The views expressed in this paper are those of the discussant and do not represent those of the European Central Bank.
Outline

Introduction

Comments
- General comments
- Implications and realism of key assumptions
- Policy experiments
- Role of employment in euro area crisis
- Other comments
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▶ Government debt allows economic expansion by financing banks’ loan provision and thus relaxing firms’ pre-financing constraints for old and new workers.

▶ Default (risk) inhibits loan provision and forces firms to fire and reduce new hires, thus leading to recessions.

▶ Co-existence of high debt-to-GDP ratios and low spreads and default probabilities.

▶ Occurrence of default in (bad and) good times.

▶ Clustered default episodes (“serial defaults”).

▶ ... assesses policy experiments to reduce employment cost of default.

▶ Labour market: wage and unemployment subsidies alleviate firms’ pre-financing constraints.

▶ Bank regulation: higher capital requirements/sovereign debt exposures for banks enhance loan provision.
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  - No clear representation of relative contribution of different factors to the employment cost of default ⇒ use law of motion of employment?
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- Consider the private sector equilibrium \( \{s, R, v\} \):

\[
\begin{align*}
\text{s} : & \quad s = 1 - G(z - Rw) + R \chi W = L^b = L^f = w(1 - s)N + av \\
\text{R} : & \quad R = \chi W = L^b = L^f = w(1 - s)N + av \\
\text{v} : & \quad \begin{cases} 
> 0 & \text{if } Ra \leq \lambda_f [1 - (1 - s)N, v] \left[ \frac{1}{1 + r} \right] E_z \{ \mathcal{J}(\Omega', D) \} \\
= 0 & \text{otherwise}
\end{cases}
\end{align*}
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Implications and realism of key assumptions (2/3)

Given wage setting with fixed output sharing ($w = z - \omega$),

$$s = 1 - G[(1 - R)z + R\omega].$$

Since $R > 1$, if $\uparrow z \Rightarrow \uparrow s \Rightarrow \uparrow u$. 
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Since \(R > 1\), if \(\uparrow z \Rightarrow \uparrow s \Rightarrow \uparrow u\). If the participation constraint is binding,

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R = (1 + r) \left[ \lambda - \frac{W}{w(1 - s)N + av} \right].
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- **Ceteris paribus**, higher productivity is associated with higher unemployment and finance premium.
Implications and realism of key assumptions (2/3)

- Given **wage setting** with fixed output sharing \( w = z - \omega \),

\[
s = 1 - G[(1 - R)z + R\omega] < 0
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  - during expansions, \( \downarrow \) employment cost of default \( \Rightarrow \uparrow \) incentives to “default in good times”. Model tailored to this result?
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  \(\Rightarrow\) what if wage setting with constant share of output \((w = \omega z)\)?
Implications and realism of key assumptions (3/3)

- Given **static banking** \( (\phi = 0 \Rightarrow W = \kappa + \gamma qB') \),

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- **Ceteris paribus**, if only current value of bond holdings represents wealth, loan provision is only partially history dependent (only debt, not cumulated wealth) and heavily relies on debt.

- Issues:
  - if \(\uparrow\) reliance on debt \(\Rightarrow\) \(\uparrow\) incentives to quickly accumulate debt \(\Rightarrow \uparrow\) incentives for "serial defaults".
  - \(\uparrow\) employment cost of default \(\Rightarrow \uparrow\) incentives to default only for high debt (hence "high debt-low spreads"). Model tailored to this result?

- Gertler and Karadi (2011) calibrate \(\phi = 0.972\) to have expected bankers' lifetime of a decade. How realistic? \(\Rightarrow\) what if \(\phi > 0\)?
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Policy experiment (1/2): capital requirements

- If $\uparrow$ capital requirements ($\kappa$) $\Rightarrow \downarrow$ unemployment, $\uparrow$ default probability and $\downarrow$ debt ratio on average $\Rightarrow$ capital requirements are good!
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- However, higher capital requirements should make loans more expensive and, thus, reduce the loan supply curve.
- For instance, regulators could impose a limit on leverage:

$$\frac{L}{W} = \chi \leq \bar{\chi} \iff R \leq 1 + (1 + r) \left( \lambda - \frac{1}{\bar{\chi}} \right)$$

$$\Rightarrow L = \min \left\{ \frac{\kappa + \gamma qB'}{\lambda - \frac{R-1}{1+r}}, \bar{\chi}(\kappa + \gamma qB') \right\}$$

where $\bar{\chi} \geq 0$ is the maximum leverage for banks and is tighter than the participation constraint.
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- Alternatively, regulators could impose a unit cost on loan provision, so that the participation constraint would yield:

$$P_{j,t} \geq (\lambda + \bar{\zeta})L_{j,t} \Rightarrow L_{j,t} = \frac{\kappa + \gamma q_t B_{t+1}}{\lambda + \bar{\zeta} - \frac{R_t-1}{1+r}}$$

where $\bar{\zeta} \geq 0$ is the unit cost.
Policy experiment (2/2): banks’ debt exposure

