APPENDIX C: ROBUSTNESS OF MAIN RESULTS

In this Appendix, we document the robustness or sensitivity of our main results to the inclusion of interacted fixed effects, the choice of the DOLS method of estimation, and the omission in the of price indicators of direct and indirect impacts with respect to manufacturing and non-manufacturing and to the omission of low and low and high-skilled wage impact indicators.

ROBUSTNESS TO FIXED EFFECTS AND TO DOLS ESTIMATION

Relation (1) includes country, industry, country*industry and country*year fixed effects to take into account the omission bias that would otherwise be possible, but no industry*year fixed. Industry*year fixed effects could take into account industry specific omitted variables, notably technical change, but to introduce these latter fixed effects in addition to the others would explained almost all the variability of many relation (1) variables (see the variance analysis in appendix A).

Table C1 shows the estimation results when these fixed effects are included (columns 3 and 4) and when they are omitted (columns 1 and 2, corresponding to columns 4 and 5 of Table 1). The introduction of industry*year fixed effects leads to a reduction in the absolute value of every coefficient. This reduction does not change qualitatively the results when we focus on all industries and all workers. When we distinguish between the impact of manufacturing and non-manufacturing production prices and of high- and low-skilled real wages, the coefficients of the upstream non-manufacturing burden indicator and of the low-skilled wages burden indicator are no more statistically significant. The lack of data variability may explain these results. However the main estimates (columns 1 and 2) for these variables should be taken with caution.

These estimations use the Dynamic OLS (DOLS) estimator in order to take into account possible simultaneity between the non-stationary variables. Table C1 shows also the robustness of the estimation results to the use of the OLS estimator (columns 5 and 6). The

results are very close to the DOLS estimates. However, according to a Hausman test the OLS estimates are not consistent, so we prefer to use the DOLS estimates.

ROBUSTNESS TO THE OMISSION OF PRICE AND WAGE INDICATORS OF IMPACT

Table 1 shows the robustness of estimation results to the omission of the direct price impact indicator, the indirect price impact indicator or the wage impact indicator (column 1 to 5). The estimated coefficients tend to be higher (in absolute value) when an indicator is omitted, but the differences are not significant. Table C3 extends this robustness analysis.

Table C3 shows the estimation results when some of the market imperfections are omitted (i.e. manufacturing or non-manufacturing indicators or high and low skill wage indicators). The coefficients tend also to be lightly higher (in absolute value) when indicators are omitted, except the coefficient of the indirect price impact indicator of non-manufacturing industries: both the omission of the wage impact indicators and of the price impact indicators of the manufacturing industries lead to sensible increases (in absolute value) of this last coefficient (from -5.06 to -9.36). This omission effect is explained by the correlation between the indicators. The within country*industry and country*year values of the indirect price impact indicator of non-manufacturing industries are significantly correlated with the within values of all the other indicators (at a 1% threshold) and these correlations are generally positive, except with the wage impact indicator of the low skilled workers.

According to our simulations, reforms of the non-manufacturing product market regulations would lead to the most important productivity gains, mainly through their indirect impact. This robustness analysis shows that in order to estimate this impact we must take into account of the various market imperfections. The omission of manufacturing product or labor regulations would lead to overestimate this impact.

Table C1: Estimation results of the relation (1), sensitivity to industry*year fixed effects
Dependent variable: MFP (mfp)

