ONLINE APPENDIX
(NOT FOR PUBLICATION)

Appendix A Equilibrium

This Appendix characterizes the equilibrium of the model, and shows how to solve for the key variables of interest as a function of domestic expenditure shares, $\pi_{ii}^{j}(k)$, and ratios of net exports to aggregate revenues in each sector, λ_i^j. In addition, we provide the system of equations that we use for computing our counterfactual exercises.

A.1 Equilibrium

An equilibrium is a set of aggregate prices $\{P_i, w_i, s_i\}_{i\in I}$, and $\left\{P_i^j, c_i^j, p_{v,i}^j, p_{b,i}^j\right\}_{i\in I, j\in J}$, aggregate quantities $\left\{C_i^j, X_i^j, Y_i^j\right\}_{i\in I, j\in J}$ and $\left\{H_i^j, L_i^j\right\}_{i\in I, j\in J}$, and trade shares $\left\{\pi_{in}^j(k)\right\}_{i,n\in I, k\in K^j, j\in J}$, such that, given factor supplies $\{H_i, L_i\}_{i\in I}$, technologies $\left\{A_i^j(k)\right\}_{i\in I, k\in K^j, j\in J}$, trade costs $\left\{\tau_{in}^j(k)\right\}_{i,n\in I, k\in K^j, j\in J}$, and net exports $\{NX_i\}_{i\in I}$, the following are satisfied:

i. **Households maximize utility subject to their budget constraints.** This implies demands:

$$\frac{P_i^j C_i^j}{\sum_j P_i^j C_i^j} = \bar{\phi}_i^j \left[\frac{P_i^j}{P_i^C}\right]^{1-\rho}, \tag{A.1}$$

where P_i^C consumption price index in country i, and the budget constraint:

$$w_i L_i + s_i H_i = \sum_j P_i^j C_i^j + NX_i. \tag{A.2}$$

ii. **Producers of intermediate varieties minimize costs.** Cost minimization implies that the prices of the input bundles are given by:

$$c_i^j = \bar{\beta}_i^j \left[p_{b,i}^j\right]^{1-\beta_j} \left[p_{v,i}^j\right]^{\beta_j} \tag{A.3}$$

$$p_{v,i}^j = \left[\bar{\mu}_i^j w_i^{1-\gamma} + \left[1-\bar{\mu}_i^j\right] s_i^{1-\gamma}\right]^{\frac{1}{1-\gamma}} \tag{A.4}$$

$$p_{b,i}^j = \left[\sum_{l=1}^{J} \bar{\alpha}_i^{lj} P_i^{l\,1-\rho}\right]^{\frac{1}{1-\rho}}. \tag{A.5}$$

Given these definitions, factor demands are given by:

$$\begin{aligned} w_i l_{in}^j(\omega,k) &= \bar{\mu}_i^j \left[\frac{p_{v,i}^j}{w_i}\right]^{\gamma-1} \beta_i^j p_n^j(\omega,k)\, q_{in}^j(\omega,k)\, \mathbb{I}_{in}^j(\omega,k) \\ s_i h_{in}^j(\omega,k) &= \left[1-\bar{\mu}_i^j\right]\left[\frac{p_{v,i}^j}{s_i}\right]^{\gamma-1} \beta_i^j p_n^j(\omega,k)\, q_{in}^j(\omega,k)\, \mathbb{I}_{in}^j(\omega,k) \\ P_i^l x_{in}^l(\omega,k) &= \sum_j \bar{\alpha}_i^{lj}\left[\frac{p_{b,i}^j}{P_i^l}\right]^{\rho-1}\left[1-\beta_i^j\right] p_n^j(\omega,k)\, q_{in}^j(\omega,k)\, \mathbb{I}_{in}^j(\omega,k). \end{aligned}$$

iii. **Cost minimization by producers of final goods.** Cost minimization implies that demand for variety (ω, k) is given by:

$$p_i^j(\omega,k)\, q_i^j(\omega,k) = \left[\frac{p_i^j(\omega,k)}{P_i^j(k)}\right]^{1-\eta_i^j(k)} \sigma_i^j(k)\, P_i^j Y_i^j.$$

As shown in Eaton and Kortum (2002) under our same distributional assumptions, price indices for final goods are given by

$$P_i^j = \bar{\sigma}_i^j \left[\prod_{k=1}^{K^j} P_i^j(k)^{\sigma_i^j(k)}\right]. \tag{A.6}$$

where

$$P_i^j(k) = \Xi_i^j(k)\left[\sum_{l=1}^{I}\left[\tau_{li}^j(k)\,\frac{c_l^j}{A_l^j(k)}\right]^{-1/\theta^j(k)}\right]^{-\theta^j(k)},$$

where $\bar{\sigma}_i^j$ and $\Xi_i^j(k)$ are constants. Trade shares between any pair of countries are given by equation (7).

iv. **Aggregate factor market clearing.** Integrating factor demands across producers, adding across all destination countries n, substituting for the demand for each variety $q_i^j(\omega,k)$, using equation (6), and adding across industries and across sectors, factor market clearing requires that the total payments to each type of labor in country i equal total demand:

$$w_i L_i^j = \bar{\mu}_i^j \left[\frac{p_{v,i}^j}{w_i}\right]^{\gamma-1} \beta_i^j R_i^j \quad \text{(A.7)}$$

$$s_i H_i^j = \left[1-\bar{\mu}_i^j\right] \left[\frac{p_{v,i}^j}{s_i}\right]^{\gamma-1} \beta_i^j R_i^j, \quad \text{(A.8)}$$

where $R_i^j = \sum_n \sum_{k\in K^j} \pi_{in}^j(k)\, P_n^j(k)\, Y_n^j(k)$ are aggregate revenues accruing from sales in sector j, and the demand for intermediate inputs in each sector l are given by:

$$P_i^l X_i^l = \sum_j \bar{\alpha}_i^{lj} \left[\frac{p_{b,i}^j}{P_i^l}\right]^{\rho-1} \left[1-\beta_i^j\right] R_i^j. \quad \text{(A.9)}$$

v. **Labor market clearing.**

$$H_i = \sum_j H_i^j \quad ; \quad L_i^j = \sum_j L_i^j. \quad \text{(A.10)}$$

vi. **Final goods market clearing.**

$$Y_i^j = C_i^j + X_i^j. \quad \text{(A.11)}$$

Note that, after choosing a numeraire, $(30 \times I - 1 + I \times I \times (K^S + K^G + K^F))$ aggregate variables must be determined in equilibrium. Equations (A.1)-(A.11) and (7) give a system of $(30 \times I - 1 + I \times I \times (K^S + K^G + K^F))$ independent equations, since the market clearing conditions together with the budget constraints and the definition of revenues make one budget constraint redundant.

A.2 Solving in terms of domestic expenditure shares and sectorial net exports

In this section we show how to solve for domestic variables as functions of industrial domestic expenditure shares, $\pi_{ii}^j(k)$, and net exports relative to aggregate revenues, λ_i^j. From equations, (7) and (A.6) we can write the industry-level price indices as functions of domestic expenditure shares:

$$P_i^j(k) = \Xi_i^j(k) \left[c_i^j / A_i^j(k)\right] \pi_{ii}^j(k)^{\theta^j(k)},$$

and the sectoral price indexes as:

$$P_i^j = \bar{\sigma}_i^j \prod_{k=1}^{K^j} \left[\Xi_i^j(k) \left[c_i^j / A_i^j(k) \right] \right] \pi_{ii}^j(k)^{\sigma_j(k)\theta^j(k)}. \tag{A.12}$$

Using equations (A.7) and (A.8) we can write

$$\left[\frac{s_i}{w_i}\right]^\gamma \frac{H_i}{L_i} = \frac{\sum_j \left[1-\bar{\mu}_i^j\right] \left[p_{v,i}^j\right]^{\gamma-1} \beta_i^j r_i^j}{\sum_j \bar{\mu}_i^j \left[p_{v,i}^j\right]^{\gamma-1} \beta_i^j r_i^j}, \tag{A.13}$$

where $r_i^j \equiv R_i^j / R_i$ is the share of sector j in aggregate revenues. From the definition of λ_i^j, we can write r_i^j as:

$$r_i^j = \lambda_i^j - 1 + \frac{P_i^j Y_i^j}{R_i}. \tag{A.14}$$

Equation (A.11) implies

$$\frac{P_i^j Y_i^j}{R_i} = \frac{P_i^j C_i^j}{R_i} + \frac{P_i^j X_i^j}{R_i}. \tag{A.15}$$

Combining (A.1), (A.11), and the definition of λ_i^j, we obtain

$$\frac{P_i^j C_i^j}{R_i} = \bar{\phi}_i^j \left[\frac{P_i^j}{P_i}\right]^{1-\rho} \left[4 - \sum_{j=1}^{3} \lambda_i^j - \frac{\sum_j P_i^j X_i^j}{R_i}\right], \tag{A.16}$$

where (A.9) implies:

$$\frac{\sum_j P_i^j X_i^j}{R_i} = \sum_j \bar{\alpha}_i^{lj} \left[\frac{p_{b,i}^j}{P_i^l}\right]^{\rho-1} \left[1-\beta_i^j\right] r_i^j. \tag{A.17}$$

Given values for $\pi_{ii}^j(k)$ and λ_i^j, equations (A.3), (A.5), (A.4), and (A.12), -(A.17) give a system of 23 equations that can be used to solve for the 13 relative prices in the economy together with the sectorial revenue shares r_i^j, the ratios of sectorial absorption to aggregate revenues $\frac{P_i^j Y_i^j}{R_i}$, the ratios of sectorial consumption to revenues $\frac{P_i^j C_i^j}{R_i}$, and the ratio of inputs to revenues in the economy $\frac{\sum_j P_i^j X_i^j}{R_i}$.

