A Single Monetary Policy for Heterogeneous Labour Markets: The Case of the Euro Area

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These are the views of the authors and do not represent the views of the Banco de Portugal, European Central Bank, the Central Bank of Ireland, or of the eurosystem.

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Both the ECB and the FED in their recent strategy reviews paid more attention to employment and inequality.

- The ECB: "...the medium-term orientation provides flexibility to take account of employment in response to economic shocks, giving rise to a temporary trade-off between short-term employment and inflation stabilisation without endangering medium-term price stability." and "... important to [...] account for uncertainty, heterogeneity and ongoing structural changes shaping the outlook for economic activity and employment in the euro area and its member countries."

- The FOMC reviewed its strategy and clarified the maximum employment goal. "Our revised statement reflects our appreciation of a strong labour market, particularly for many in low- and moderate-income communities..." (J. Powell)
Job finding rates by educational attainment in the EA

EA countries differ (trade direction...), but country-specific labour institutions are typical (computed from OECD data):

<table>
<thead>
<tr>
<th>Country</th>
<th>Below upp. secondary</th>
<th>Upper sec., non-tertiary</th>
<th>Tertiary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>0.40</td>
<td>0.36</td>
<td>0.20</td>
</tr>
<tr>
<td>Belgium</td>
<td>0.10</td>
<td>0.18</td>
<td>0.33</td>
</tr>
<tr>
<td>Finland</td>
<td>0.14</td>
<td>0.44</td>
<td>0.35</td>
</tr>
<tr>
<td>France</td>
<td>0.14</td>
<td>0.19</td>
<td>0.20</td>
</tr>
<tr>
<td>Germany</td>
<td>0.21</td>
<td>0.29</td>
<td>0.35</td>
</tr>
<tr>
<td>Greece</td>
<td>0.12</td>
<td>0.12</td>
<td>0.13</td>
</tr>
<tr>
<td>Hungary</td>
<td>0.22</td>
<td>0.25</td>
<td>0.33</td>
</tr>
<tr>
<td>Ireland</td>
<td>0.10</td>
<td>0.16</td>
<td>0.19</td>
</tr>
<tr>
<td>Italy</td>
<td>0.15</td>
<td>0.14</td>
<td>0.24</td>
</tr>
<tr>
<td>Latvia</td>
<td>0.16</td>
<td>0.19</td>
<td>0.26</td>
</tr>
<tr>
<td>The Netherlands</td>
<td>0.25</td>
<td>0.26</td>
<td>0.35</td>
</tr>
<tr>
<td>Slovak Republic</td>
<td>0.12</td>
<td>0.23</td>
<td>0.34</td>
</tr>
<tr>
<td>Slovenia</td>
<td>0.28</td>
<td>0.07</td>
<td>0.30</td>
</tr>
<tr>
<td>Spain</td>
<td>0.28</td>
<td>0.29</td>
<td>0.30</td>
</tr>
</tbody>
</table>
What we do

- Consider a typical two-agent New Keynesian model:
  - Constrained households consume their labour income (minus taxes, plus eventual transfers)...
  - ...so their consumption = their disposable income...
  - ...so disposable income is the only (!) determinant of their consumption...
  - ...and then the typical assumption is that wages of the unconstrained households ("the rich") behave exactly the same as wages of the constrained households ("the poor").

- We relax this assumption and allow for different unemployment rates, matching probabilities, separation rates...

- We look at monetary policy and inflation-(un)employment trade-off
Model of the euro area and the global econ. (EAGLE)
We have several dimensions of heterogeneity in the model:

- Cross-country heterogeneity within the euro area (arising from different trade orientation, etc.)
- Each country is modelled as a two-agent (TANK) model
- Each type of agents has its own labour market segment with search-and-matching
- Each type of agents has their own wage-setting, with the distinction between wages of new hires and existing workers
Targeting rules

Benchmark Taylor rule

\[ r_t = \varphi_r r_{t-1} + (1 - \varphi_r) (r^* + \pi^* + \varphi_{\pi} (\pi_t - \pi^*) + \varphi_u \hat{u}_t) + \varepsilon^R_t \]

Taylor rule with an asymmetric response to unemployment

\[ r_t = \varphi_r r_{t-1} + (1 - \varphi_r) (r^* + \pi^* + \varphi_{\pi} (\pi_t - \pi^*) + I_{u > u^*} \varphi_u \hat{u}_t) + \varepsilon^R_t \]

