Long term impact of structural reforms in the labour market

by

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G20 Workshop: Assessing the impact of structural reforms

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OUTLINE

Topic: the effects of labour market (LM) reforms

- Same as OECD bit in the GS impact assessment
- Intuition/model on effects of reforms
- Empirical results compared to OECD
- Caveats
SAME AS OECD

- Impact on OECD indicators \{PMR, EPL, CHILDC, IMPLICIT, ALMP, ARR, R&D\}
- Apply elasticity to productivity/jobs based on research
- Reform shocks applied in IMF G20MOD
- Public investment commitments included
“.... the measures in the comprehensive growth strategies submitted as part of the Brisbane Action Plan would raise G-20 GDP by roughly 2.1 percent by 2018 if fully implemented, while recognizing the high degree of uncertainty”
The LM bit

Gains relative to Sydney policy reform scenario

- Labor market reforms
- Product market reforms
- R&D and tax reforms
- Public investment
- EU-wide policies

LM is more important in some Growth Strategies
Same as OECD

OECD estimates on effects of LM reforms, see:

- Generally, OECD “Going for Growth” report
- Specifically, Bassanini and Duval (2006, 2009)

Orlandi (2012) covers part of OECD’s LM analysis:

- Effect of Labour tax wedge
- Effect of ALMP
- Effect of Unemployment benefits
- 1st results in 2012, continuously updated in the context of the EU Semester.
Policy gaps analysis (selected) key messages

► Addressing long-term unemployment and permanent labour force exit through [...] use of effective active labour market programmes (ALMPs); and restricting early retirement and the use of inactive benefits [...]  
► Increasing job creation through reducing non-wage costs [...]  
► Removing disincentives to formal participation [...] ensuring that labour regulations and tax-benefit systems do not create disincentives.
**Model/intuition**


Labour demand:

\[ w_t - \theta almp_t - p_t = c + y_t - l_t \]

Labour supply:

\[ w_t - tax_t - p^e_t = a_0 ud_t + (1 - \mu)b^e_t - \mu pr^e_t - \beta u_t + a^w_t \]

\[ b_t = b^0_t + pr_t - \kappa tax_t \]

Equilibrium:

\[ u^*_t = \frac{-c + a_0 ud_t - \theta almp_t + (1 - \mu)b^0_t + (1 - \kappa(1 - \mu))tax_t}{\beta} \]
Model/intuition

This (basic) model suggests that $u^*_t$:

- increases as power of unions increases
- increases as labour tax wedge increases
- increases as unemployment benefits increases
- decreases as ALMP increases
\( u_t^* \) is not \( u_t \):

- need to control for the business cycle in regressions
- or use NAIRU
- need to control even for more:
  - non-cyclical part of unemployment not quite \( u_t^* \) either
  - there are hysteresis effects
  - non-cyclical part of unemployment can be affected by (temporary) medium term cycles
  - non-cyclical part of unemployment might not always return to pre-crisis level
The empirical set up


Dependent variable:
  - NAIRU (or unemployment rate plus a business cycle control)

Independent variable:
  - Set of macro variables controlling for persistent Demand effects - i.e. hysteresis effects.
  - Set of LM structural/institutional indicators $\rightarrow$ effects of LM reforms on the dependent variable
# Empirical Results