A.3 Solving for price changes

We now combine equations (A.3), (A.4), (A.5), (A.12), and (A.13) to solve for changes in sectorial value-added shares and the skill premium as a function of changes in domestic expenditure shares and the ratio of sectorial net exports relative to GDP. We solve for all the variables in changes following Dekle, Eaton and Kortum (2008). Define $\hat{x} \equiv x_1/x_0$. We can characterize the change in the skill premium as:

$$\left[\frac{\hat{s}_i}{\hat{w}_i}\right]^{\gamma}\frac{\hat{H}_i}{\hat{L}_i} = \frac{\sum_j \frac{H_i^j}{H_i}\hat{v}_i^{j\,\gamma-1}\hat{r}_i^j}{\sum_j \frac{L_i^j}{L_i}\hat{v}_i^{j\,\gamma-1}\hat{r}_i^j} \tag{A.18}$$

$$\hat{P}_i^j = \left[\hat{c}_i^j/\hat{A}_i^j\right]\prod_{k=1}^{K_j}\hat{\pi}_{ii}^j(k)^{\sigma_i^j(k)\theta^j(k)} \tag{A.19}$$

$$\hat{c}_i^j = \left[\hat{p}_{b,i}^j\right]^{1-\beta_i^j}\left[\hat{p}_{v,i}^j\right]^{\beta_i^j} \tag{A.20}$$

$$\hat{p}_{b,i}^j = \left[\sum_l \alpha_i^{lj}\left[\hat{P}_i^l\right]^{1-\rho}\right]^{\frac{1}{1-\rho}} \tag{A.21}$$

$$\hat{p}_{v,i}^j = \left[\mu_i^j\hat{w}_i^{1-\gamma} + \left[1-\mu_i^j\right]\hat{s}_i^{1-\gamma}\right]^{\frac{1}{1-\gamma}} \tag{A.22}$$

and

$$\hat{r}_i^j = \frac{\lambda_i^j}{r_i^j}\hat{\lambda}_i^j - 1 + \frac{Y_i^j}{R_i^j}\frac{\hat{Y}_i^j}{\hat{R}_i}. \tag{A.23}$$

$$\frac{\hat{Y}_i^j}{\hat{R}_i} = \left[1-\psi_i^j\right]\left[\widehat{\frac{P_i^jC_i^j}{R_i}}\right] + \psi_i^j\left[\widehat{\frac{P_i^jX_i^j}{R_i}}\right] \tag{A.24}$$

$$\widehat{\frac{P_i^jC_i^j}{R_i}} = = \left[\frac{\widehat{P_i^j}}{P_i}\right]^{1-\rho}\frac{Y_i}{P_iC_i}\left[\frac{\sum_j\left[r_i^j\hat{r}_i^j + 1 - \lambda_i^j\hat{\lambda}_i^j\right]}{\sum_j\left[r_i^j + 1 - \lambda_i^j\right]} - \sum_l\frac{Y_i^l}{Y_i}\psi_i^l\left[\widehat{\frac{P_i^lX_i^l}{R_i}}\right]\right] \tag{A.25}$$

$$\widehat{\frac{P_i^lX_i^l}{R_i}} = \sum_j \Phi_i^{lj}\left[\widehat{\frac{\hat{p}_{b,i}^j}{P_i^l}}\right]^{\rho-1}\hat{r}_i^j \tag{A.26}$$

where $\alpha_i^{lj} \equiv \bar{\alpha}_i^{lj}\left[\frac{b_i^j}{P_i^j}\right]^{\rho-1}$ is the share of sector $l's$ inputs in total sector $j's$ input usage, and $\Phi_i^{lj} = \frac{\alpha_i^{lj}\left[1-\beta_i^j\right]r_i^j}{\sum_j \alpha_i^{lj}\left[1-\beta_i^j\right]r_i^j}$, is the share of good l intermediate inputs used by sector j.

Equations (A.18)-(A.26) give a system of 25 equations that can be used to solve for the changes in the 13 relative prices in the economy, together with the changes in sectorial revenue shares $\hat{r}_i^j$, the ratios of sectorial absorption to aggregate revenues $\widehat{\frac{P_i^j Y_i^j}{R_i}}$, the ratios of sectorial consumption to revenues $\widehat{\frac{P_i^j C_i^j}{R_i}}$, and the ratio of inputs to revenues in the economy $\widehat{\frac{P_i^l X_i^l}{R_i}}$, as a function of changes in domestic technologies, $\hat{A}_i^j(k)$, domestic expenditure shares, $\hat{\pi}_{ii}^j(k)$ and sectoral transfers $\hat{\lambda}_i^l$, and of sectoral factor shares μ_i^j, the skilled and unskilled labor shares, shares $\frac{H_i^j}{H_i}$, and $\frac{L_i^j}{L_i}$, the share of value-added in each sector, β_i^j, the share of absorption used as intermediate inputs in each sector ψ_i^j, Φ_i^{lj}, and the elasticities of substitution ρ and γ.

Changes in value-added and employment shares The change in the share of value-added in sector j in total value-added is given by

$$\hat{v}_i^j \quad = \quad \frac{\hat{r}_i^j}{\sum_l \frac{\beta_i^j r_i^l}{\sum_l \beta_i^j r_i^l} \hat{r}_i^j}. \tag{A.27}$$

Finally, note that we can write the change in the share of skilled and unskilled workers employed in sector j, $\omega_{L,i}^j \equiv \frac{L_i^j}{L_i}$, and $\omega_{H,i}^j \equiv \frac{H_i^j}{H_i}$, as:

$$\widehat{\omega_{L,i}^j} = \frac{\hat{\mu}_i^j \hat{r}_i^l}{\sum_j \omega_{L,i}^l \hat{\mu}_i^j \hat{r}_i^l}$$

$$\widehat{\omega_{H,i}^j} = \frac{\left[\widehat{1-\mu_i^j}\right] \hat{r}_i^l}{\sum_j \omega_{H,i}^j \left[\widehat{1-\mu_i^j}\right] \hat{r}_i^l}$$

with:

$$\hat{\mu}_i^j = \left[\left[1-\mu_i^j\right]\left[\frac{\widehat{s_i}}{w_i}\right]^{1-\gamma} + \mu_i^j\right]^{-1}$$

$$\left[\widehat{1-\mu_i^j}\right] = \left[\mu_i^j \left[\frac{\widehat{s_i}}{w_i}\right]^{\gamma-1} + \left[1-\mu_i^j\right]\right]^{-1}.$$

Changes in total sectorial employment shares, $\omega_{E,i}^j \equiv \frac{L_i^j + H_i^j}{L_i + H_i}$ are given by:

$$\widehat{\omega_{E,i}^j} = \frac{L_i^j}{L_i^j + H_i^j} \widehat{\omega_{L,i}^j} + \frac{H_i^j}{L_i^j + H_i^j} \widehat{\omega_{H,i}^j}.$$

Appendix B Proofs

In this section we log-linearize the equilibrium conditions around the initial equilibrium and derive equations (13), (14), (15), (16), (17), (18) and (19) in the paper.

Derivation of Equation (13)

We start by deriving equation (13). To a first order approximation, equation (12) can be written as:

$$\tilde{s}_i - \tilde{w}_i \;=\; \sum_j \left[\frac{H_i^j}{H_i} - \frac{L_i^j}{L_i} \right] \tilde{v}_i^j - \sum_j \frac{1}{1-\mu_i} \frac{L^j}{L} \tilde{\mu}_i^j - \left[\tilde{H}_i - \tilde{L}_i \right]. \tag{B.1}$$

Log-differentiating μ_i^j we obtain:

$$\tilde{\mu}_i^j \;=\; -\mu_i^j \frac{s_i H_i^j}{w_i L_i^j} \left[\widetilde{\frac{s_i H_i^j}{w_i L_i^j}} \right] = -\left[1-\mu_i^j\right] [1-\gamma] \left[\tilde{s}_i - \tilde{w}_i\right], \tag{B.2}$$

where the second equality follows from the factor demand equations. Substituting in equation (B.1) and solving for $\tilde{s}_i - \tilde{w}_i$ we obtain equation (13) in the text.