Average inflation targeting rule (4 y-o-y rates)

\[ r_t = \varphi_r r_{t-1} + (1 - \varphi_r) \left( r^* + \pi^* + \varphi_{\pi} \left( \bar{\pi}_T^T - \pi^* \right) + \varphi_u \hat{u}_t \right) + \varepsilon^R_t \]
We pay particular attention to the calibration of the labour market:

- Compute job finding probabilities for Ricardian and HtM households (OECD, search duration) to match matching efficiencies
- Use replacement ratios from OECD (for Ricardian and HtM) to get vacancy posting costs
- Use unemployment by educational attainment to match separation rates
- Calibrate disutility weight to normalise hours worked to 1 in the steady state
Results

Simulations

We simulate two types of shocks:

- **Inflationary supply shock**
  - Increase in markups in tradable and non-tradable sectors
  - ⇒ Monetary policy cannot stabilise output/employment and simultaneously fight inflation

- **Expansionary demand shock**
  - Preference shock and investment-specific demand shock
  - ⇒ Monetary policy can stabilise output/employment and fight inflation

We look at the performance of the three monetary policy rules, with emphasis on employment and heterogeneity between and within EA countries.
Results

Inflationary supply shock - EA-wide

With IT

Output

With ASUT

Unemployment

With AIT

Inflation

With $\phi_u=2$

With $\phi_u=0$

ASUT with $\phi_u=3$

SG, PJ, ML (BdP, ECB, CBI)

MP Rules and Labour

22-23 May 2023 10 / 18
Inflationary supply shock - EA-wide

Results

Export

With IT

With ASUT

With AIT

Consumption

With IT

With ASUT

With AIT

Investment

With IT

With ASUT

With AIT

With $\phi_u = 2$

With $\phi_u = 0$

ASUT with $\phi_u = 3$

SG, PJ, ML (BdP, ECB, CBI)  
MP Rules and Labour  
22-23 May 2023  
11/18
Inflationary supply shock - country-specific

Results

![Graphs showing output, unemployment, and other economic indicators with various parameters and scenarios.]
Inflationary supply shock - country-specific labour
Expansionary demand shock - EA-wide

With IT

With ASUT

With AIT

Output

Unemployment

Inflation

SG, PJ, ML (BdP, ECB, CBI) MP Rules and Labour 22-23 May 2023 14/18
Expansionary demand shock - EA-wide

Results

With IT

With ASUT

With AIT

Export

Consumption

Investment

SG, PJ, ML (BdP, ECB, CBI)  MP Rules and Labour  22-23 May 2023
Expansionary demand shock - country-specific

Results

**With IT**

**Output**

**Unempl. - Ricard.**

**Unempl. - HM**

- **REA, ϕ_u = 2**
- **REA, ϕ_u = 0**
- **REA, ASUT, ϕ_u = 3**
- **Home, ϕ_u = 2**
- **Home, ϕ_u = 0**
- **Home, ASUT, ϕ_u = 3**
Expansionary demand shock - country-specific labour

- With IT
- With ASUT
- With AIT

Vacancies - HtM
Vacancies - Ricardian
C of HtM / C Ric.

REA, $\phi_u = 2$
REA, $\phi_u = 0$
REA, ASUT, $\phi_u = 3$
Home, $\phi_u = 2$
Home, $\phi_u = 0$
Home, ASUT, $\phi_u = 3$
Key findings

- Responding to unemployment in the EA has the following implications:
  - It results in stronger unemployment decrease after expansionary demand shocks and lower unemployment increase after a contractionary supply shock.
  - It tends to lower inequality between and within EA countries.
  - It leads to somewhat faster increase in inflation, but also faster return of inflation after a supply shock.

- Responding to inflation alone causes large fluctuations between and within EA countries.
Counterfactual on REA - Consumption

With IT

Vacancies - HtM

0 10 20 30
0
20
40
60

Vacancies - Ricardian

0 10 20 30
0
20
40
60

C of HtM / C Ric.