Estimator		DOLS				OLS	
		(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
US MFP (mfp^{US})		0.720*** [0.014]	0.756*** [0.015]	_	_	0.687*** [0.013]	0.717*** [0.014]
Direct prices in	**All industries**	-0.441*** [0.033]		-0.248*** [0.030]		-0.460*** [0.031]	
	Manuf. indus. (DM_p)		-0.379*** [0.037]		-0.130*** [0.033]		-0.406*** [0.034]
	NM indus. (DNM_p)		-0.827*** [0.090]		-0.719*** [0.080]		-0.785*** [0.080]
Indirect prices from	**All industries**	-0.479*** [0.068]		-0.278*** [0.090]		-0.392*** [0.064]	
	Manuf. indus. (IM_p)		-0.446*** [0.069]		-0.271*** [0.091]		-0.359*** [0.064]
	NM indus. (INM_p)		-5.060*** [0.898]		-0.798 [0.872]		-4.838*** [0.844]
Country wages * industry labour share	**All Skills**	-2.091*** [0.170]		-0.499* [0.285]		-1.650*** [0.157]	
	High-Skilled (I_w^{H})		-3.043*** [0.329]		-2.162*** [0.477]		-2.412*** [0.292]
	Low-Skilled (I_w^{L})		-1.743*** [0.215]		-0.112 [0.339]		-1.327*** [0.202]
Observations		2820	2820	2820	2820	2820	2820
R-squared		0.798	0.804	0.872	0.877	0.783	0.788
Fixed effects:							
Country*industry		Y	Y	Y	Y	Y	Y
Country*year		Y	Y	Y	Y	Y	Y
Industry*year		N	N	Y	Y	N	N

*** significant at 1%; ** significant at 5%; *significant at 10%. Standard errors between brackets.

Table C2
Estimation results of the relation (1), sensitivity to the calibration of the direct prices
Dependent variable: MFP (mfp)

Dependent variable: mfp		(1)	(2)	(3)	(4)
Calibration of the direct prices		N	Y	N	Y
US MFP (mfp^{US})		0.720*** [0.014]	0.811*** [0.012]	0.756*** [0.015]	0.836*** [0.013]
Direct prices in	All industries	-0.441*** [0.033]	-1.387*** [0.192]		
	Manufacturing industries (DM_p)			-0.379*** [0.037]	-0.963*** [0.177]
	Non-Manuf. industries (DNM_p)			-0.827*** [0.090]	-1.524*** [0.299]
Indirect prices from	All industries	-0.479*** [0.068]	-0.405*** [0.070]		
	Manufacturing industries (IM_p)			-0.446*** [0.069]	-0.417*** [0.071]
	Non-Manuf. industries (INM_p)			-5.060*** [0.898]	-1.565** [0.733]
Country wages * industry labour share	All Skills	-2.091*** [0.170]	-2.216*** [0.175]		
	High-Skilled (JH_w)			-3.043*** [0.329]	-3.953*** [0.325]
	Low-Skilled (JL_w)			-1.743*** [0.215]	-1.875*** [0.221]
Observations		2820	2820		2820
R-squared		0.798	0.784		

*** significant at 1%; ** significant at 5%; *significant at 10%.
Standard errors between brackets.
Country*industry and country*year fixed effects included.

Table C3
Estimation results of the relation (1), sensitivity to the omission of indicators
Dependent variable: MFP (mfp)

Dependent variable: mfp		(1)	(2)	(3)	(4)	(5)
US MFP (mfp^{US})		0.756*** [0.015]	0.731*** [0.014]	0.818*** [0.012]	0.713*** [0.015]	0.835*** [0.013]
Direct prices in	**Manufacturing industries (DM_p)**	-0.379*** [0.037]	-0.434*** [0.037]		-0.481*** [0.037]	
	Non-Manuf. industries (DNM_p)	-0.827*** [0.090]	-1.072*** [0.088]	-1.051*** [0.085]		
Indirect prices from	**Manufacturing industries (IM_p)**	-0.446*** [0.069]	-0.475*** [0.070]		-0.488*** [0.072]	
	Non-Manuf. industries (INM_p)	-5.060*** [0.898]	-7.490*** [0.863]	-9.361*** [0.852]		
Country wages * industry labour share	**High Skills (JH_w)**	-3.043*** [0.329]				-4.239*** [0.320]
	Low Skills (JL_w)	-1.743*** [0.215]				-2.037*** [0.223]
Observations		2820	2820	2820	2820	2820
R-squared		0,804	0.792	0.773	0.777	0.779

*** significant at 1%; ** significant at 5%; *significant at 10%. Standard errors between brackets. Country*industry and country*year fixed effects included.