Derivation of Equation (14)

To derive equation (14), we start by differentiating (A.23) around $\lambda_i^j = 1$.

$$\tilde{r}_i^j = [1-\rho] \left[\tilde{P}_i^j - \tilde{P}_i \right] + \frac{\tilde{\lambda}_i^j}{r_i^j} - \sum_l \tilde{\lambda}_i^l. \tag{B.3}$$

Noting that we can write the value-added shares as $v_i^j = \frac{\beta_i^j r_i^j}{\sum \beta_i^j r_i^j}$ we obtain the changes in these shares as:

$$\tilde{v}_i^j = \tilde{r}_i^j - \sum_j v_i^j \tilde{r}_i^j.$$

Substituting for $\tilde{r}_i^j$ we obtain equation (14) in the text.

Derivation of equation (15)

We now derive equation (15) in the text in the special version of the model with $\beta_i^j = 1$. Substituting equation (14) into (13) we can write:

$$[\tilde{s}_i - \tilde{w}_i] \quad \tilde{\gamma} = \quad \left[\tilde{H}_i - \tilde{L}_i\right] - \sum_j \left[\frac{H_i^j}{H_i} - \frac{L_i^j}{L_i}\right] \left[[1-\rho]\,\tilde{P}_i^j + \frac{\tilde{\lambda}_i^j}{r_i^j}\right]. \tag{B.4}$$

Log-linearizing equations (A.3)-(A.5) in the case of $\beta_i^j = 1$, we obtain:

$$\tilde{P}_i^j \quad = \quad \left[1 - \mu_i^j\right] [\tilde{s}_i - \tilde{w}_i] + \tilde{w}_i - \tilde{A}_i^j + \tilde{\pi}_{ii}^j. \tag{B.5}$$

Substituting back in equation (B.4) and solving for $\tilde{s}_i - \tilde{w}_i$ gives the expression in the text.

Derivation of equations (16) and (17)

The expression in the text follows from noting that the consumer price index can be written as $\tilde{P_i^C} = \sum \phi_i^j \tilde{P}_i^j$, and using expression (B.5).

Derivation of equations (18) and (19)

We start by deriving equation (18). Log-linearizing equation (A.27) and combining with (B.3) we obtain:

$$\tilde{v}_i^j \quad = \quad [1-\rho] \left[\tilde{P}_i^j - \sum_j v_i^j \tilde{P}_i^j\right] + \frac{\tilde{\lambda}_i^j}{r_i^j} - \sum_l \frac{v_i^l}{r_i^l} \tilde{\lambda}_i^l.$$

Substituting with equation (B.5) we obtain equation (18) in the text.

To obtain equation (19), define sectorial employment by $E_i^j \equiv L_i^j + H_i^j$ and note that

$$\omega_{E,i}^j \quad = \quad \tilde{E}_i^j - \sum_l \omega_{E,i}^l \tilde{E}_i^l. \tag{B.6}$$

Log-linearizing sectorial employment we obtain:

$$\tilde{E}_i^j \quad = \frac{L_i^j}{L_i + H_i^j} \tilde{L}_i^j + \frac{H_i^j}{L_i^j + H_i^j} \tilde{H}_i^j \quad ,$$

which can be written as:

$$\tilde{E}_i^j \quad = \frac{L_i^j}{L_i^j + H_i^j} \left[\tilde{L}_i^j + \tilde{w}_i - \tilde{w}_i - \tilde{v}_i^j\right] + \frac{H_i^j}{L_i^j + H_i^j} \left[\tilde{H}_i^j + \tilde{s}_i - \tilde{s}_i - \tilde{v}_i^j\right] + \tilde{v}_i^j \quad .$$

or:

$$\tilde{E}_i^j = \frac{L_i^j}{L_i^j+H_i^j}\left[\tilde{\mu}_i^j - \tilde{w}_i\right] + \frac{H_i^j}{L_i^j+H_i^j}\left[\widetilde{\left[1-\mu_i^j\right]} - \tilde{s}_i\right] + \tilde{v}_i^j \quad . \tag{B.7}$$

Combining equations (B.7), (18), (B.2), noting that $\widetilde{\left[1-\mu_i^j\right]} = -\frac{\mu_i^j}{1-\mu_i^j}\tilde{\mu}_i^j$, and substituting into equation (B.6) gives expression (19) in the text.

Appendix C Non-homothetic preferences

This section characterizes the equilibrium of our model with the generalized CES consumption aggregator given by:

$$\sum_j \left[\bar{\phi}_i^j\right]^{\frac{1}{\rho}} C_i^{\frac{\epsilon^j-\rho}{\rho}} \left[C_i^j\right]^{\frac{\rho-1}{\rho}} = 1. \tag{C.1}$$

Note that in the special case of $\epsilon^j = 1$, for all j, the aggregator collapses to the standard CES aggregator in equation (1), in which there are no income effects. Under these preferences the equilibrium conditions are given by equations (7), (A.2)-(A.11) and by the sectoral consumption demands associated with (C.1), given by:

$$P_i^j C_i^j = \bar{\phi}_i^j \left[\frac{P_i^j}{P_i}\right]^{1-\rho} P_i C_i^{\epsilon^j}. \tag{C.2}$$

This implies that equation A.1 is now written as:

$$\frac{P_i^j C_i^j}{R_i} = \bar{\phi}_i^j \left[\frac{P_i^j}{P_i}\right]^{1-\rho} C_i^{\epsilon^j} \left[4 - \sum_{j=1}^{3} \lambda_i^j - \frac{\sum_j P_i^j X_i^j}{R_i}\right], \tag{C.3}$$

We use the hat algebra in the system of equations above to conduct our alternative parameterization exercise in Section (5.3). To give the non-homothetic model the biggest chance to have a differential impact on the skill premium, we calibrate the income elasticities ϵ^j using the values reported in the first column of Table A7 (this is the specification that gives the largest differences in the income elasticities across sectors). Our results in the main body show that even in this parameterization, accounting for non-homotheticities has small effects on our quantitative results.

Appendix D The factor content of trade

This section shows how the skill premium can be written as a function of the factor content of trade in our model. We start by writing equations (A.7) and (A.8), summing over j, as:

$$s_i H_i = \sum_j \left[1 - \mu_i^j\right] \beta_i^j R_i^j = \sum_j \left[1 - \mu_i^j\right] \beta_i^j Y_i^j + s_i FCT_i^H$$
$$w_i L_i = \sum_j \mu_i^j \beta_i^j R_i^j = \sum_j \mu_i^j \beta_i^j Y_i^j + w_i FCT_i^L,$$

where we defined the skilled- and unskilled-labor content of trade as $FCT_i^H \equiv \frac{1}{s_i} \sum_j \left(1 - \mu_i^j\right) \beta_i^j \left[R_i^j - Y_i^j\right]$ and $FCT_i^L \equiv \frac{1}{w_i} \sum_j \mu_i^j \beta_i^j \left[R_i^j - Y_i^j\right]$. Solving for the wages s_i and w_i and taking ratios we can write the skill premium as:

$$\frac{s_i}{w_i} = \frac{L_i - FCT_i^L}{H_i - FCT_i^H} \times \frac{\sum_j \left(1 - \mu_i^j\right) \beta_i^j Y_i^j}{\sum_j \mu_i^j \beta_i^j Y_i^j}.$$

Deardorff and Staiger (1988) and Burstein and Vogel (2011) show that if factor shares μ_i^j do not change across equilibria, and sectoral absorption shares are a constant fraction of total absorption $Y_i^j = \bar{\kappa}_i^j Y_i$, then the term $\sum_j \left(1 - \mu_i^j\right) \beta_i^j Y_i^j / \sum_j \mu_i^j \beta_i^j Y_i^j$ is constant. This implies that changes in the skill premium are determined by changes in FCT_i^L and FCT_i^H.

We next show how we measure changes in the FCT in the model, starting with the expression above in changes:

$$\frac{s_i}{w_i} \frac{\widehat{s_i}}{w_i} = \frac{L \hat{L}}{H \hat{H}} \frac{1 - \frac{FCT_i^L \widehat{FCT_i^L}}{L \hat{L}}}{1 - \frac{FCT_i^H \widehat{FCT_i^H}}{H \hat{H}}} \Phi_i \hat{\Phi}_i$$

, where Φ_i is defined as in the main body of the paper. We next impose that $\hat{\Phi}_i = 1$, to obtain

$$\frac{\widehat{s_i}}{w_i}^{FC} = \frac{\left(1 - \frac{FCT_i^L \widehat{FCT_i^L}}{L \hat{L}}\right) / \left(1 - \frac{FCT_i^L}{L}\right)}{\left(1 - \frac{FCT_i^H \widehat{FCT_i^H}}{H \hat{H}}\right) / \left(1 - \frac{FCT_i^H}{H}\right)}.$$

Now, since

$$\frac{FCT_i^L}{L} = \sum_j \frac{L_i^j}{L} \left[1 - \frac{1}{\lambda_i^j}\right] = 1 - \sum_j \frac{L_i^j}{L} \frac{1}{\lambda_i^j}$$

and

$$\frac{FCT_i^L}{L} \frac{\widehat{FCT_i^L}}{L} = \sum_j \frac{L_i^j}{L} \left[\frac{\hat{L}_i^j}{L}\right] \left[1 - \frac{1}{\lambda_i^j \hat{\lambda}_i^j}\right] = \left[1 - \sum_j \frac{L_i^j}{L} \left[\frac{\hat{L}_i^j}{L}\right] \frac{1}{\lambda_i^j \hat{\lambda}_i^j}\right],$$

we finally obtain

$$\frac{\widehat{s_i}^{FC}}{w_i} = \frac{\left(\sum_j \frac{H_i^j}{H}\frac{1}{\lambda_i^j}\right) \times \left(\sum_j \frac{L_i^j}{L}\left[\frac{\hat{L_i^j}}{L}\right]\frac{1}{\lambda_i^j\hat{\lambda_i^j}}\right)}{\left(\sum_j \frac{L_i^j}{L}\frac{1}{\lambda_i^j}\right) \times \left(\sum_j \frac{H_i^j}{H}\left[\frac{\hat{H_i^j}}{H}\right]\frac{1}{\lambda_i^j\hat{\lambda_i^j}}\right)}.$$

Appendix E Data and Parameterization

This section first describes our data sources and then explains how these are combined to parameterize our model.