0 10 20 30
0
2
4

REA, $\phi_u=2$ (ASUT $\phi_u=3$)
REA, $\phi_u=0$ (ASUT $\phi_u=0$)
REA, CTF, $\phi_u=2$ (ASUT $\phi_u=3$)
REA, CTF, $\phi_u=0$ (ASUT $\phi_u=2$)

SG, PJ, ML (BdP, ECB, CBI)
MP Rules and Labour
22-23 May 2023
20/18
Counterfactual on REA - Wages

With IT

With ASUT

With AIT

REA, \( u = 2 \) (ASUT \( u = 3 \))

REA, \( u = 0 \) (ASUT \( u = 0 \))

REA, CTF, \( u = 2 \) (ASUT \( u = 3 \))

REA, CTF, \( u = 0 \) (ASUT \( u = 2 \))
Labour market flows

We have 2 segments $s$ ($s = i$ for Ricardian and $s = j$ for HtM):

$$nde_{s,t} = (1 - \delta_{x,s}) \ nde_{s,t-1} + M_{s,t},$$

where $M_{s,t}$ is the number of new matches defined as:

$$M_{s,t} = \phi_{s,M}(un_{s,t})^\mu(vac_{s,t})^{1-\mu} = p_w^{s,t}un_{s,t} = p_f^{s,t}vac_{s,t},$$

The probability for a searching worker to find a job is

$$p_w^{s,t} = \frac{M_t}{un_{s,t}} = \phi_{s,M}\left(\frac{vac_{s,t}}{un_{s,t}}\right)^{1-\mu}$$

and the probability of a firm finding a worker is

$$p_f^{s,t} = \frac{M_{s,t}}{vac_{s,t}} = \phi_{s,M}\left(\frac{vac_{s,t}}{un_{s,t}}\right)^{-\mu}$$
Wages and hiring

We adopt the staggered wage bargaining from Bodart et al. (2006) and de Walque et al. (2009), by labour market segments and by countries (blocs):

- In every segment, for a worker and for a firm, there are two value functions, one for a newly-renegotiated wage $w_{s,t}^*$ and one for the existing (average) wage $w_{s,t}$
- Newly-renegotiated wage is determined by Nash bargaining
- Firms hire workers with some probability at newly-renegotiated wage or at an average wage of the period
Value functions - firm

Let $A^F(w_{s,t}^*)$ denote the value of a job for a firm employing a worker from household type $s \in [i, j]$, where $w_{s,j}^*$ is the renegotiated wage. It will be convenient to use this value in marginal utility terms, so we define $A^F(w_{s,t}^*) \equiv u'(c_{s,t})A^F(w_{s,t}^*)$. The value of a job with a renegotiated wage for a labour firm can then be written as

$$A^F_{t+1}(w_{s,t}^*) = u'(c_{s,t+1}) \left(h_{s,t+1}^{\alpha_H} x_{s,t+1} - h_{s,t+1} w_{s,t+1}^* \left(1 + \tau_{t+1}^w\right)\right)$$

$$+ \beta \left(1 - \delta_{x,s}\right) \left[(1 - \xi_{w,s})A^F_{t+2}(w_{s,t+2}^*) + \xi_{w,s}A^F_{t+2}(w_{s,t+2}^*)\right]$$

$A^F_{t+1}(w_{s,t}^*)$ prevents to write the expression recursively. But we can write it out:

$$A^F_{t+1}(w_{s,t}^*) = u'(c_{s,t+1}) \left(h_{s,t+1}^{\alpha_H} x_{s,t+1} - h_{s,t+1} w_{s,t+1}^* \left(1 + \frac{\pi}{P_{t+1}}\right)\right)$$

$$+ \beta \left(1 - \delta_{x,s}\right) \left[(1 - \xi_{w,s})A^F_{t+2}(w_{s,t+2}^*) + \xi_{w,s}A^F_{t+2}(w_{s,t+2}^*)\right]$$
If we then substitute in the expression, and repeat this forever, we get

\[
A^F_t(w^*_s, t) = \sum_{j=0}^{\infty} \left[ \beta(1 - \delta_{x,s})\xi_{w,s} \right]^j u'(c_{s,t+j}) \left( h^\alpha_{s,t+j} x_{s,t+j} - h_{s,t+j} w^*_s, t(1 + \tau_{t+j}^w) \right) \\
+ \sum_{j=0}^{\infty} \beta(1 - \delta_{x,s})(1 - \xi_{w,s}) \left[ \beta(1 - \delta_{x,s})\xi_{w,s} \right]^j A^F_{t+j+1}(w^*_s, t+1) \\
+ \lim_{j \to \infty} \left[ \beta(1 - \delta_{x,s})\xi_{w,s} \right]^j A^F_{t+j+1}(w^*_s, t)
\]

