Additional results for "Making sense of Bolkestein-bashing: trade liberalization under segmented labor markets

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October 16, 2006

1 The CES case

In this section we show how the model is modified when the utility function is CES instead of logarithmic. Thus, we assume

$$U = \frac{1}{\alpha}\int_0^1 c(i)^\alpha di,$$

with $\alpha \in (-\infty, 1] - \{0\}$. The demand function for good i is

$$c(i) = \frac{R}{p}\left(\frac{p(i)}{p}\right)^{-\frac{1}{1-\alpha}},$$

where $p = \left(\int_0^1 p(i)^{-\frac{\alpha}{1-\alpha}} di\right)^{-\frac{1-\alpha}{\alpha}}$ is the appropriate price index. Consequently, for $i < i_T$, one must have in the West:

$$l(i) = c(i) = \frac{Y}{p}\left(\frac{p(i)}{p}\right)^{-\frac{1}{1-\alpha}}.$$

For a given $l(i)$ (ex-post equilibrium), that implies

$$w(i) = p(i) = \left(\frac{Y}{l(i)}\right)^{1-\alpha} p^\alpha. \tag{1}$$

If $i > i_T$, then

$$c(i) = l(i) + \frac{l^*(i)}{a(i)} = \frac{Y}{p}\left(\frac{p(i)}{p}\right)^{-\frac{1}{1-\alpha}} + \frac{Y^*}{p^*}\left(\frac{p^*(i)}{p^*}\right)^{-\frac{1}{1-\alpha}},$$

where $p^* = \left(\int_0^1 p^*(i)^{-\frac{\alpha}{1-\alpha}} di\right)^{-\frac{1-\alpha}{\alpha}}$ is the East's CPI. For these goods we have

$$p(i) = \frac{\left(\frac{Y}{p^{-\frac{\alpha}{1-\alpha}}} + \frac{Y^*}{p^{*-\frac{\alpha}{1-\alpha}}}\right)^{1-\alpha}}{\left(l(i) + \frac{l^*(i)}{a(i)}\right)^{1-\alpha}} = w(i) = p^*(i) = w^*(i)a(i). \tag{2}$$

Finally, for non-traded goods in the East we have

$$p^*(i) = \left(\frac{Y^* a(i)}{l^*(i)}\right)^{1-\alpha} p^{*\alpha} = w^*(i)a(i). \tag{3}$$

We define the real exchange rate between the two countries as $q = p/p^*$. Using (1), (2), (3) and the definitions of p and p^* we get

$$p^{-\alpha} = \int_0^{i_T} \left(\frac{Y}{l(i)}\right)^{-\alpha} di + \left(Y + Y^* q^{-\frac{\alpha}{1-\alpha}}\right)^{-\alpha} \int_{i_T}^1 \left(l(i) + \frac{l^*(i)}{a(i)}\right)^{\alpha} di \tag{4}$$

$$p^{*-\alpha} = \int_0^{i_T} \left(\frac{Y^* a(i)}{l^*(i)}\right)^{-\alpha} di + \int_{i_T}^1 \frac{\left(l(i) + \frac{l^*(i)}{a(i)}\right)^{\alpha}}{\left(Y + Y^* q^{-\frac{\alpha}{1-\alpha}}\right)^{\alpha}} di. \tag{5}$$

We can close the characterization of the ex-post equilibrium by normalizing $Y = 1$ and writing the definition of national income:

$$\begin{aligned} Y &= 1 = \int_0^1 c(i)p(i)di \\ &= p^{\alpha} \int_0^{i_T} l(i)^{\alpha} \\ &\quad + p^{\alpha}\left(1 + Y^* q^{-\frac{\alpha}{1-\alpha}}\right)^{1-\alpha} \int_{i_T}^1 \frac{l(i)}{(l(i) + l^*(i)/a(i))^{1-\alpha}} di. \end{aligned} \tag{6}$$

Eliminating p between (4) and (6) yields

$$1 + Y^* q^{-\frac{\alpha}{1-\alpha}} = \frac{\int_{i_T}^1 \left(l(i) + \frac{l^*(i)}{a(i)}\right)^{\alpha} di}{\int_{i_T}^1 (l(i) + l^*(i)/a(i))^{\alpha-1} l(i) di}. \tag{7}$$