E.1 Data Sources

Our main sample combines two data sources. We use the IO tables from the World Input Output Database (WIOD) to construct changes in domestic expenditure shares, net export to aggregate revenue ratios, intermediate input shares β^j and α^{ij}, and sectorial value-added shares. We use the Socio Economic Accounts included in the WIOD (SEA) to calculate baseline employment shares, H_i^j/H_i and L_i^j/L_i, aggregate payments to skilled relative to unskilled labor, s_iH_i/w_iL_i, and aggregate employment shares.

In Section 5.2.2, to extend our sample backward in time, we also bring in data on IO tables from the OECD IO tables (1995 version) and data on employment and labor compensation from KLEMS. We use these data in the same way as described in the previous paragraph.

Table A1 provides our own concordance to aggregate industries across datasets and levels of aggregation, and the trade elasticity in each industry and sector. We use different levels of aggregation in the paper, depending on the calculation. The column "Category" lists our most disaggregated industries, which correspond with the index k in the paper. The next column, "One Digit", aggregates the sector G industries that correspond to manufacturing; we use this classification for illustration purposes in Figures 1 and 3. Finally, the column "Sector" classifies industries into goods, unskilled and skilled labor intensive services.

In the following sub-sections, we describe the datasets and their use in detail.

World Input-Output Tables For each year between 1995 and 2007, we observe the input output tables and bilateral trade shares from the World Input-Output Tables Database (WIOD), with industries disaggregated according to ISIC rev 3. These data are available at http://www.wiod.org/new_site/database/niots.htm. Column "WIOD code" in Table A1 lists the original industrial classification of the dataset and how we use it to compute industry and sector aggregates. We exclude "Private Households with Employed Persons (P)" from the calculations.

The WIOD also extends the labor and compensation data from KLEMS in its own Socio Economic Accounts module. For each year, we observe the share of total hours employed in each industry, corresponding to the hours of each skill type in {Low, Medium, High}, where "High" includes workers with a college degree. We also observe, for each industry, the total hours employed, which allows us to calculate, for each labor type, the total hours of employment. We also observe total compensation for {Low, Medium, High} skills, which we use to compute the ratio sH/wL.

OECD Input-Output Tables We download the data from http://www.oecd.org/trade/input-outputtables.htm, 1995 edition (ISIC Rev 2). Coverage is sparse until the 1990s. The earliest observations we use are for the year 1977, but the beginning of the sample varies by country. Column "OECD Description" in Table A1 lists all disaggregated industries in this dataset and shows how we aggregate them into the sectors and industries of our model. We exclude the categories "Other producers" , "Statistical discrepancies", and "Private household activities" from the analysis.

One limitation of this dataset is that Education and Health are aggregated into the category "Community, social & personal services." Since we interpret Education as skilled labor intensive and Other services as unskilled labor intensive, we split this category into sectors S and F according to the 1995 share of Education in Education + Other Services for the US, 0.75, from WIOD.

KLEMS We downloaded data at http://www.euklems.net/, March 08 release: (i) Labour input files and (ii) Country basic files. For Canada we repeat the same steps, but we use separate files (also available in the KLEMS webpage). KLEMS provides yearly data from 1970 to 2005, disaggregated by ISIC Rev. 3 industries. We treat these data just as the WIOD SEA data. Finally, we also obtain data on total revenue and absorption. Column "KLEMS Code" in Table A1 relates the original industrial classification in KLEMS to ours. We drop Private Households with Employed Persons (P).

E.2 Data construction

In this section, we discuss details on data construction not contained in the main body of the paper.

E.2.1 Sample

Table A2 reports the countries in our main sample, all of them starting in 1995 and ending in 2007. For Section 5.2.2, we strived to maximize coverage across countries and time. The resulting sample is the largest possible panel for which we could obtain data on both employment shares and input-output data. We provide next the details of the construction of our variables and the splicing across datasets.

E.2.2 Constructing sectoral changes in trade shares and net exports to total revenue ratios

Table A1 shows the correspondence between the classification in the OECD IO data and the classification in the WIOD data. The table also reports the classification we constructed to bridge the different levels of aggregation of these two classifications (which correspond to k in our model), and how we associated industries to the trade elasticities from Caliendo and Parro (2015). The calculation of the sectoral trade shares requires choosing a single elasticity for the "Auto and Other Transport" and "Electrical, Communication and Medical", and "Basic Metals and Metal Products" categories. In these cases, we chose the average elasticity.

E.2.3 Share of intermediate inputs in total revenue $\left(1-\beta^j\right)$ and share of each sector in the intermediate input bundle $\left(\alpha^{lj}\right)$

For each country and sector, we calculate at the beginning of the sample,

$$1-\beta^j = \frac{\text{Sector } j\text{'s Total Intermediate Use}}{\text{Sector } j's \text{ Total Intermediate Use} + \text{Sector } j's \text{ Value Added}},$$

where Sector $j's$ Total Intermediate Use is measured as Total Intermediate Use of S, G, and F (Imported and Domestic). Sector $j's$ value-added is measured as Sector $j's$ Total Output less **all** inputs purchased by aggregate sector j.

We measure the share of sector l in the intermediate input bundle used in sector j, which we denote by α^{lj}, as

$$\alpha^{lj} = \frac{\text{Sector } j\text{'s Total Intermediate Use of } l}{\text{Sector } j\text{'s Total Intermediate Use}}$$

Appendix F Estimating the elasticity of substitution across sectors

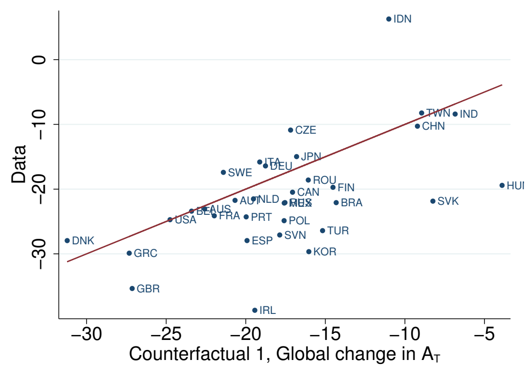
This section provides details for our estimation of the elasticity ρ in Section 4. Equation (20) in the paper follows from taking ratios and logs in the demand functions in equation (C.2) for sectors j and j'. Equation (21) follows from aggregating the input demand functions across producers and industries,

$$P_i^l \sum_k \int x_{in}^{lj}(\omega,k)\, d\omega \quad = P_i^l x_{in}^{lj} = \quad \bar{\alpha}_i^{lj} \left[\frac{b_i^j}{P_i^l}\right]^{\rho-1} \left[1-\beta_i^j\right] R_i^j,$$

and then taking logs and differences across inputs l.

To estimate equations (20) and (21), we measure expenditure shares in a way that is consistent with our model, which requires measuring how *gross output* of each sector, valued at *producer prices* (i.e. before distribution margins are applied), is used in the economy. We measure expenditure shares at producer prices using the US Input-Output Use Tables for every year in the 1977-2012 period. In particular, we group the sectors in the Input-Output Tables into the sectors of our model following the definitions from Appendix E and compute the share of each sector in total consumption expenditures and in total intermediate inputs used by the goods, unskilled and skilled intensive service sectors. We

Figure A.1: Changes in goods employment shares (Counterfactual 1 with global productivity growth)



Notes: The x-axis shows the percent change in the sector's share in employment in a version of Counterfactual 1 that includes productivity growth. The y-axis reports the percent change in the sector's share in employment between 1995-2007 in the WIOD data.

construct sector specific price indexes from the Chain-Type Price Indexes for Gross Output by NAICS 2-digit Industry published by the BEA. We aggregate these prices using the yearly expenditure shares of the US Input-Output Tables to construct chain-weighted price indexes for the three broad sectors in our model. We compute aggregate consumption expenditures per capita, C_i, from the Input-Output data Chain-Type Price index data. In particular, we aggregate final private consumption at producer prices and aggregate the Chain-Type Price Indexes using the consumption expenditure shares to construct an aggregate price index for consumption at producers prices that is consistent with our other data. We compute $C_{i,t}$ as final consumption divided by the price index, divided by population.

