under adjustment, to the extent that service exports will facilitate positive reallocation effects within importing countries and possible greater growth of higher value-added activities.

The remaining of the paper is structured as follows: Section 2 explains our difference-in-differences approach; Section 3 describes the matched employer-employee panel data used in this paper and some general statistics on service exports; and Section 4 presents the results and some extensions. Finally, Section 5 summarises and discusses our findings.

2 Methodology

Our empirical analysis is based on the estimation of equations of employment (and sales and other variables) inspired by a difference-in-differences approach. We compare the change in the values of these variables in (three-digit) service sectors, before and after 2012 (in the years between 2007 and 2011 and in 2012 and 2013), with the same change in non-service sectors. This approach is motivated by our discussion above that service sectors may respond more strongly to structural reforms that make labour markets more flexible, in particular as they exploit opportunities in terms of international trade. In other words, the ‘intervention’ we are considering in our analysis is that of a set of structural reforms that, although applicable to different sectors (manufacturing and services, tradable and non-tradable), would have greater potential effects upon services due to the international trade dimension.

More specifically, the equation we estimate is as follows:

$$Y_{it} = \beta_1 I(t \geq 2012) + \beta_2 I(t \geq 2012) * S_i + \alpha_i + \epsilon_{it}, \quad (1)$$

in which Y_{it} is, depending on the specification, log total employment, sales, etc, of the three-digit sector i in year t ; $I(t \geq 2012)$ is a dummy variable equal to one for years 2012 and

²Related firm-level literatures include the effects of international trade on performance, wages and rent sharing (Martins & Yang 2009, Martins & Opromolla 2011, Martins & Yang 2015).

2013; S_i is a dummy variable equal to one for i service sectors (or a subset of service exports more likely to be more involved in exports, depending on the specification); and α_i are sector fixed effects, capturing the time-invariant heterogeneity across sectors over all seven years. β_2 is the parameter of interest, indicating the average difference in the 2012-2013 period in the dependent variable considered between service and non-service sectors.

The extent to which the estimates obtained from this model will provide good indications of the effects of service exports in terms of employment resilience depend on a number of assumptions. One particular assumption is that, absent the intervention, the outcome of the treatment group would have followed a similar path to that of the control group. Of course, testing this assumption is a very challenging exercise, given the multitude of shocks that apply to an economy during a period of recession (GDP fell by 4% in 2012 alone). At the same time, given our previous discussion, it is important to research if there are systematic differences in the levels of employment and a number of related variables in services sectors, compared to other sectors, in the context of the shocks and opportunities that emerged over the period.

3 Data

This paper draws on ‘Quadros de Pessoal’ (Personnel Records), a particularly rich annual census of all firms based in Portugal that employ at least one worker. In this census, conducted and administered by the Ministry of Employment, each firm provides extensive information about itself and also about each one of their workers employed at the census reference month (October).³ Indeed, the extensive coverage of ‘Quadros de Pessoal’ implies that the only worker categories not present in the data are the self-employed and civil servants.

The long list of variables available in the data includes unique, time-invariant identifiers for each firm and each employee. Other firm-level variables are industry (5-digit code), region (up to 400 different units), number of employees, firm age, public, private/domestic or foreign ownership, sales, and equity. At the worker-level, the data set includes information about age, gender, schooling, tenure, wages, hours worked, occupation, job level and promotions. The data includes several wage variables, all of them expressed in monthly values (the most common frequency of pay in Portugal), including base wages, tenure-related payments, overtime pay, subsidies and ‘other payments’ (a residual category including bonuses and profit-

³See Martins (2009) for a different application of this data set.

or performance-related pay). The benchmark measure of pay adopted in this study is based on the sum of all five types of pay, resulting in a total gross monthly pay variable.

Table 2 presents the key descriptive statistics of the data set we used, after aggregating the information into all (265) three-digit industry level (codes ranging from 011 to 990), across the years of 2007 up to 2013 (the last year available of QP data currently available). As to employment levels, we find an average of 9,520 workers in each sector in each year (of which 4,356 are women). Average sales across the same sector-year averages are 1,204 million euros while average exports (goods or services, depending on the sector) are 167 million euros.⁴ Average equity, a proxy for the firm's or the sector's capital, is 373 million euros, while the average wagebill (the sum of all workers' pay in each sector, in October of each year) is 8.7 million euros. 42.3% of the observations are in the services sectors, while 16.6% are in a subset of the services sectors defined by above-median growth rate in exports between 2010 and 2013 (24.5%). Finally, the 'after' period corresponds to 25% of the observations (or two years out of eight, between 2007 and 2014).