This defines a relationship between q and Y^*. Dividing (4) by (5), and using the normalization, we get another relationship:

$$q^{\alpha} = \frac{\int_0^{i_T} \left(\frac{Y^* a(i)}{l^*(i)}\right)^{-\alpha} di + \left(1 + Y^* q^{-\frac{\alpha}{1-\alpha}}\right)^{-\alpha} \int_{i_T}^{1} \left(l(i) + \frac{l^*(i)}{a(i)}\right)^{\alpha} di}{\int_0^{i_T} \left(\frac{Y}{l(i)}\right)^{-\alpha} di + \left(1 + Y^* q^{-\frac{\alpha}{1-\alpha}}\right)^{-\alpha} \int_{i_T}^{1} \left(l(i) + \frac{l^*(i)}{a(i)}\right)^{\alpha} di}. \quad (8)$$

In the ex-ante equilibrium, the same comparative advantage logic applies. The west will produce and export the traded goods such that $i > i_C$; the East will export those such that $i_T < i < i_C$. One has $w(i) = w = p(i)$ for all i. Consequently, $l(i) = \bar{l}$ for $i < i_T$, so that $w = \bar{l}^{\alpha-1} p^{\alpha}$. For $i > i_C$,

$$l(i) = \bar{l}(1 + Y^* q^{-\frac{\alpha}{1-\alpha}}).$$

$\bar{l}$ is determined by equating supply and demand in the West's labor market

$$\bar{l} i_T + \bar{l}(1 + Y^* q^{-\frac{\alpha}{1-\alpha}})(1 - i_C) = L. \quad (9)$$

In the East, wage equalization implies, for $i < i_T$

$$l^*(i) = \bar{l}^* a(i)^{-\frac{\alpha}{1-\alpha}},$$

with $w^* = (Y^*/\bar{l}^*)^{1-\alpha} p^{*\alpha}$. For $i_T < i < i_C$ one must have

$$l^*(i) = \bar{l}^* a(i)^{-\frac{\alpha}{1-\alpha}} \frac{1 + Y^* q^{-\frac{\alpha}{1-\alpha}}}{Y^* q^{-\frac{\alpha}{1-\alpha}}}.$$

Equilibrium in the East's labor market implies

$$\bar{l}^* I_1 + \bar{l}^* \frac{1 + Y^* q^{-\frac{\alpha}{1-\alpha}}}{Y^* q^{-\frac{\alpha}{1-\alpha}}} I_2(i_C) = L^*, \quad (10)$$

where, by definition

$$\begin{aligned} I_1 &= \int_0^{i_T} a(i)^{-\frac{\alpha}{1-\alpha}} di; \\ I_2(i_C) &= \int_{i_T}^{i_C} a(i)^{-\frac{\alpha}{1-\alpha}} di. \end{aligned}$$

Finally, the critical good i_C is determined by

$$a(i_C) = \frac{w}{w^*} = q^{\alpha} \left(\frac{\bar{l}^*}{\bar{l}}\right)^{1-\alpha} (Y^*)^{\alpha-1}. \quad (11)$$

To solve the model numerically, we first rewrite (7) using the values of $l(i)$ and $l^*(i)$ in the ex-ante equilibrium. Denoting by

$$h = 1 + Y^* q^{-\frac{\alpha}{1-\alpha}},$$

this yields

$$h = 1 + \left(\frac{\bar{l}^*}{\bar{l}}\right)^{\alpha} \frac{(h-1)^{-\alpha}}{(1-i_C)} I_2(i_C).$$

Substituting from (9) and (10), this yields

$$(h-1)^{1+\alpha} = \left(\frac{L^*}{L}\right)^{\alpha} \left(\frac{i_T + (1-i_C)h}{I_1 + I_2(i_C)\frac{h}{h-1}}\right)^{\alpha} \frac{I_2(i_C)}{1-i_C}.$$

Given i_C, this equation determines h. One may then get $\bar{l}$ and $\bar{l}^*$ from (9) and (10).

One may then use (8) to compute Y^* and q. Substituting the values of $l(i)$ and $l^*(i)$ in the ex-ante equilibrium, and replacing Y^* by $(h-1)q^{\frac{\alpha}{1-\alpha}}$ we see that (8) is equivalent to

$$q^{\alpha} = \frac{\bar{l}^{*\alpha}(h-1)^{-\alpha} q^{-\frac{\alpha^2}{1-\alpha}} I_1 + \bar{l}^{*\alpha} I_2(i_C)(h-1)^{-\alpha} + (1-i_C)\bar{l}^{\alpha}}{(1-i_C+i_T)\bar{l}^{\alpha} + \bar{l}^{*\alpha} I_2(i_C)(h-1)^{-\alpha}}.$$