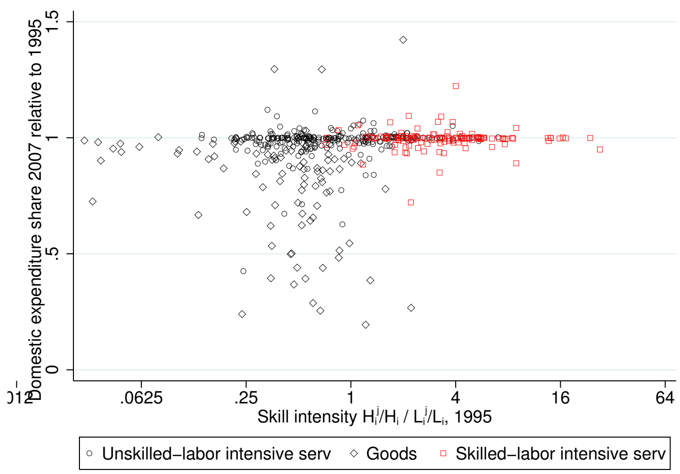
Appendix G Global productivity growth in the goods sector

In this counterfactual we augment Counterfactual 1 with global productivity growth. That is, in addition to declines in trade costs obtained from (22), we assign $\hat{A}_i^G = \hat{A}^G$ to every country i, and we calibrate $\hat{A}^G$ such that the model exactly replicates the decline in the US employment share in the goods sector between 1995 and 2007.

Figure A.1 compares the results of this counterfactual to the data, with a 45-degree line as a reference. The figure shows that once we allow for global productivity change to account for the changes in good employment in the US, then the counterfactual can account quite well for the decline in the share of employment in the goods sector in most countries.

Appendix H Tables and Figures

Figure A.2: Skill and trade intensities across industries by countries



Notes: Each point is a country, one-digit industry pair. 'Domestic expenditure shares 2007 relative to 1995' refers to $\pi^j_{ii,2007}/\pi^j_{ii,1995}$ defined in Figure 2. Skill intensities are defined as in Figure 3. Source: WIOD.

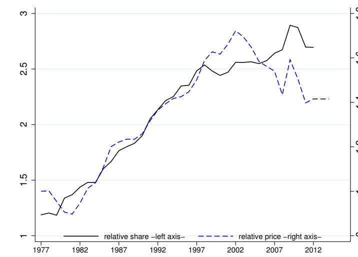
Figure A.3: Intermediate use of inputs from the goods-producing sector, by industries and countries

Notes: Each point is a country-industry pair. Share of goods inputs in production is the share of agriculture, mining and manufacturing inputs in total production of the sector. Skill intensities are defined as in Figure 3. Source: WIOD.

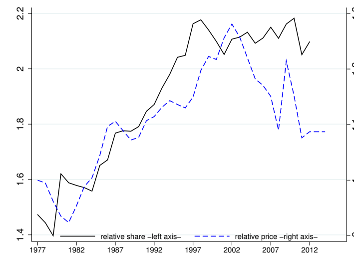
Figure A.4: Relative prices vs. relative expenditure shares

(a) Consumption bundle

Skilled-labor intensive services vs goods

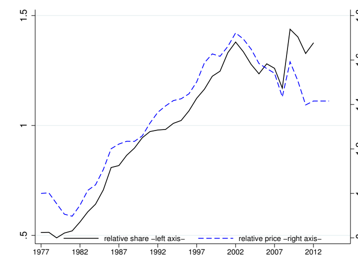


Unskilled-labor intensive vs goods

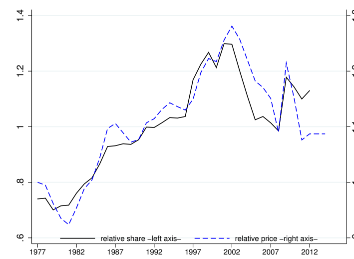


(b) Input bundle used in the unskilled labor intensive service sector

Skilled-labor intensive services vs goods

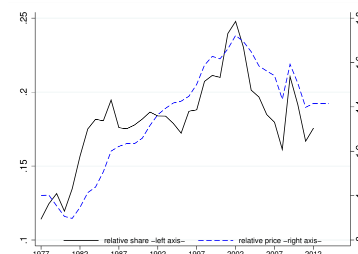


Unskilled-labor intensive vs goods

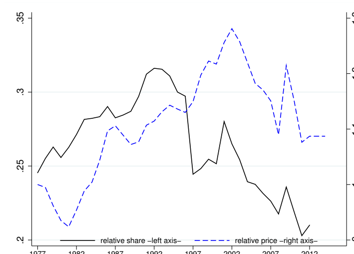


(c) Input bundle used in the goods sector

Skilled-labor intensive services vs goods

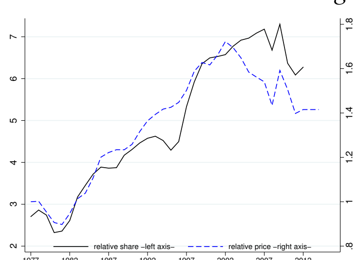


Unskilled-labor intensive vs goods

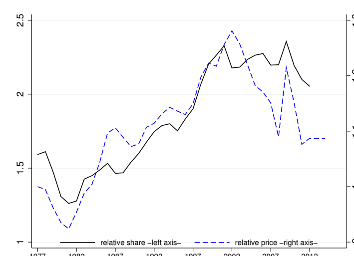


(d) Input bundle used in the skilled labor intensive service sector

Skilled-labor intensive services vs goods



Unskilled-labor intensive services vs goods

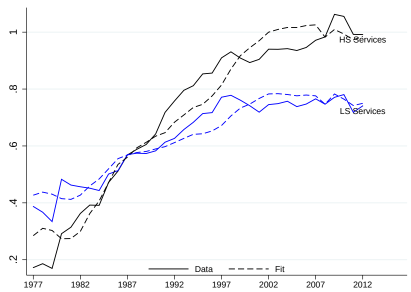


Notes: The figures plots the change in sectoral relative prices, and relative expenditures for (a) consumption, and total inputs in (b) the unskilled-labor intensive service sector, (c) the goods sector, and (d) the skilled- labor service sector. Source: Authors calculations based on data from the USE Input-Output Tables for the US, and the Chain-Type Price Indexes for Gross Output published by the BEA.

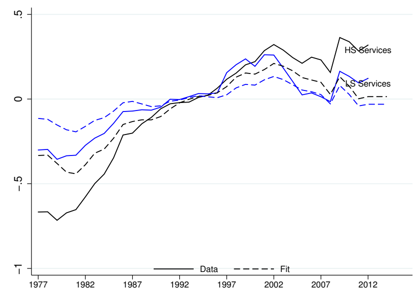
Figure A.5: Actual vs. predicted expenditure shares

(a) Independent estimation

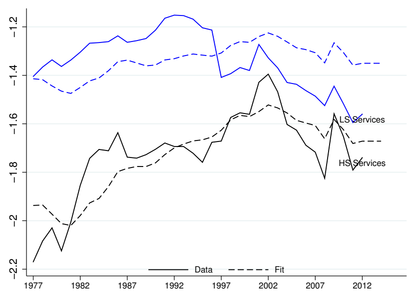
Consumption Bundle



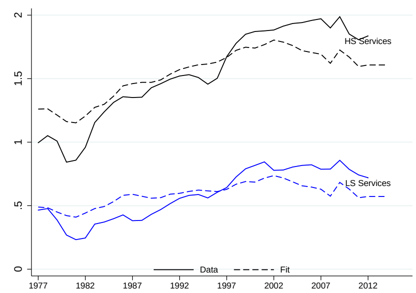
Unskilled-labor intensive services input bundle



Goods input bundle

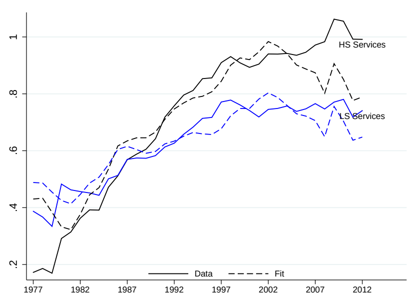


Skilled-labor intensive services input bundle

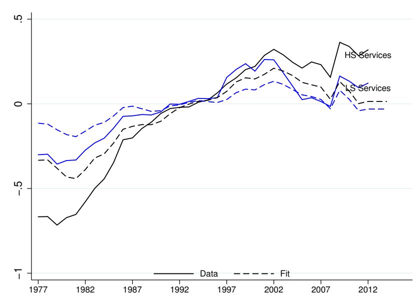


(b) Joint estimation

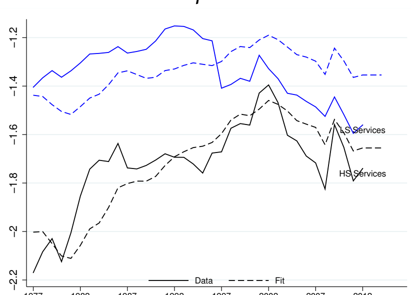
Consumption Bundle



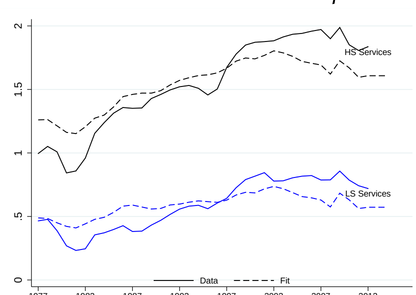
Unskilled-labor intensive services input bundle



Goods input bundle



Skilled-labor intensive services input bundle



Notes: The figures report the expenditure shares in the data an the fitted values obtained from estimating equations (20) and (21).