Finally, it is important to mention, in terms of context, the period 2005-2014 was characterised by an important increase in services exports in the country, in particular in 2013 and 2014 - see Table 1. In fact, total international trade in services increased from 25.6 to 29.2 billion US dollars between 2012 and 2013. The main components are travel, transport, and other business services, all corresponding to approximately at least five billion dollars each. Telecoms, construction, maintenance, and financial services are the other most important sectors, accounting for between 500 million and one billion dollars each.

4 Results

Our analysis considers different samples, 'treatment' variable definition, and observation weightings, in order to provide a good indication of the robustness of our findings. Starting with the most important outcome variable - employment -, we present our results in Table 3, based on the estimation of equation ???. These results indicate that, regardless of the specific model or other considerations, we always observe a systematic positive effect on employment across service exports, compared to other sectors. Moreover, the coefficients across

⁴Each sector-level variable is computed from adding the information of all firms (or workers, when applicable) in the sector and year. Average exports at the 3-digit level are computed from the 2010 proportions of 3-digit sector sales in the relevant 2-digit sector.

all specifications are significant, both in economic and statistical terms. Similar findings here and throughout are also obtained if taking a broader view of services, including wholesale and retail sectors too. Again similar findings are obtained if one excludes from the analysis the subsector of construction (codes 41, 42, and 43), which was subject to a pronounced decline during this period, following a large boom that started in the late 1990s.

More specifically, the coefficients from Table 3 tend to be less dispersed when considering all types of services (first three columns), ranging between .108 and .137, than when considering specifically high-export-growth services, in which case the coefficients range between .057 and .126.⁵ Another important point concerns the large negative magnitude of the ‘after’ coefficients, ranging between -.11 and -.225, indicating the severity of the recession and its large overall impact on jobs.

After having established that service sectors experience stronger employment growth (or at least greater resilience) in 2012 and 2013 compared to non-service sectors - or high-export-growth service sectors compared to other sectors (in services or elsewhere), we now turn our attention to other related outcomes of interest. First, we consider the cases of sales (domestic and international) and equity (a proxy for capital). Again, as in the case of employment, these are values aggregated across firms, at the 3-digit sector level. Table 4 presents the results, considering two specifications, both based on the full 2007-2013 data and weighted observations but the two different measures of the service sectors. Again we find evidence that, across the service sectors, both variables respond positively (in relative terms) to the post-2011 period. This is particularly the case in terms of equity, with coefficients of .264 and .257, while the coefficients on sales are similar to those obtained before in the case of employment, of .144 and .118. This gap in the two groups of estimates suggests that firms in services engaged in greater investment, which is consistent with our priors above about the differences between services and manufacturing in this respect, in particular during a period of recession.

We consider two additional outcomes variables, presented in Table 5. These are the mean wage per worker across all firms in each sector and the employment level of women. The first case is motivated by our interest in the labour cost dimension, which we argued may be a key driver of the growth or at least resilience of employment amongst the services sectors. We

⁵The fact that the effects are not necessarily stronger amongst the high-export-growth service sectors may be related to differences in total sales across these sectors - for instance the latter sectors may experience lower growth in domestic sales, in which case the increase in employment would indeed be slower.

find somewhat different results across the two specifications, a statistically significant negative effect in one case (-0.015) and an insignificant effect in the other. At the very least, these results indicate that average wages do not increase as firms expand their workforces, which is against consistent with our discussion above about the relevance of structural reforms that increase the responsiveness of the labour market (including wages) to the economic context, in this case of high and increasing levels of unemployment.

The second case, that of female employment, is motivated not only by our interest in the robustness of our main, employment findings but also by the relevance of research on gender issues, in particular in periods of economics crisis. For instance, gender discrimination may be more acute during downturns. Here we find very similar coefficients to those covering both men and women (.127 and .075 in this case, in comparison, respectively, to .137 and .077 in columns 1 and 4 of Table 3). This suggests that services resilience has no detrimental effects on female employment, which may be consistent with the typically larger than average representation of women amongst services industries. This result indicates that the export dimension of services is not skewed negatively against female employment.