This, given i_C, determines q, and then Y^*. Then, the prices p and p^* can be obtained using (4) and (5):

$$p^{-\alpha} = (1-i_C+i_T)\bar{l}^{\alpha} + \bar{l}^{*\alpha} I_2(i_C)(h-1)^{-\alpha};$$

$$p^{*-\alpha} = \bar{l}^{*\alpha}(h-1)^{-\alpha} q^{-\frac{\alpha^2}{1-\alpha}} I_1 + \bar{l}^{*\alpha} I_2(i_C)(h-1)^{-\alpha} + (1-i_C)\bar{l}^{\alpha}.$$

Finally, the equilibrium value of i_C is numerically determined by a tatonnement process until (11) is satisfied.

To compute the effect of liberalization numerically, we need to apply the formulas for the ex-post equilibrium, using the same notation as in the text ($\tilde{}$) to denote post-reform values. Again, Western GDP remains normalized to 1. Equations (7) and (8) yield the new levels of the real exchange rate and of the East's GDP:

$$\tilde{h} = 1 + \tilde{Y}^* \tilde{q}^{-\frac{\alpha}{1-\alpha}} = \frac{\int_{\tilde{i}_T}^{i_T} \left(\bar{l} + \bar{l}^* a(i)^{-\frac{1}{1-\alpha}}\right)^{\alpha} di + \bar{l}^{*\alpha} I_2(i_C) \left(\frac{h}{h-1}\right)^{\alpha} + \bar{l}^{\alpha} h^{\alpha}(1-i_C)}{\bar{l} \int_{\tilde{i}_T}^{i_T} \left(\bar{l} + \bar{l}^* a(i)^{-\frac{1}{1-\alpha}}\right)^{\alpha-1} di + (1-i_C)\bar{l}^{\alpha} h^{\alpha}};$$

$$\tilde{q}^{\alpha} = \frac{\left(\begin{array}{c} (\tilde{h}-1)^{-\alpha} \tilde{q}^{-\frac{\alpha^2}{1-\alpha}} \bar{l}^{*\alpha} \int_0^{\tilde{i}_T} a(i)^{-\frac{\alpha}{1-\alpha}} di + \tilde{h}^{-\alpha} \int_{\tilde{i}_T}^{i_T} \left(\bar{l} + \bar{l}^* a(i)^{-\frac{1}{1-\alpha}} \right)^{\alpha} di \\ + \tilde{h}^{-\alpha} \left[\bar{l}^{*\alpha} I_2(i_C) \left(\frac{h}{h-1} \right)^{\alpha} + \bar{l}^{\alpha} h^{\alpha} (1-i_C) \right] \end{array} \right)}{\left(\begin{array}{c} \bar{l}^{\alpha} \tilde{i}_T + \tilde{h}^{-\alpha} \int_{\tilde{i}_T}^{i_T} \left(\bar{l} + \bar{l}^* a(i)^{-\frac{1}{1-\alpha}} \right)^{\alpha} di \\ + \tilde{h}^{-\alpha} \left[\bar{l}^{*\alpha} I_2(i_C) \left(\frac{h}{h-1} \right)^{\alpha} + \bar{l}^{\alpha} h^{\alpha} (1-i_C) \right] \end{array} \right)}.$$

To compute the other variables, we then follow the same steps as in the ex-ante equilibrium.

We use an $a(i)$ function that makes our computations comparable to those in the text. We take $i_T = 0.5$, and $a(i) = 1$ for $i < i_K$, $a(i) = 1 + a(i - i_K)$ for $i \geq i_K$. We take $i_K = i_T = 0.5$. As in the text, producers of newly traded goods in the East are as productive as their counterparts in the West. As for the parameter a, it is picked so that $a(i_C) = 3$, as in the text.[1] We again have $L = 1$ and $L^* = 0.2$. We use the above formulae to compute the impact on the distribution of wages of a quasi-marginal liberalization such that $\tilde{i}_T = i_T - 0.01$. That is reported in Table A1, for the six groups of interest.

α	C	B	A	C*	B*	A*
-0.2	+0.0093	-10.8	+0.22	+0.77	+162	-2.2
-0.1	+0.011	-10.8	+0.22	+0.66	+160	-2.0
0.1	+0.0046	-11	+0.23	+0.62	+159	-2.9
0.2	+0.0077	-11	+0.23	+0.52	+158	-3.2
0.3	+0.0092	-11	+0.23	+0.47	+156	-3.6

Table A1 – Percentage change in wages for each group, following liberalization, for different values of α.