Table A1: Concordance across datasets and sectoral aggregation

Category	One Digit	Sector	OECD Description	WIOD code	KLEMS code	IPUMS	CP Elasticity	Agg. Elasticity
Agriculture	AtB	G	Agriculture, forestry & fishing	AtB	AtB	10	8.11	8.11
Mining	C	G	Mining & quarrying	C	C	20	15.72	15.72
Food	D	G	Food, beverages & tobacco	15t16	15t16	30	2.55	2.55
Textile	D	G	Textiles, apparel & leather	19	17t19	30	5.56	5.56
Textile	D	G	Textiles, apparel & leather	17t18	17t19	30	5.56	5.56
Wood	D	G	Wood products & furniture	20	20	30	10.83	10.83
Paper	D	G	Paper, paper products & printing	21t22	21t22	30	9.07	9.07
Chemicals	D	G	Industrial chemicals	24	24	30	4.75	4.75
Chemicals	D	G	Drugs & medicines			30	4.75	4.75
Petroleum	D	G	Petroleum & coal products	23	23	30	51.08	51.08
Plastic	D	G	Rubber & plastic products	25	25	30	1.66	1.66
Minerals	D	G	Non-metallic mineral products	26	26	30	2.76	2.76
Basic metals and Metal Products	D	G	Iron & steel	27t28	27t28	30	7.99	6.76
Basic metals and Metal Products	D	G	Non-ferrous metals	27t28	27t28	30	7.99	6.76
Basic metals and Metal Products	D	G	Metal products			30	4.3	6.76
Machinery nec	D	G	Non-electrical machinery	29	29	30	1.52	1.52
Electrical, Communication, Medical	D	G	Office & computing machinery			30	12.79	10.11
Electrical, Communication, Medical	D	G	Electrical apparatus, nec	30t33	30t33	30	10.6	10.11
Electrical, Communication, Medical	D	G	Radio, TV & communication equipment			30	7.07	10.11
Auto and Other Transport	D	G	Shipbuilding & repairing	34t35	34t35	30	.37	.53
Auto and Other Transport	D	G	Other transport	34t35	34t35	30	.37	.53
Auto and Other Transport	D	G	Motor vehicles			30	1.01	.53
Auto and Other Transport	D	G	Aircraft	34t35	34t35	30	.37	.53
Electrical, Communication, Medical	D	G	Professional goods			30	9.98	10.11
Other	D	G	Other manufacturing	36t37	36t37	30	5	5
Electricity	E	S	Electricity, gas & water	E	E	40		
Construction	F	S	Construction	F	F	50		
Wholesale and Retail	G	S	Wholesale & retail trade	52	52	60		
Wholesale and Retail	G	S	Wholesale & retail trade	51	51	60		
Wholesale and Retail	G	S	Wholesale & retail trade	50	50	60		
Hotels and Restaurants	H	S	Restaurants & hotels	H	H	70		
Transport and Communication	I	S	Transport & storage	62	I	80		
Transport and Communication	I	S	Transport & storage	63	I	80		
Transport and Communication	I	S	Transport & storage	61	I	80		
Transport and Communication	I	S	Transport & storage	60	I	80		
Transport and Communication	I	S	Communication	64	I	80		
Finance	J	F	Finance & insurance	J	J	90		
Real Estate	K	F	Real estate & business services	71t74	71t74	111		
Real Estate	K	F	Real estate & business services	70	70	111		
Health	N	F	Community, social & personal services	N	N	113		
Other Services	O	S	Community, social & personal services	O	O	114		
Education	M	F	Community, social & personal services	M	M	112		
Public Admin	L	S	Producers of government services	L	L	100		
Private Households	P	S	Other producers	P	P	120		

Table A2: Changes in goods and service imports relative to total GDP

Country	Goods	Services	Country	Goods	Services
Australia	1.23	1.02	Italy	1.33	1.47
Austria	1.51	1.25	Japan	2.16	2.05
Belgium	1.13	1.29	Korea	1.32	1.83
Brazil	1.35	1.43	Mexico	1.24	0.71
Canada	0.98	0.91	Netherlands	0.97	1.26
China	1.39	1.72	Poland	2.12	1.90
Czech Republic	1.55	0.92	Portugal	1.22	1.04
Germany	1.73	1.91	Romania	1.56	1.18
Denmark	1.15	3.18	Russia	1.07	0.68
Spain	1.44	2.00	Rest of the World	1.22	1.43
Finland	1.42	1.30	Slovakia	1.69	0.99
France	1.33	1.18	Slovenia	1.29	1.71
Great Britain	0.93	1.67	Sweden	1.26	1.59
Greece	1.39	2.57	Turkey	1.62	1.74
Hungary	1.99	1.29	Taiwan	1.47	1.23
Indonesia	1.05	1.18	United States	1.35	1.49
India	2.15	1.03	World	1.44	1.60
Ireland	0.75	2.23	Average	1.39	1.48

Notes: This table reports imports to total GDP in 2007 relative to 1995 using data from the WIOD. The classification of WIOD industries into Goods and Services is detailed in Section 4.

Table A3: Sectoral changes in domestic-expenditure shares

Country	Goods	Services	Country	Goods	Services
Australia	0.88	1.00	Italy	0.89	0.99
Austria	0.66	0.99	Japan	0.90	0.99
Belgium	0.76	0.98	Korea	0.94	0.98
Brazil	0.97	0.99	Mexico	0.87	1.01
Canada	0.97	1.01	Netherlands	0.81	0.98
China	0.97	0.99	Poland	0.72	0.98
Czech Republic	0.72	1.01	Portugal	0.77	1.00
Germany	0.76	0.98	Romania	0.74	1.00
Denmark	0.83	0.92	Russia	0.97	1.01
Spain	0.81	0.98	Rest of the World	0.89	0.96
Finland	0.84	0.99	Slovakia	0.53	1.00
France	0.85	1.00	Slovenia	0.64	0.97
Great Britain	0.80	0.99	Sweden	0.83	0.97
Greece	0.75	0.96	Turkey	0.86	1.00
Hungary	0.54	0.98	Taiwan	0.78	0.99
Indonesia	0.96	1.00	United States	0.90	1.00
India	0.88	1.00	World	0.90	0.98
Ireland	1.04	0.87	Average	0.82	0.98

Notes: This Table reports the ratio of the 2007 domestic expenditure shares relative to those in 1995 and 2007. Domestic expenditure shares are computed as the ratio of production minus exports to production plus imports minus exports in each sector using data from the WIOD. The grouping of WIOD industries into Goods and Services is detailed in Section 4.

Table A4: Observed changes in domestic expenditure shares and net exports to aggregate revenue ratios

Country	Weighted change in domestic expenditure share	Change in Sectoral Net Exports to Aggregate Revenues ratio
Australia	0.93	1.01
Austria	0.80	0.97
Belgium	0.90	1.01
Brazil	1.00	0.98
Canada	0.97	1.01
China	1.00	0.98
Czech Republic	0.91	0.95
Germany	0.91	0.97
Denmark	0.87	1.02
Spain	0.91	1.03
Finland	0.92	1.01
France	0.91	1.01
Great Britain	0.89	1.03
Greece	0.88	1.05
Hungary	0.72	0.97
Indonesia	0.99	0.97
India	0.96	1.03
Ireland	0.95	1.04
Italy	0.95	1.01
Japan	0.97	1.00
Korea	1.00	0.98
Mexico	0.92	1.01
Netherlands	0.91	0.99
Poland	0.85	1.02
Portugal	0.84	1.02
Romania	0.87	1.07
Russia	0.94	1.00
Slovakia	0.83	0.99
Slovenia	0.66	1.00
Sweden	0.95	1.01
Turkey	0.76	1.01
Taiwan	0.91	0.97
United States	0.94	1.02
Average	**0.90**	**1.00**

Notes: The weighted change in domestic expenditure shares is defined as $\hat{\pi}_{ii} \equiv \prod_{k=1}^{K_j} \hat{\pi}_{ii}^{j}(k)^{\sigma_i^j(k)\theta^j(k)}$. The change in the revenue to absorption ratio is given by $\hat{\lambda}_i^T$.