The last row goes to 0. The first row can be written recursively if we define:

\[
S^x_{s,t} = u'(c_{s,t}) h^\alpha_{s,t} x_{s,t} + \beta(1 - \delta_{x,s})\xi_{w,s} S^x_{s,t+1}
\]

\[
S^{wf}_{s,t} = u'(c_{s,t}) h_{s,t+j}(1 + \tau_{t+j}^w) + \beta(1 - \delta_{x,s})\xi_{w,s} \frac{(1 + \bar{\pi})P_t}{P_{t+1}} S^{wf}_{s,t+1}
\]
Using these definitions we can simplify:

\[ A^F_t(w^*_s,t) = S^x_{s,t} - S^w_{s,t}w^*_s,t \]

\[ + \sum_{j=0}^{\infty} \beta(1 - \delta_{x,s})(1 - \xi_{w,s})[\beta(1 - \delta_{x,s})\xi_{w,s}]^j A^F_{t+j+1}(w^*_{s,t+j+1}) \]

This leaves us the infinite sum, but we can forward this equation one period, multiply it with \( \beta(1 - \delta_{x,s})\xi_{w,s} \), and subtract it from both sides of the above equation, which cancels the infinite sum. After some algebra, we finally get the recursive form:

\[ A^F_t(w^*_s,t) = \left( S^x_{s,t} - S^w_{s,t}w^*_s,t \right) - \beta(1 - \delta_{x,s})\xi_{w,s} \left( S^x_{s,t+1} - S^w_{s,t+1}w^*_s,t+1 \right) + \]

\[ + \beta(1 - \delta_{x,s})A^F_{t+1}(w^*_{s,t+1}) \]
Value functions - firm

We can then similarly define the value of a worker with an average wage for a labour firm:

\[
A_t^F (w_s, t) = u'(c_s, t) \left( h^\alpha h x_s, t - h_s, t w_s, t (1 + \tau_t^w) \right) \\
+ \beta (1 - \delta x_s) \left[ (1 - \xi w_s) A_{t+1}^F (w^*_s, t+1) + \xi w_s A_{t+1}^F (w_s, t) \right]
\]

...and after some algebra

\[
A_t^F (w_s, t) = \left( S^x_{s, t} - S^w_{s, t} w_s, t \right) - \beta (1 - \delta x_s) \xi w_s \left( S^x_{s, t+1} - S^w_{s, t+1} w_s, t+1 \right) \\
+ \beta (1 - \delta x_s) A_{t+1}^F (w_s, t+1)
\]
Let $A^H(w^*_s, t)$ be the value of a job for a worker from household type $s \in [i, j]$, where $w^*_{s,j}$ is the renegotiated wage. We use this value in marginal utility terms, so we define $A^H(w^*_s, t) \equiv u'(c_{s,t})A^H(w^*_s, t)$. The value of a job with a renegotiated wage for a worker is then

$$A^H_t(w^*_s, t) = u'(c_{s,t}) \left(h_{s,t}w^*_s(1 - \tau^w_t) - b_{s,t}\right) - \chi \frac{h_{s,t}^{1+\varphi}}{1 + \varphi}$$

$$+ \beta(1 - \delta_{x,s}) \left[(1 - \xi_{w,s})A^H_{t+1}(w^*_s, t+1) + \xi_{w,s}A^H_{t+1}(w^*_s, t)\right]$$

$$- \beta p^W_{s,t} \left[(1 - \kappa_{w,s})A^H_{t+1}(w^*_s, t+1) + \kappa_{w,s}A^H_{t+1}(w_s, t+1)\right]$$

We again have the same problem, so we define

$$S^h_{s,t} = \chi \frac{h_{s,t}^{1+\varphi}}{1 + \varphi} + \beta(1 - \delta_{x,s})\xi_{w,s}S^h_{s,t+1}$$

$$S^{wh}_{s,t} = u'(c_{s,t})h_{s,t}(1 - \tau^w_t) + \beta(1 - \delta_{x,s})\frac{(1 + \pi)}{(1 + \pi_{t+1})}\xi_{w,s}S^{wh}_{s,t+1}$$
Value functions - worker