4.1 Extension - Foreign firms

Here we replicate our analysis above considering exclusively the case of foreign firms - defined as those firms whose capital is owned in 50% or more by foreign investors or firms. The data construction process was the same as before, aggregating the matched employer-employee information not only by three-digit sector and year but also by foreign status. Changes over time in the different indicators can therefore reflect changes by the same firms (i.e. a firm that remains foreign owned and increases its employment level), new firms (greenfield investment), firm closure, or firms that switch foreign-ownership status (acquisitions and divestments, from domestic to foreign status or vice-versa).

Table 6 presents the results on employment, following the same format as in the case of Table 3. With the exception of one out of six coefficients, the effects documented in the case of foreign firms are always larger - or even much larger - than those obtained for all firms (domestic- and foreign-owned). For instance, in the case of model 1 (a comparison between services and non-services, considering all years between 2007 and 2013 and weighting observations by their employment levels in 2010), the employment effect is now .329 when

before it was .137. In other words, these results indicate that much of the employment growth or resilience associated to service sectors in the period 2012-13 is driven by the activity of foreign-owned firms, which is again consistent with our hypothesis above. It is also interesting to note the contrast in the coefficients of the ‘after’ dummy, now positive and large (around .9), compared to the negative figures (around -.2) when considering all firms regardless of ownership, indicating the growth of the foreign-owned firms at a time of major downturns.

Finally, Tables 7 and 8 conduct similar analyses of sales, equity, mean wages and female employment as before but now only considering foreign firms. Consistent with the previous results, we again find much larger coefficients in most of these variables, sometimes larger by a factor of three. The exception is the case of average wages, which increase rather than decrease or stay unchanged as in the case of foreign firms. This may be explained by a standard positive labour supply curve in which firms that want to expand their workforce need to pay higher salaries. This may also be related to the international findings that foreign firms pay higher wages, even when controlling for a number of potential confounding variables (Hijzen et al. 2013). More specifically to our study, the structural reforms that lower labour costs may also provide greater flexibility to foreign firms to differentiate themselves from other firms, offer relatively better working conditions, and attract a more qualified and motivated workforce, which may be particularly important in the context of (service) exports.

5 Conclusions

This paper finds evidence that exports of services can be an important channel to promote employment resilience during periods of macroeconomic downturn, in particular when coupled with structural reforms. The increasing tradable nature of services, their high labour intensity, their lower requirements of time and capital, their interaction with structural reforms that reduce unit labour costs - all these factors can make services exports an important channel to boost employment levels in countries facing recessions, especially when other, non-standard economic policies are of little help.

After making the general case for the potential of service exports in boosting the resilience of labour markets, we investigated the specific case of Portugal between 2007 and 2013 and in particular in the last two years of the period, following the implementation of a number of structural reforms that made labour more attractive for firms. According to our findings,

based on aggregated matched employer-employee data and difference-in-differences methods, the employment levels of service sectors exhibit relative increases of approximately 10% in 2012 and 2013. Other related variables, such as sales, equity and female employment, experience similar or even higher growth in those sectors and time periods.

We also find evidence of important interactions with foreign direct investment, as foreign-owned firms appear to drive a large part of the effects documented above. For instance, the employment effects in service sectors in 2012-13 increase from around 10% to approximately 30% when considering only foreign-owned firms. Interestingly, while wages appear to fall when considering both domestic and foreign firms (a set dominated by the former), wages are found to increase when considering only foreign firms. This result may be regarded as further evidence of the importance of an open economy, not only in terms of the promotion of service exports but also of inflows of foreign capital that can accelerate the pace of economic recovery - and the resilience and improvement of working conditions.

A number of questions are left for further research. These include the interplay between domestic and international sales in the shaping of the overall employment effects documented here, the different roles of greenfield investments and acquisitions in driving the foreign-firm effects, and the potential insights of more detailed data on firm-level international trade.

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Table 1: Service exports in different sectors, Portugal, 2005, 2010-2014 (USD millions)