Table A5: Sectoral factor intensities

Country	H^S/H	L^S/L	Difference	H^G/H	L^G/L	Difference	H^F/H	L^F/L	Difference
Australia	0.29	0.53	-0.24	0.11	0.23	-0.13	0.60	0.24	0.37
Austria	0.31	0.50	-0.20	0.17	0.34	-0.17	0.52	0.15	0.37
Belgium	0.29	0.51	-0.22	0.15	0.23	-0.08	0.57	0.26	0.31
Brazil	0.32	0.49	-0.17	0.13	0.40	-0.27	0.55	0.11	0.44
Canada	0.43	0.57	-0.14	0.11	0.24	-0.13	0.45	0.19	0.26
China	0.61	0.31	0.29	0.14	0.64	-0.50	0.25	0.04	0.21
Czech Republic	0.34	0.48	-0.14	0.18	0.38	-0.20	0.48	0.15	0.34
Germany	0.38	0.51	-0.13	0.22	0.28	-0.06	0.40	0.21	0.19
Denmark	0.30	0.48	-0.18	0.12	0.27	-0.15	0.58	0.25	0.33
Spain	0.39	0.57	-0.19	0.14	0.31	-0.17	0.47	0.11	0.36
Finland	0.38	0.44	-0.06	0.19	0.35	-0.16	0.43	0.21	0.22
France	0.28	0.50	-0.23	0.14	0.25	-0.12	0.59	0.24	0.34
Great Britain	0.30	0.53	-0.23	0.12	0.20	-0.08	0.58	0.27	0.31
Greece	0.44	0.56	-0.12	0.09	0.37	-0.29	0.48	0.07	0.41
Hungary	0.33	0.46	-0.13	0.19	0.41	-0.22	0.49	0.13	0.35
Indonesia	0.53	0.41	0.11	0.11	0.50	-0.39	0.36	0.09	0.28
India	0.38	0.23	0.15	0.27	0.75	-0.48	0.35	0.02	0.33
Ireland	0.28	0.46	-0.18	0.18	0.39	-0.21	0.54	0.15	0.39
Italy	0.24	0.50	-0.26	0.11	0.33	-0.23	0.65	0.16	0.49
Japan	0.48	0.54	-0.06	0.20	0.29	-0.09	0.32	0.17	0.15
Korea	0.51	0.49	0.02	0.27	0.40	-0.13	0.22	0.11	0.11
Mexico	0.52	0.45	0.07	0.17	0.44	-0.27	0.30	0.11	0.20
Netherlands	0.30	0.51	-0.21	0.09	0.24	-0.15	0.61	0.25	0.36
Poland	0.32	0.32	-0.01	0.19	0.57	-0.38	0.49	0.11	0.38
Portugal	0.29	0.48	-0.20	0.08	0.41	-0.33	0.63	0.11	0.53
Romania	0.19	0.27	-0.07	0.15	0.65	-0.51	0.66	0.08	0.58
Russia	0.21	0.33	-0.12	0.22	0.51	-0.29	0.57	0.16	0.41
Slovakia	0.29	0.43	-0.14	0.19	0.38	-0.20	0.52	0.18	0.34
Slovenia	0.34	0.35	-0.01	0.21	0.53	-0.33	0.46	0.12	0.34
Sweden	0.31	0.45	-0.14	0.11	0.28	-0.17	0.59	0.27	0.31
Turkey	0.56	0.31	0.24	0.11	0.63	-0.52	0.33	0.06	0.27
Taiwan	0.51	0.49	0.02	0.18	0.42	-0.24	0.31	0.08	0.23
United States	0.41	0.58	-0.16	0.15	0.21	-0.06	0.44	0.22	0.22
Average	**0.36**	**0.46**	**-0.09**	**0.16**	**0.39**	**-0.23**	**0.48**	**0.15**	**0.32**

Notes: H^j/H measures the fraction of total skilled labor employed in sector $j = S, G, F$. L^J/L is defined analogously. Difference measures $H^j/H - L^j/L$ for each sector j.

Table A6: Intermediate input shares

Country	β_i^S	β_i^G	β_i^F	α_i^{SS}	α_i^{GS}	α_i^{FS}	α_i^{SG}	α_i^{GG}	α_i^{FG}	α_i^{SF}	α_i^{GF}	α_i^{FF}
Australia	0.46	0.41	0.63	0.40	0.31	0.29	0.32	0.57	0.11	0.34	0.11	0.55
Austria	0.61	0.42	0.68	0.43	0.31	0.26	0.27	0.60	0.13	0.36	0.17	0.48
Belgium	0.51	0.33	0.64	0.52	0.22	0.26	0.28	0.63	0.09	0.24	0.16	0.60
Brazil	0.65	0.41	0.73	0.37	0.35	0.27	0.21	0.69	0.10	0.39	0.23	0.37
Canada	0.59	0.40	0.73	0.39	0.32	0.28	0.26	0.65	0.09	0.46	0.12	0.42
China	0.43	0.35	0.57	0.25	0.65	0.10	0.15	0.81	0.05	0.28	0.45	0.27
Czech Republic	0.43	0.32	0.54	0.51	0.33	0.16	0.24	0.69	0.07	0.37	0.29	0.34
Germany	0.59	0.41	0.70	0.39	0.31	0.30	0.24	0.59	0.17	0.26	0.12	0.62
Denmark	0.56	0.41	0.72	0.49	0.27	0.24	0.30	0.60	0.10	0.42	0.16	0.42
Spain	0.54	0.35	0.69	0.44	0.36	0.20	0.26	0.65	0.09	0.41	0.18	0.41
Finland	0.56	0.38	0.68	0.39	0.40	0.21	0.24	0.65	0.10	0.43	0.26	0.31
France	0.56	0.34	0.68	0.47	0.24	0.29	0.26	0.58	0.15	0.28	0.13	0.59
Great Britain	0.52	0.42	0.66	0.45	0.29	0.26	0.25	0.63	0.13	0.34	0.17	0.49
Greece	0.61	0.39	0.77	0.35	0.45	0.21	0.22	0.70	0.08	0.45	0.15	0.40
Hungary	0.51	0.33	0.66	0.35	0.38	0.27	0.20	0.71	0.09	0.29	0.30	0.42
Indonesia	0.55	0.49	0.72	0.33	0.55	0.12	0.17	0.78	0.06	0.33	0.24	0.43
India	0.60	0.41	0.79	0.35	0.53	0.12	0.25	0.69	0.06	0.34	0.39	0.27
Ireland	0.48	0.37	0.64	0.52	0.29	0.20	0.23	0.64	0.14	0.29	0.15	0.57
Italy	0.53	0.35	0.74	0.44	0.33	0.23	0.29	0.63	0.08	0.29	0.16	0.56
Japan	0.57	0.37	0.70	0.40	0.35	0.25	0.23	0.69	0.08	0.39	0.20	0.42
Korea	0.55	0.33	0.70	0.24	0.45	0.31	0.10	0.81	0.08	0.36	0.24	0.39
Mexico	0.64	0.41	0.79	0.29	0.41	0.30	0.17	0.74	0.09	0.23	0.26	0.51
Netherlands	0.53	0.38	0.65	0.43	0.27	0.30	0.27	0.57	0.16	0.32	0.15	0.53
Poland	0.55	0.39	0.66	0.48	0.41	0.11	0.26	0.67	0.07	0.38	0.22	0.40
Portugal	0.53	0.35	0.68	0.46	0.33	0.21	0.22	0.69	0.10	0.33	0.20	0.47
Romania	0.48	0.39	0.69	0.38	0.51	0.11	0.19	0.72	0.08	0.29	0.53	0.18
Russia	0.62	0.43	0.58	0.50	0.43	0.07	0.33	0.65	0.02	0.51	0.29	0.20
Slovakia	0.42	0.33	0.64	0.53	0.34	0.13	0.27	0.67	0.06	0.39	0.27	0.35
Slovenia	0.49	0.38	0.67	0.45	0.33	0.23	0.22	0.69	0.09	0.30	0.29	0.41
Sweden	0.53	0.40	0.64	0.44	0.28	0.28	0.27	0.61	0.12	0.39	0.17	0.44
Turkey	0.68	0.49	0.72	0.27	0.54	0.19	0.27	0.65	0.08	0.33	0.40	0.27
Taiwan	0.58	0.31	0.73	0.29	0.42	0.29	0.18	0.74	0.08	0.18	0.21	0.61
United States	0.62	0.35	0.66	0.36	0.32	0.32	0.19	0.68	0.13	0.25	0.14	0.61
Average	**0.55**	**0.38**	**0.68**	**0.40**	**0.37**	**0.22**	**0.24**	**0.67**	**0.09**	**0.34**	**0.23**	**0.43**

Notes: We calculate β_i^j from Input-Output data as the share of value-added in sector j's total revenues. The input share α_i^{lj} is the share of expenditure in inputs produced in sector l, as a fraction of total input expenditure in sector j.

