Discussion of:

The Analytics of the Greek Crisis

by Gourinchas, Philippon, and Vayanos

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What They Do

1. Empirics: Greece was Different
   - Severity and non-recovery
   - Stands out even relative to Pegs

2. DSGE Model with Rich Intersectoral Linkages
   - H, NF, F, and G
   - Consider impressive range of structural shocks

3. Quantification
   - Shock decomposition
   - Cfacts – less leverage, no sudden stop, less stickiness, etc.
My Comments

- Rich Sectoral Interlinkages
- Most Surprising Conclusion
- Most Salient Omission
- What Can and Can’t it Do?
Rich Sectoral Interlinkages

G Borrows from Savers/ROW at Rate: \( r^g = f(r, b^g, \pi, y, \zeta^{dg}) \)
Rich Sectoral Interlinkages

\[ r^g = f(r, b^g, \pi, y, \zeta^{dg}) \]

Spending Given by:

\[ g, t = f(g_{-1}, n, r^g, b^g, \zeta^{spend}) \]
Rich Sectoral Interlinkages

G (Ocean) Borrows from Savers/ROW at Rate: $r^g = f(r, b^g, \pi, y, \zeta^{dg})$

Spending Given by: $g, t = f(g_{-1}, n, r^g, b^g, \zeta^{spend})$

Households (S & B)

Gov’t spend impacts HH default prob and rates:

$\hat{d}^h = f(y, b^h, \zeta^{dh})$

$\hat{r}^k = f(r, \hat{d}^h, \zeta^r)$

Banks
Rich Sectoral Interlinkages

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- **Firms**
- **Banks**
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Change Taxes \( \tau Y = f(y, \zeta^{tax}) \)

Gov’t spend impacts HH default prob and rates:
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Change in MC \( mc = f(r^k, z, w) \)
Sovereign Default Shock

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**Demand**

**Firms**

Change in MC \( mc = f(r^k, z, w) \)

**Banks**

Change Taxes \( \tau Y = f(y, \zeta^{tax}) \)

and gov’t borrow cost
Sudden Stop

Borrows from Savers/ROW at Rate: \( r^g = f(r, b^g, \pi, y, \zeta^{dg}) \)

Spending Given by: \( g, t = f(g_{-1}, n, r^g, b^g, \zeta^{spend}) \)

Gov't spend impacts HH default prob and rates:

\[
\begin{align*}
d^h &= f(y, b^h, \zeta^{dh}) \\
r^k &= f(r, d^h, \zeta^{r})
\end{align*}
\]

Change in MC

\( mc = f(r^k, z, w) \)
Rich Sectoral Interlinkages

• Extremely impressive, careful, thorough.

• Obvious comment / cost: Very hard to know what various sensitivities are and what’s robust, etc.

• What can be done? Wonder if profession should head in these cases toward models with clean user-friendly interfaces ...
  • To be clear: I would also be subject to this request
  • PWT as example
Investment Composition in EZ Crisis Countries

- What else? Calibration/estimation uses rich intersectoral and banking info, but would be good to focus on intersector-specific outcomes/fit
Sectoral Net Lending in Greece

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Price Dynamics Crucial Even Over Such Long Horizons

- Initial conditions on debt were biggest factor, but...

- Markup shocks (product market stickiness) and nominal rigidities significantly hindered recovery

- Model and data suggest key differences between Greece (a EZ member) and hard pegs (Latvia and Estonia)
CNR (2015)

France
- Latvia Pegged
- Latvia in Euro

Germany
- Latvia Pegged
- Latvia in Euro

Italy
- Latvia Pegged
- Latvia in Euro

United States
- Latvia Pegged
- Latvia in Euro
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Highly synchronized recessions are rare events that often are preceded by or coincide with a U.S. recession.

Source: IMF staff calculations.
Highly synchronized recessions are more protracted and severe than other recessions. Recoveries from these recessions are typically weak.
Where Does Rest of World Show Up?

- Small open economy, interaction with demand in ROW captured via $r$ and $C^F$

- Reasonable to focus on transmission via financial channel, but important for assessing lack of recovery 3 years later
Is Greece Different in this Regard?

- Share of durables in exports in 2009:Q2
  - World: 66 percent
  - Greece: 43 percent

- World import growth from 2009:Q2 to 2011:Q1 was 10 percent more in durables than nondurables

- Used model from EKNR (AER, 2016) to see how I/O linkages and trade patterns transmitted foreign spending shocks:
  - U.S.: Production declined by 1/3 of factual (08:Q3 to 09:Q2)
  - Germany: Production declined by 2/3 of factual
  - Greece: Production declined by 1/4 of factual
What to Do About This?

- Model already extremely rich, not requesting more

- But felt like more could be done within existing structure:
  - Deviate from unitary price elasticity in trade?
  - Impose and vary correlation of $C^F$ with other shocks?

- If comment is off, some discussion would be useful to reader
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Do They Address Key Questions?

- To what extent was disaster inevitable given leverage?
- Has EZ-implied nominal and real rigidity mattered?
- To what extent should we think about shock to public vs. private funding costs?
- How did debt build-up relate to EZ entry?
- What was impact of troika policies?
- What was impact of Grexit uncertainty? Would it have helped?
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- What was impact of troica policies?
- Most obvious: Methodology rules out response to (Grexit-related) uncertainty? Would Grexit have helped?
Krugman blog: [Greece might have been all fiscal, but] “what’s happening to Spain reflects the inherent problems with the euro…”

<table>
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<tr>
<th>Public debt, % of GDP</th>
<th>Greece</th>
<th>114.5</th>
<th>107.9</th>
<th>103.9</th>
<th>102.6</th>
<th>116.3</th>
<th>130.1</th>
<th>136.2</th>
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<tr>
<td>Portugal</td>
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<td>64.7</td>
<td>63.6</td>
<td></td>
<td>66.3</td>
<td>76.9</td>
<td>85.0</td>
<td>91.0</td>
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<tr>
<td>Spain</td>
<td>43.0</td>
<td>39.6</td>
<td>36.2</td>
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<td>105.8</td>
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<td></td>
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<td>119.6</td>
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<tr>
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<td>24.2</td>
<td></td>
<td>44.0</td>
<td>62.2</td>
<td>76.6</td>
<td>87.6</td>
</tr>
</tbody>
</table>

- Recalibrate model to Spain, Ireland, Portugal, etc., and compare shocks? Quantify Krugman quote?
- Common external environment, plus helps isolate potential for troika programs to distort extraction specifically in Greece.
Conclusion

• Nice paper!

• Extremely rich and detailed model, some useful/credible quantitative answers

• Unknown robustness, but service to profession – I think of it as a “proof of concept” and people can build from here.

• Answer for Greece – way too indebted – not shocking, but nothing “Greek” about the model. Would like to see it applied elsewhere