Table A1 confirms that the distributive effect of liberalization highlighted in the text are robust to the use of a CES utility function rather than a Cobb-Douglas one. Furthermore, it appears that the gains to the three groups in the East are lower, the greater α, i.e. the more the goods are substitutes. Given the complexity of the formulas, and the fact that the results depend on the assumed functional form for $a()$, it is difficult to interpret this result.

2 Exporters of "services"

We now consider how the model can be modified if workers who produce exported goods must devote a fraction of their consumption basket to goods produced in the foreign country. That assumption captures the view that the goods

[1] That implies that different values of α are matched with different values of a.

are "services", so that exporting them implies some physical presence abroad. Thus, we assume that a western worker exporting to the East has a utility given by

$$(1-\gamma)\int \ln \frac{c(i)}{1-\gamma} di + \gamma \int \ln \frac{c^*(i)}{\gamma} di,$$

where $c(i)$ (resp. $c^*(i)$), is the individual's consumption of good i in the West (resp. in the East). Intuitively, that means that the individual has to spend a fraction γ of his time abroad; this formula is then equal to the individual's (undiscounted) sum of utility flows over a total length of time normalized to unity. If the worker's income is R, his demand for good i in the West (resp. the East) is $(1-\gamma)R/p(i)$ (resp. $\gamma R/p^*(i)$), and his indirect utility is $\ln \frac{R}{p^{1-\gamma} p^{*\gamma}}$.

A symmetrical assumption holds for Eastern workers exporting to the West. Finally, we assume that the physical mobility associated with exporting is feasible ex-post, contrary to occupational choice. Otherwise, trade would simply be impossible.

The law of one price for traded goods is now replaced by a purchasing power parity condition, which states that for $i > i_T$ workers are indifferent between selling at home or abroad. For Western workers, that is equivalent to

$$\frac{p(i)}{p} = \frac{p^*(i)}{p^{1-\gamma} p^{*\gamma}},$$

where the numerator is what the worker earns by selling the good in the relevant country, and the denominator is the appropriate deflator.[2] Thus, for a traded good

$$p^*(i) = \left(\frac{p^*}{p}\right)^{\gamma} p(i) = q^{-\gamma} p(i),$$

where $q = p/p^*$ is the real exchange rate.[3]

We first characterize the ex-post equilibrium, assuming an ex-post trade regime $\tilde{i}_T < i_T$. We denote by X the total nominal demand for western goods, and by X^* the total nominal demand for eastern goods. For non traded goods ($i < \tilde{i}_T$), we have

$$\frac{X}{p(i)} = l(i);$$
$$\frac{X^*}{p^*(i)} = \frac{l^*(i)}{a(i)}.$$

[2] Note that we assume that workers keep their domestic productivity level when selling abroad, otherwise the whole pattern of comparative advantage would disappear.

[3] The same condition holds if instead one writes down the indifference condition for Eastern workers, $\frac{p(i)}{a(i) p^{*1-\gamma} p^{\gamma}} = \frac{p^*(i)}{a(i) p^*}$.

For traded goods the equilibrium condition is

$$\frac{X}{p(i)} + \frac{X^*}{p^*(i)} = l(i) + \frac{l^*(i)}{a(i)}.$$

Consequently, wages are equal to

$$\begin{aligned} w(i) &= p(i) = \frac{X}{l(i)}; \\ w^*(i) &= \frac{p^*(i)}{a(i)} = \frac{X^*}{l^*(i)}, \end{aligned}$$

for non-traded goods and

$$\begin{aligned} w(i) &= p(i) = \frac{X + X^* q^\gamma}{l(i) + l^*(i)/a(i)}; \\ w^*(i) &= \frac{p^*(i)}{a(i)} = \frac{X q^{-\gamma} + X^*}{l(i)a(i) + l^*(i)}, \end{aligned}$$

for non traded goods.