And we obtain

\[
A_t^H(w^*_s, t) = \left( S_{s,t}^{wh}(w^*_s, t - b_{s,t}) \right) - \beta(1 - \delta_{x,s})\xi_{w,s} \left( S_{s,t+1}^{wh}(w^*_s, t+1 - b_{s,t+1}) \right)
\]

\[
- S_{s,t}^h + \beta(1 - \delta_{x,s})\xi_{w,s} S_{s,t+1}^h
\]

\[
+ \beta \left[ 1 - \delta_{x,s} - (1 - \kappa_{w,s})\rho_{s,t}^W \right] A_{t+1}^H(w^*_s, t+1) - \beta\kappa_{w,s}\rho_{s,t}^W A_{t+1}^H(w_s, t+1)
\]

We do the same for the value function for the average wage of the worker.
A firm posting a vacancy for household type $s$ must pay a per-period constant cost $\psi_s$ for having a vacancy open. $\kappa_{w,s}$ is the probability that a firm cannot renegotiate the wage for a newly hired worker from segment $s$. The free-entry condition is:

$$\psi_s = p_{s,t}^F \frac{u'(c_{s,t+1})}{u'(c_{s,t})} \left[ (1 - \kappa_{w,s})A_t^F(w_{s,t+1}^*) + \kappa_{w,s}A_t^F(w_{s,t+1}) \right].$$
Wages and hours

Assuming standard (efficient) Nash bargaining between households and labour firms, every period, wages and hours worked are determined by maximising the following expression, where $0 < \eta_s < 1$ measures the bargaining power of workers of type $s$:

$$\max_{w^*_s,t, h_s,t} \left( A^H_t(w^*_s, t) \right)^{\eta_s} \left( A^F_t(w^*_s, t) \right)^{1-\eta_s}.$$

The result is that wages are split according to the Nash sharing rule:

$$\eta_s(1 - \tau_{wh}^t)A^F_t(w^*_s, t) = (1 - \eta_s)(1 + \tau_{wf}^t)A^H_t(w^*_s, t).$$

Hours are set as:

$$\alpha_H x_{s,t}(h_s,t)^{\alpha_H - 1} = \frac{\chi}{u'(c_{s,t}) (1 - \tau_{wh}^t)} (h_s,t)^{\varphi}.$$
Calibrated using data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Home</th>
<th>REA</th>
<th>US</th>
<th>RW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matching probability, Ricardian workers, ((p^W_i))</td>
<td>0.3021</td>
<td>0.2238</td>
<td>0.5292</td>
<td>0.3442</td>
</tr>
<tr>
<td>Matching probability, HtM workers, ((p^W_j))</td>
<td>0.2090</td>
<td>0.1848</td>
<td>0.5385</td>
<td>0.2598</td>
</tr>
<tr>
<td>Matching probability, firms, ((p^F_s))</td>
<td>0.70</td>
<td>0.70</td>
<td>0.70</td>
<td>0.70</td>
</tr>
<tr>
<td>Matching efficiency, Ric. w., ((\varphi_{i,M}))</td>
<td>0.4598</td>
<td>0.3957</td>
<td>0.6086</td>
<td>0.4908</td>
</tr>
<tr>
<td>Matching efficiency, HtM w., ((\varphi_{j,M}))</td>
<td>0.5496</td>
<td>0.5363</td>
<td>0.6642</td>
<td>0.5741</td>
</tr>
<tr>
<td>Vac. posting cost, Ric. w., ((\Psi_i))</td>
<td>0.4091</td>
<td>0.6768</td>
<td>1.1325</td>
<td>0.9170</td>
</tr>
<tr>
<td>Vac. posting cost, HtM w., ((\Psi_j))</td>
<td>1.2933</td>
<td>1.0133</td>
<td>0.8246</td>
<td>1.1525</td>
</tr>
<tr>
<td>Break-up rate, Ric. w., ((\delta_{x,i}))</td>
<td>0.0203</td>
<td>0.0298</td>
<td>0.0592</td>
<td>0.0344</td>
</tr>
<tr>
<td>Break-up rate, HtM w., ((\delta_{x,j}))</td>
<td>0.0443</td>
<td>0.0348</td>
<td>0.1179</td>
<td>0.0359</td>
</tr>
<tr>
<td>Disutility of labour, Ric. w., ((\chi_i))</td>
<td>1.1481</td>
<td>1.2333</td>
<td>1.3882</td>
<td>1.4416</td>
</tr>
<tr>
<td>Disutility of labour, HtM w., ((\chi_j))</td>
<td>4.6902</td>
<td>4.2066</td>
<td>4.8728</td>
<td>4.4392</td>
</tr>
<tr>
<td>Replacement ratio, Ric. w., ((rrat_i))</td>
<td>0.590</td>
<td>0.590</td>
<td>0.084</td>
<td>0.386</td>
</tr>
<tr>
<td>Replacement ratio, HtM w., ((rrat_j))</td>
<td>0.228</td>
<td>0.486</td>
<td>0.084</td>
<td>0.320</td>
</tr>
<tr>
<td>Unemployment rate, ((un))</td>
<td>0.0696</td>
<td>0.1038</td>
<td>0.0605</td>
<td>0.0694</td>
</tr>
<tr>
<td>Unemployment rate, HtM w., ((un_j))</td>
<td>0.1437</td>
<td>0.1334</td>
<td>0.0918</td>
<td>0.0930</td>
</tr>
</tbody>
</table>