- If $\downarrow$ debt exposure of banks ($\gamma$) $\Rightarrow$ $\uparrow$ unemployment, $\downarrow$ default probability and $\uparrow$ debt ratio on average $\Rightarrow$ lower banks’ exposure is good for commitment!

Intuition: if $\downarrow$ $\gamma$ $\Rightarrow$ $\uparrow$ $B' \text{ needed to finance the same amount of loans (even more so when } \phi = 0) \Rightarrow \uparrow$ reliance on debt $\Rightarrow \uparrow$ employment cost of default.

- However, the government does not account for the depositors/bankers' utility (despite maximising social welfare).

Intuition: if $\downarrow$ $\gamma$ $\Rightarrow$ $\downarrow$ loss for depositors $\Rightarrow$ $\downarrow$ cost of default.

- Models with domestic and foreign debt (e.g. Gennaioli, Martin and Rossi, 2014; Mallucci, 2015) typically internalise social welfare and associate lower domestic shares of debt with higher default probabilities and lower debt ratios.

Likewise, standard models (e.g. Arellano, 2008) predict counter-cyclical spreads and have only foreign investors ($\gamma = 0$) VS this model predicts pro-cyclical spreads when has mostly foreign investors (low $\gamma$). This seems at odds with empirical evidence.
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► If \( \downarrow \text{debt exposure of banks} (\gamma) \Rightarrow \uparrow \text{unemployment}, \downarrow \text{default probability} \) and \( \uparrow \text{debt ratio on average} \Rightarrow \text{lower banks’ exposure is good for commitment!} \)

► Intuition: if \( \downarrow \gamma \Rightarrow \uparrow B' \) needed to finance the same amount of loans (even more so when \( \phi = 0 \)) \( \Rightarrow \uparrow \text{reliance on debt} \Rightarrow \uparrow \text{employment cost of default.} \)

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Default in good times

▶ if $\gamma = 0.1 \Rightarrow \text{corr}(Y, \text{spr}) = 25\%$?

<table>
<thead>
<tr>
<th>Moment</th>
<th>Description</th>
<th>Data</th>
<th>Model $\gamma \in [0.1, 0.9]$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mean</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$E(B/Y)$</td>
<td>Debt ratio</td>
<td>69%</td>
<td>69 to 115%</td>
</tr>
<tr>
<td>$E(d)$</td>
<td>Default probability</td>
<td>3%</td>
<td>1.5 to 3%</td>
</tr>
<tr>
<td>$E(u)$</td>
<td>Unemployment rate</td>
<td>7%</td>
<td>7 to 11%</td>
</tr>
<tr>
<td><strong>Correlation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$\text{corr}(Y, \text{spr})$</td>
<td>GDP and spread</td>
<td>-6%</td>
<td>-5 to 25%</td>
</tr>
<tr>
<td>$\text{corr}(Y, TB)$</td>
<td>GDP and trade balance</td>
<td>1%</td>
<td>-7 to 23%</td>
</tr>
</tbody>
</table>

Role of employment in euro area crisis

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Large theoretical literature models euro area crisis as determined by adverse demand shocks.
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- Wright (2014) provides only an accounting exercise, decomposing GDP growth into its factor contributions.
- Large theoretical literature models euro area crisis as determined by adverse demand shocks.
- This paper unveils a transmission mechanism of the real impact of default risk in high-debt/high-unemployment countries, but it does not show the determinants of the euro area crisis.
Where is the market clearing conditions for goods?

\[ z(1 - s)N = (w + \omega)(1 - s)N = \ldots? \]

If after-tax \( w \) goes to employed, where does \( \omega \) go?

No welfare implications are analysed in explaining the employment cost of default and in assessing the policy experiments. Maybe add this to tables?

Table 3: different model statistics depend differently on \( \gamma \) ⇒ make one column for each value of \( \gamma \).
Thank you for your attention!