These formulas allow to compute the CPI in each country:

$$\ln p = \int_0^{\tilde{i}_T} \ln \frac{X}{l(i)} + \int_{\tilde{i}_T}^1 \ln \frac{X + X^* q^\gamma}{l(i) + l^*(i)/a(i)}; \quad (12)$$

$$\ln p^* = \int_0^{\tilde{i}_T} \ln \frac{a(i)X^*}{l^*(i)} + \int_{\tilde{i}_T}^1 \ln \frac{X q^{-\gamma} + X^*}{l(i)a(i) + l^*(i)}. \quad (13)$$

Finally, X and X^* can be computed by adding all incomes spent in a given country. For the West, this is equivalent to

$$\begin{aligned} X = & \int_0^{\tilde{i}_T} p(i)l(i)di + \\ & \int_{\tilde{i}_T}^1 \left(\min(\frac{X}{p(i)}, l(i))p(i) + (1-\gamma)\max(l(i) - \frac{X}{p(i)}, 0)p^*(i) + \gamma \max(\frac{l^*(i)}{a(i)} - \frac{X^*}{p^*(i)}, 0) \right) p(i)di \end{aligned}$$

The first term in the second integral is the nominal demand for western goods by western producers of traded goods who cover the western market. The second term is the demand by those who export. The last term is the demand for western goods by eastern workers who export to the West.

The preceding equations characterize the ex-post equilibrium. To proceed, let us assume right away that $l(i) = 0$ for $i \in [i_T, i_C]$ and $l^*(i) = 0$ for $i > i_C$. We normalize X to 1, hence the preceding equation yields

$$X^* = \frac{i_C - \tilde{i}_T - \int_{\tilde{i}_T}^{i_T} \frac{l(i)}{l(i)+l^*(i)/a(i)} di}{1 - i_C + q^\gamma \int_{\tilde{i}_T}^{i_T} \frac{l(i)}{l(i)+l^*(i)/a(i)} di},$$

which generalizes (**??**).

Taking differences between (12) and (13) yields another relationship between X^* and q

$$\tilde{i}_T \ln X^* + (1-\gamma(1-\tilde{i}_T)) \ln q = \int_0^{\tilde{i}_T} \ln \frac{l^*(i)}{a(i)l(i)}.$$

In the ex-ante equilibrium, wage equalization implies that $l(i) = \bar{l}$, $l^*(i) = \bar{l}^*$, for $i < i_T$, and $l(i) = \bar{l}(1 + X^* q^\gamma), l^*(i) = \bar{l}^*(1 + \frac{1}{X^* q^\gamma})$, $i > i_T$. Labor market equilibrium yields

$$\begin{aligned} L &= \bar{l} i_T + \bar{l}(1 + X^* q^\gamma)(1 - i_C); \\ L^* &= \bar{l}^* i_T + \bar{l}^*(1 + \frac{1}{X^* q^\gamma})(i_C - i_T). \end{aligned}$$

Finally, the critical good i_C is determined by $p^*(i_C)/(p^{1-\gamma} p^{*\gamma}) = w/p$, i.e.

$$a(i_C) = \frac{w}{w^*} q^{-\gamma}.$$

With these formulas, we can characterize the ex-ante equilibrium and compute the effects of marginal ex-post liberalization. For the former, we get

- $X^* = \frac{i_C - i_T}{1 - i_C}$
- $\bar{l} = \frac{L}{1 + (i_C - i_T)(q^\gamma - 1)}$
- $\bar{l}^* = \frac{L^*}{1 + i_C(1 - q^{-\gamma})}$
- $w = \frac{1 + (i_C - i_T)(q^\gamma - 1)}{L}$
- $w^* = \frac{i_C - i_T}{1 - i_C} \frac{1 + i_C(1 - q^{-\gamma})}{L^*}$
- $i_T \ln X^* + (1 - \gamma(1 - i_T)) \ln q = -\int_0^{i_T} \ln a(i).di + i_T \ln \frac{\bar{l}^*}{\bar{l}}$
- $\ln p = -(1 - i_C + i_T) \ln \bar{l} - (i_C - i_T) \ln \bar{l}^* + (i_C - i_T) \ln(X^* q^\gamma) + \int_{i_T}^{i_C} \ln a(i) di$
- $\ln p^* = -(1 - i_C) \ln \bar{l} - i_C \ln \bar{l}^* + \int_0^{i_C} \ln a(i).di + i_C \ln X^* - (1 - i_C)\gamma \ln q$
- $a(i_C) = \frac{\bar{l}^*}{\bar{l} X^*} q^{-\gamma}$

For the latter, we just need to apply the above formulas with $\tilde{i}_T = i_T + d\tilde{i}_T$, $d\tilde{i}_T < 0$; we get

- $\frac{d\tilde{X}^*}{d\tilde{i}_T} = \frac{\bar{l}^*}{(1 - i_C)(\bar{l} a(i_T) + \bar{l}^*)} (\frac{a(i_T)}{a(i_C)} - 1) < 0$
- $\frac{d\tilde{q}}{d\tilde{i}_T} = \frac{q}{1 - \gamma(1 - i_T)} \ln \frac{a(i_C)}{a(i_T)} > 0.$

  Let us now study the distributive effects of liberalization.