Sector	2005	2010	2011	2012	2013	2014
All services	15104.6	22810.6	26839.3	25607.3	29153.2	30258.0
Travel	7678.9	10067.0	11324.0	11057.5	12281.6	13776.8
Transport	3009.8	5875.1	6835.3	6596.5	7333.1	7396.7
Other business services	1732.6	3246.2	4423.4	3804.5	4920.6	4797.6
Telecom., comp., and inf. serv.	626.5	940.3	1152.4	1221.9	1313.1	1398.9
Construction	378.6	684.7	811.8	741.4	897.6	707.2
Mainten. and repair serv. NIE	426.8	476.8	636.7	544.8	721.0	505.9
Manufact. services(1)	396.6	353.6	436.5	457.4	472.7	465.2
Financial services	341.0	396.0	429.6	361.0	322.6	462.0
Personal, cult., and recreat. serv.	204.2	357.6	332.2	355.9	399.7	288.5
Gov't goods and services NIE	160.7	237.1	251.6	276.2	314.7	225.3
Insurance and pension services	102.6	128.5	140.4	137.5	131.4	137.0
Charges for use of IP	46.4	46.4	66.7	52.7	45.1	96.9

Notes: Source: UNCTAD. (1) - Manufacturing services on physical inputs owned by others.

Table 2: Descriptive stats

Variable	Mean	Std. Dev.	Min.	Max.
Sector	452.879	266.664	11	990
Year	2010.5	2.292	2007	2014
Workers	9520.296	18240.079	0	224222
Exports	167.081	385.567	0	4603.8
Sales	1204.18	3115.071	0	41380.925
Equity	373.376	1697.951	0	24111.268
Wagebill	8775.616	15887.238	0	151978.874
Female workers	4355.876	10106.671	0	86055
Services	0.423	0.494	0	1
Services (2)	0.166	0.372	0	1
After	0.25	0.433	0	1
N	2120			

Notes: The table presents selected statistics from the data set used for the regressions presented below. Each observation corresponds to a three-digit sector in a year over the period 2007-2014. Workers (Female workers) denotes the number of (female) employees, Exports (Sales) the value of sectoral exports (sales) over the year, Equity the value of equity of the firm in the sector in the year, Wagebill the total monthly salary payments of firms in the sector to their workers in the month of October, Services (Services (2)) is a dummy variable for sectors in services, defined as those in 2-digit sector 49 (transports) or above (services that exhibit a higher growth rate in their total exports, greater than the median), and After is a dummy variable equal to one in 2012, 2013 and 2014.

Table 3: Employment effects

	(1)	(2)	(3)	(4)	(5)	(6)
<i>Services * After</i>	.137 (0.000)***	.111 (0.000)***	.108 (0.000)***			
<i>Services(2) * After</i>				.077 (0.000)***	.126 (0.000)***	.057 (0.000)***
After	-.225 (0.000)***	-.153 (0.000)***	-.145 (0.000)***	-.182 (0.000)***	-.135 (0.000)***	-.110 (0.000)***
Const.	10.223 (0.000)***	8.046 (0.000)***	10.151 (0.000)***	10.223 (0.000)***	8.046 (0.000)***	10.151 (0.000)***
Obs.	1834	1838	525	1834	1838	525
R^2	.986	.98	.996	.986	.98	.995

Notes: All models include sector-specific fixed effects. Robust standard errors, allowing for clustering at the Services (or Services (2)) level. Each column corresponds to a different regression: the first three correspond to a Services dummy variable that includes all services sectors; the last three to a Services dummy variable that only includes services sectors that increase their exports above the median across all service sectors. All columns (except 2 and 5) correspond to regressions weighting each observation by its employment size in 2010. Significance levels: ***-significant at the 1% level, **-significant at the 5% level, *-significant at the 10% level.

Table 4: Sales and equity effects

	Log Sales		Log Equity	
	(1)	(2)	(3)	(4)
<i>Services * After</i>	.144 (0.000)***		.264 (0.000)***	
<i>Services(2) * After</i>		.118 (.057)**		.257 (0.000)***
After	-.164 (0.000)***	-.127 (.057)**	-.183 (0.000)***	-.125 (0.000)***
Const.	21.419 (0.000)***	21.419 (.013)***	19.504 (0.000)***	19.504 (0.000)***
Obs.	1820	1820	1818	1818
R^2	.976	.976	.96	.96

Notes: All models include sector-specific fixed effects. Robust standard errors, allowing for clustering at the Services (or Services (2)) level. Each column corresponds to a different regression: the first and third correspond to a Services dummy variable that includes all services sectors; the second and fourth to a Services dummy variable that only includes services sectors that increase their exports above the median across all service sectors. All columns correspond to regressions weighting each observation by its employment size in 2010. Significance levels: ***-significant at the 1% level, **-significant at the 5% level, *-significant at the 10% level.