Note: REA=Rest of the euro area; US=United States; RW=Rest of world

Sources: Eurostat (unempl. r.), OECD (repl. r., unempl. r.), BLS (unempl. r.)
Calibrated based on the literature

<table>
<thead>
<tr>
<th>Model</th>
<th>Home</th>
<th>REA</th>
<th>US</th>
<th>RW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inverse of the Frisch elasticity of labour supply ($\zeta$)</td>
<td>5.00</td>
<td>5.00</td>
<td>5.00</td>
<td>5.00</td>
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<tr>
<td>Matching elasticity, Ric. w., ($\mu_i$)</td>
<td>0.50</td>
<td>0.50</td>
<td>0.50</td>
<td>0.50</td>
</tr>
<tr>
<td>Matching elasticity, HtM w., ($\mu_j$)</td>
<td>0.20</td>
<td>0.20</td>
<td>0.20</td>
<td>0.20</td>
</tr>
<tr>
<td>Bargaining power, Ric. w., ($\eta$)</td>
<td>0.50</td>
<td>0.50</td>
<td>0.50</td>
<td>0.50</td>
</tr>
<tr>
<td>Bargaining power, HtM w., ($\eta$)</td>
<td>0.50</td>
<td>0.50</td>
<td>0.50</td>
<td>0.50</td>
</tr>
<tr>
<td>Prob. to renegotiate existing wage, Ric. w., ($\xi_{w,i}$)</td>
<td>0.8879</td>
<td>0.8879</td>
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<td>0.8879</td>
</tr>
<tr>
<td>Prob. to renegotiate existing wage, HtM w., ($\xi_{w,j}$)</td>
<td>0.8879</td>
<td>0.8879</td>
<td>0.8879</td>
<td>0.8879</td>
</tr>
<tr>
<td>Prob. to start job at avg. wage, Ric. w., ($\kappa_{w,i}$)</td>
<td>0.7</td>
<td>0.7</td>
<td>0.7</td>
<td>0.7</td>
</tr>
<tr>
<td>Prob. to start job at avg. wage, HtM w., ($\kappa_{w,j}$)</td>
<td>0.7</td>
<td>0.7</td>
<td>0.7</td>
<td>0.7</td>
</tr>
</tbody>
</table>

Note: REA=Rest of the euro area; US=United States; RW=Rest of world

Sources: De Walque et al. (2009), Petrongolo and Pissarides (2001)
Contractionary demand shock - EA-wide

With IT

With ASUT

With AIT

Export

Consumption

Investment

With $u=2$  
With $u=0$  
ASUT with $u=3$

SG, PJ, ML (BdP, ECB, CBI)

MP Rules and Labour

22-23 May 2023
Contractionary demand shock - country-specific

With IT

With ASUT

With AIT

Output

Unempl. - Ricard.

Unempl. - HtM

REA, $\phi_u = 2$

REA, $\phi_u = 0$

REA, ASUT, $\phi_u = 3$

Home, $\phi_u = 2$

Home, ASUT, $\phi_u = 3$

SG, PJ, ML (BdP, ECB, CBI)

MP Rules and Labour

22-23 May 2023
Contractionary demand shock - country-specific labour

With IT

With ASUT

With AIT

Vacancies - HtM

Vacancies - Ricardian

C of HtM / C Ric.

REA, $\phi_u=2$

REA, $\phi_u=0$

REA, ASUT, $\phi_u=3$

Home, $\phi_u=2$

Home, $\phi_u=0$

Home, ASUT, $\phi_u=3$