The change in the price level in the West is

$$\frac{1}{p}\frac{dp}{d\tilde{\imath}_T} = -\ln\frac{1+X^*q^\gamma}{\bar{l}+\bar{l}^*/a(i_T)} + \ln\frac{1}{\bar{l}} + \frac{1-i_T}{1+Xq^\gamma}\frac{d(\tilde{X}\tilde{q}^\gamma)}{d\tilde{\imath}_T}.$$

It is no longer easy to prove that this quantity is positive; therefore, it may a priori be that the West as a whole loses. However, since the model in the text is the special case where $\gamma = 0$, the results in the text hold by continuity if γ is not too large. The same applies to group C whose nominal wage is $1/\bar{l}$ and unaffected by the reform.

The nominal wage of group A is $\tilde{w}_A = \frac{1+\tilde{X}^*\tilde{q}^\gamma}{\bar{l}(1+X^*q^\gamma)}$; therefore

$$\frac{d\tilde{w}_A}{d\tilde{\imath}_T} = \frac{1}{\bar{l}(1+Xq^\gamma)}\frac{d(\tilde{X}q^\gamma)}{d\tilde{\imath}_T}.$$

This can be positive or negative depending on whether or not the contribution of the change in $\tilde{X}$ dominates that of $\tilde{q}$. Basically, producers of traded goods in the West gain from the increase in the East's GDP, but lose from the appreciation of its exchange rate, as part of their consumption takes place in the East. If $\frac{d\tilde{w}_A}{d\tilde{\imath}_T} > 0$, that means that group A gains less than group C and that the country as a whole. Otherwise, the ranking of welfare differentials is unchanged relative to the text. The simulations below suggest that this is true regardless of γ.

As for group B, it experiences a discrete wage drop, as in the text.

$$\Delta \ln \tilde{w}_B = \ln\frac{1+X^*q^\gamma}{\bar{l}+\bar{l}^*/a(i_T)} - \ln\frac{1}{\bar{l}}.$$

To conclude: if γ is not too large, nothing is changed for the West. If γ is large, group A may gain less (lose more) than group C.

To know more, we use again numerical simulations[4]. Table A2 reports the net welfare gains for all groups for a marginal liberalization of size $-d\tilde{\imath}_t = \varepsilon$. The rankings, as well as the signs for groups A,A*, B and B* are unchanged compared to the text. We also note that when γ is higher, group B loses less, and group B* gains less, from liberalization. The greater γ, the more costly it is for Eastern producers of newly traded goods to come, and the lower the competition faced by Western plumbers. Another feature is that groups C and C* both have lower gains, and eventually losses, when γ is higher. In addition to paying more for imports (the terms-of-trade effect), group C has to pay more for western exportables, as producers of those goods face a higher price level for their consumption in the East. As for group C*, it has to pay more for its newly tradeable goods, the greater γ, since producers of those goods spend a greater share of their budget in the more expensive West.

[4] We use the same specification as in the preceding Appendix, with $a = 50$, which yields a relative wage w/w^* which varies between 2 and 3.

γ\group	A	B	C	A*	B*	C*
0	$+0.21\varepsilon$	-0.11	$+0.0058\varepsilon$	-0.98ε	+0.89	$+0.137\varepsilon$
0.1	$+0.206\varepsilon$	-0.107	$+0.0037\varepsilon$	-1.00ε	+0.86	$+0.097\varepsilon$
0.2	$+0.202\varepsilon$	-0.102	$+0.0009\varepsilon$	-1.01ε	+0.83	$+0.054\varepsilon$
0.3	$+0.196\varepsilon$	-0.0967	-0.00259ε	-1.03ε	+0.8	$+0.01\varepsilon$
0.4	$+0.1895\varepsilon$	-0.0909	-0.0076ε	-1.04ε	+0.76	-0.036ε
0.5	$+0.184\varepsilon$	-0.0846	-0.01ε	-1.05ε	+0.72	-0.082ε
0.6	$+0.179\varepsilon$	-0.069	-0.025ε	-1.04ε	+0.66	-0.127ε
0.7	$+0.178\varepsilon$	-0.069	-0.041ε	-1.02ε	+0.59	-0.17ε
0.8	$+0.185\varepsilon$	-0.058	-0.07ε	-0.948ε	+0.49	-0.206ε

Table A2 – Distributive impact of a marginal liberalization on the West, for different values of γ.