Table A7: Generalized CES estimates

	Consumption	Unskilled Services	Skilled Services	Goods	Joint Estimation
ρ	0.597***	0.000	0.237*	0.000	0.000
	(0.099)	(.)	(0.102)	(.)	(.)
$\epsilon^F - \epsilon^G$	0.831***				0.017
	(0.092)				(0.015)
$\epsilon^S - \epsilon^G$	0.429***				0.113***
	(0.037)				(0.017)
# Years	36	36	36	36	36

Notes: The table reports the results of estimating equations (20) and (21). 'Consumption', 'Unskilled Services', 'Skilled Services' and 'Goods' correspond to the results of estimating equations (20), and (21) for $l = S, G, F$ respectively. The last column reports the results to estimating the 4 equations simultaneously.

Table A8: Changes in value added and employment shares: Counterfactual 1 vs. Data

	Value Added						Employment					
	Counterfactual 1			Data			Counterfactual 1			Data		
Country	Unskilled services	Goods	Skilled services	Unskilled services	Goods	Skilled services	Unskilled services	Goods	Skilled services	Unskilled services	Goods	Skilled services
Australia	1.71	-9.72	3.71	-6.04	-13.03	15.85	1.97	-9.47	3.69	2.25	-23.06	13.32
Austria	4.15	-10.19	5.29	-8.82	2.22	11.81	4.49	-9.89	5.23	-1.34	-21.74	38.66
Belgium	3.28	-14.36	4.71	0.35	-17.30	10.73	3.48	-14.20	4.72	-5.30	-23.40	25.23
Brazil	1.76	-4.66	2.30	5.78	0.33	-7.35	2.39	-4.10	2.67	11.09	-22.09	19.89
Canada	1.42	-5.80	1.78	3.82	-6.04	0.09	1.50	-5.70	1.74	5.39	-20.48	6.25
China	5.50	-3.46	7.31	16.06	-15.27	34.07	5.50	-3.35	7.04	19.53	-10.28	3.63
Czech Republic	4.22	-8.17	4.07	-0.02	-2.56	3.66	4.48	-7.92	4.05	0.64	-10.88	19.46
Germany	2.59	-7.70	2.96	-11.09	4.73	8.28	2.68	-7.61	2.98	-7.59	-16.42	31.97
Denmark	11.09	-20.34	-0.11	-1.05	-9.43	6.92	11.20	-20.24	-0.17	1.71	-27.95	17.83
Spain	2.63	-9.58	4.57	5.56	-24.62	13.18	3.14	-9.07	4.40	8.02	-27.95	18.24
Finland	1.69	-5.29	2.86	-0.87	-6.43	7.29	1.81	-5.10	2.81	6.39	-19.72	11.80
France	2.60	-10.52	3.16	-6.16	-14.14	12.71	2.91	-10.25	3.18	1.10	-24.12	15.68
Great Britain	1.00	-14.20	5.55	1.48	-38.40	26.70	1.40	-13.88	5.55	1.07	-35.35	17.61
Greece	8.75	-18.66	4.54	13.20	-33.66	3.15	9.81	-17.68	3.70	7.37	-29.90	43.83
Hungary	1.64	5.25	-10.74	-1.28	-7.08	10.19	0.85	4.35	-10.65	8.37	-19.42	19.34
Indonesia	1.99	-3.50	6.21	5.96	-0.86	-14.90	2.24	-3.25	6.37	-7.41	6.28	0.76
India	6.26	-3.97	12.96	14.47	-18.42	21.00	7.34	-3.04	12.42	18.74	-8.40	44.07
Ireland	-2.54	-10.55	17.27	6.29	-31.92	33.50	-1.38	-9.34	16.28	17.55	-38.72	24.94
Italy	3.32	-9.14	5.06	-2.45	-16.01	17.08	3.66	-8.82	4.94	0.15	-15.81	23.97
Japan	2.39	-5.41	0.91	-5.51	-8.59	15.63	2.44	-5.35	0.92	-2.87	-14.98	28.73
Korea	5.29	-9.25	3.52	-6.68	-7.88	21.78	5.55	-8.95	3.59	4.58	-29.66	60.36
Mexico	4.07	-9.03	8.55	10.49	-7.04	-5.51	4.79	-8.27	8.94	11.20	-22.15	29.56
Netherlands	2.73	-7.01	0.45	-0.92	-15.91	12.30	2.80	-6.93	0.42	-5.64	-21.52	22.45
Poland	13.30	-10.97	7.49	1.68	-22.44	36.21	13.80	-10.39	6.92	28.17	-24.88	27.19
Portugal	4.94	-11.64	8.34	5.67	-26.15	14.32	6.09	-10.66	8.54	8.17	-24.29	37.89
Romania	16.60	-10.04	11.40	49.39	-31.97	-0.05	17.43	-9.28	10.15	41.71	-18.59	5.00
Russia	12.94	-9.60	1.72	-11.00	-2.12	45.17	13.18	-9.39	1.67	34.14	-22.08	-0.81
Slovakia	3.10	1.37	-6.87	13.14	-12.51	-4.12	2.81	1.05	-6.77	17.28	-21.86	2.92
Slovenia	6.98	-11.76	13.49	10.07	-16.18	5.19	8.22	-10.50	13.43	16.32	-27.09	44.84
Sweden	3.24	-10.12	3.05	-0.39	-12.97	10.02	3.45	-9.88	2.98	-2.18	-17.41	15.73
Turkey	10.74	-10.81	19.06	11.77	-30.94	57.46	12.44	-9.30	19.67	32.04	-26.42	70.25
Taiwan	-0.16	-0.50	1.66	1.56	-10.69	11.96	-0.10	-0.41	1.64	-5.57	-8.23	46.68
United States	2.28	-12.30	3.65	-5.11	-14.97	14.15	2.46	-12.15	3.68	1.24	-24.73	14.80
Average	**4.59**	**-8.53**	**4.84**	**3.31**	**-14.19**	**13.59**	**4.99**	**-8.15**	**4.75**	**8.07**	**-21.01**	**24.30**

Notes: The Table reports the change in sectoral value added and employment shares in Counterfactual 1 under our baseline calibration and the changes observed in the data.

Table A9: Changes in skill premium and gains from trade ratio, Counterfactuals 1 and 2

Country	Counterfactual 1			Counterfactual 2		
	Skill premium	Skilled real wage	Unskilled real wage	Skill premium	Skilled real wage	Unskilled real wage
Australia	1.52	3.72	2.16	1.67	4.64	2.93
Austria	2.00	18.98	16.64	4.95	22.07	16.32
Belgium	1.31	3.46	2.12	2.19	8.29	5.98
Brazil	1.42	2.75	1.31	-1.70	-0.66	1.05
Canada	0.68	4.17	3.47	1.07	1.93	0.85
China	3.29	14.31	10.67	-0.53	-1.02	-0.50
Czech Republic	1.66	28.74	26.64	-0.85	9.89	10.84
Germany	0.49	6.45	5.94	0.41	6.87	6.44
Denmark	0.68	8.32	7.60	2.86	11.64	8.54
Spain	1.95	7.76	5.70	3.27	9.43	5.96
Finland	0.94	5.77	4.79	1.53	6.59	4.98
France	1.18	5.50	4.27	2.26	7.57	5.19
Great Britain	1.79	4.97	3.13	3.27	7.62	4.21
Greece	4.48	9.95	5.24	7.56	18.56	10.23
Hungary	-3.56	47.47	52.91	10.95	48.81	34.12
Indonesia	2.28	4.73	2.40	-3.51	-2.09	1.48
India	5.24	12.35	6.76	10.88	15.55	4.22
Ireland	6.65	16.62	9.34	3.65	9.30	5.45
Italy	2.60	6.23	3.54	2.37	6.31	3.85
Japan	0.32	0.94	0.62	0.28	2.24	1.95
Korea	1.16	4.29	3.10	-1.01	0.00	1.03
Mexico	3.04	13.13	9.79	3.09	9.53	6.25
Netherlands	0.41	4.01	3.58	1.72	5.66	3.88
Poland	4.81	35.42	29.20	7.86	30.56	21.05
Portugal	5.29	22.68	16.51	10.78	28.26	15.78
Romania	7.68	41.70	31.59	13.15	37.16	21.21
Russia	1.36	3.00	1.62	1.50	8.66	7.05
Slovakia	-2.06	38.32	41.23	4.61	23.69	18.25
Slovenia	5.89	66.86	57.58	14.80	70.19	48.26
Sweden	1.55	5.36	3.76	1.79	5.05	3.20
Turkey	9.55	40.66	28.40	12.77	46.61	30.01
Taiwan	0.34	8.17	7.80	0.93	10.63	9.61
United States	0.76	2.52	1.74	0.81	3.86	3.02
Average	**2.32**	**15.13**	**12.46**	**3.80**	**14.35**	**9.78**

Notes: This table reports the predicted change in skill premium and real wages under our baseline calibration, in Counterfactuals 1 and 2.