Table 5: Mean wages and female employment effects

	Log Mean Wages		Log Female Employment	
	(1)	(2)	(3)	(4)
<i>Services * After</i>	-.015 (0.000)***		.127 (0.000)***	
<i>Services(2) * After</i>		.005 (.012)		.075 (0.000)***
After	.065 (0.000)***	.057 (.012)***	-.200 (0.000)***	-.161 (0.000)***
Const.	-.177 (9.09e-17)***	-.177 (.003)***	9.211 (0.000)***	9.211 (0.000)***
Obs.	1834	1834	1829	1829
R^2	.978	.978	.99	.99

Notes: All models include sector-specific fixed effects. Robust standard errors, allowing for clustering at the Services (or Services (2)) level. Each column corresponds to a different regression: the first and third correspond to a Services dummy variable that includes all services sectors; the second and fourth to a Services dummy variable that only includes services sectors that increase their exports above the median across all service sectors. All columns correspond to regressions weighting each observation by its employment size in 2010. Significance levels: ***-significant at the 1% level, **-significant at the 5% level, *-significant at the 10% level.

Table 6: Employment effects - foreign-owned firms

	(1)	(2)	(3)	(4)	(5)	(6)
<i>Services * After</i>	.329 (0.000)***	.326 (0.000)***	.054 (0.000)***			
<i>Services(2) * After</i>				.154 (0.000)***	.348 (0.000)***	.063 (0.000)***
After	.840 (0.000)***	.708 (0.000)***	.913 (0.000)***	.946 (0.000)***	.762 (0.000)***	.923 (0.000)***
Const.	7.459 (1.19e-15)***	5.776 (0.000)***	8.035 (0.000)***	7.460 (0.000)***	5.776 (0.000)***	8.035 (0.000)***
Obs.	1653	1655	504	1653	1655	504
R^2	.688	.807	.962	.686	.807	.962

Notes: All models include sector-specific fixed effects. Robust standard errors, allowing for clustering at the Services (or Services (2)) level. Each column corresponds to a different regression: the first three correspond to a Services dummy variable that includes all services sectors; the last three to a Services dummy variable that only includes services sectors that increase their exports above the median across all service sectors. All columns (except 2 and 5) correspond to regressions weighting each observation by its employment size in 2010. Significance levels: ***-significant at the 1% level, **-significant at the 5% level, *-significant at the 10% level.

Table 7: Sales and equity effects - foreign-owned firms

	Log Sales		Log Equity	
	(1)	(2)	(3)	(4)
<i>Services * After</i>	.276 (0.000)***		.697 (0.000)***	
<i>Services(2) * After</i>		.296 (.084)***		.602 (0.000)***
After	.688 (0.000)***	.740 (.084)***	.773 (0.000)***	.934 (0.000)***
Const.	19.009 (0.000)***	19.009 (.019)***	16.674 (0.000)***	16.675 (0.000)***
Obs.	1632	1632	1573	1573
R^2	.782	.782	.85	.848

Notes: All models include sector-specific fixed effects. Robust standard errors, allowing for clustering at the Services (or Services (2)) level. Each column corresponds to a different regression: the first and third correspond to a Services dummy variable that includes all services sectors; the second and fourth to a Services dummy variable that only includes services sectors that increase their exports above the median across all service sectors. All columns correspond to regressions weighting each observation by its employment size in 2010. Significance levels: ***-significant at the 1% level, **-significant at the 5% level, *-significant at the 10% level.

Table 8: Mean wages and female employment effects - foreign-owned firms

	Log Mean Wages		Log Female Employment	
	(1)	(2)	(3)	(4)
<i>Services * After</i>	.032 (0.000)***		.441 (0.000)***	
<i>Services(2) * After</i>		.073 (.004)***		.226 (0.000)***
After	-.139 (0.000)***	-.141 (.004)***	.777 (0.000)***	.914 (0.000)***
Const.	.068 (0.000)***	.068 (.0008)***	6.475 (0.000)***	6.476 (0.000)***
Obs.	1648	1648	1623	1623
R^2	.826	.827	.749	.747

Notes: All models include sector-specific fixed effects. Robust standard errors, allowing for clustering at the Services (or Services (2)) level. Each column corresponds to a different regression: the first and third correspond to a Services dummy variable that includes all services sectors; the second and fourth to a Services dummy variable that only includes services sectors that increase their exports above the median across all service sectors. All columns correspond to regressions weighting each observation by its employment size in 2010. Significance levels: ***-significant at the 1% level, **-significant at the 5% level, *-significant at the 10% level.