<table>
<thead>
<tr>
<th>Dependent variable:</th>
<th>NAWRU (1)</th>
<th>NAWRU (2)</th>
<th>NAWRU (3)</th>
<th>NAWRU (4)</th>
<th>Unemp. rate (5)</th>
<th>Emp. rate (6)</th>
<th>Unemp. rate (7)</th>
<th>Emp. rate (8)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unemp. benefits</td>
<td>0.04 (0.88)</td>
<td>0.05 (1.22)</td>
<td>0.17 (3.85)**</td>
<td>0.17 (3.77)**</td>
<td>0.22 (4.18)**</td>
<td>-0.12 (-1.86)*</td>
<td>0.12 (3.36)**</td>
<td>-0.10 (-3.17)**</td>
</tr>
<tr>
<td>Labour tax wedge</td>
<td>0.21 (2.88)**</td>
<td>0.22 (3.03)**</td>
<td>0.18 (2.89)**</td>
<td>0.19 (2.94)**</td>
<td>0.18 (2.39)**</td>
<td>-0.17 (-1.96)**</td>
<td>0.08 (1.60)*</td>
<td>-0.08 (-1.72)*</td>
</tr>
<tr>
<td>Union density</td>
<td>0.05 (1.24)</td>
<td>0.06 (1.29)</td>
<td>0.20 (3.16)**</td>
<td>0.19 (2.95)**</td>
<td>0.21 (2.91)**</td>
<td>-0.17 (-1.94)**</td>
<td>0.07 (1.71)*</td>
<td>-0.05 (-0.94)</td>
</tr>
<tr>
<td>ALMP</td>
<td>-0.04 (-3.58)**</td>
<td>-0.04 (-3.90)**</td>
<td>-0.01 (-1.15)</td>
<td>-0.01 (-1.22)</td>
<td>-0.03 (-2.30)**</td>
<td>0.05 (2.67)**</td>
<td>-0.01 (-1.83)*</td>
<td>0.03 (2.58)**</td>
</tr>
<tr>
<td>TFP growth rate</td>
<td>-0.15 (-3.13)**</td>
<td>-0.14 (-3.23)**</td>
<td>-0.18 (-3.19)**</td>
<td>-0.18 (-3.22)**</td>
<td>-0.14 (-2.28)**</td>
<td>0.10 (1.39)</td>
<td>-0.09 (-1.92)**</td>
<td>0.04 (0.83)</td>
</tr>
<tr>
<td>Real interest rate</td>
<td>0.20 (2.61)**</td>
<td>0.21 (3.21)**</td>
<td>0.19 (2.71)**</td>
<td>0.20 (2.74)**</td>
<td>0.19 (2.34)**</td>
<td>-0.41 (-3.58)**</td>
<td>0.11 (2.20)**</td>
<td>-0.20 (-3.45)**</td>
</tr>
<tr>
<td>Construction</td>
<td>-0.93 (-5.44)**</td>
<td>-0.93 (-5.59)**</td>
<td>-0.91 (-6.84)**</td>
<td>-0.91 (-6.75)**</td>
<td>-1.15 (-5.79)**</td>
<td>0.72 (2.97)**</td>
<td>-0.35 (-2.29)**</td>
<td>0.26 (2.13)**</td>
</tr>
<tr>
<td>Unemp. benefit dummy 2001-12</td>
<td>-</td>
<td>0.02 (0.80)</td>
<td>0.02 (0.94)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Cyclical component of labour</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-0.32 (-4.37)**</td>
<td>0.33 (3.21)**</td>
<td>-0.23 (-4.25)**</td>
<td>0.22 (3.73)**</td>
</tr>
<tr>
<td>Lagged dependent</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.66 (8.74)**</td>
<td>0.62 (11.5)**</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Period effect</td>
<td>-</td>
<td>-</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Country-specific trends</td>
<td>-</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>PCSE period correction</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>R2</td>
<td>0.88</td>
<td>0.88</td>
<td>0.96</td>
<td>0.96</td>
<td>0.94</td>
<td>0.98</td>
<td>0.97</td>
<td>0.99</td>
</tr>
<tr>
<td>Number of observations</td>
<td>363</td>
<td>363</td>
<td>363</td>
<td>363</td>
<td>363</td>
<td>317</td>
<td>337</td>
<td>310</td>
</tr>
</tbody>
</table>
**Empirical results**

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>nawru</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Macro control variables</strong></td>
<td></td>
</tr>
<tr>
<td>Employment share in construction</td>
<td>-0.558*** (0.0613)</td>
</tr>
<tr>
<td>Real interest rate</td>
<td>0.166*** (0.0297)</td>
</tr>
<tr>
<td>TFP growth</td>
<td>-0.160*** (0.0368)</td>
</tr>
<tr>
<td><strong>LM structural indicators</strong></td>
<td></td>
</tr>
<tr>
<td>Union density</td>
<td>0.0331*** (0.0125)</td>
</tr>
<tr>
<td>Labour tax wedge</td>
<td>0.253*** (0.0215)</td>
</tr>
<tr>
<td>ALMP</td>
<td>-0.0478*** (0.00355)</td>
</tr>
<tr>
<td>Unemployment benefits</td>
<td>0.0399*** (0.0135)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Period</th>
<th>(1985-2013)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observations</td>
<td>377</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.643</td>
</tr>
<tr>
<td>Number of countries</td>
<td>13</td>
</tr>
</tbody>
</table>

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1
Comments on econometric strategy

- Static regression → we are after the long run effects
- Some non-stationary variables yet we find signs of cointegration. Also, even if cointegration would fail, spurious regression issue is more benign in panel set up. (see Phillips Moon (1999, 2000); Coakley, Fuertes and Smith (2001)).
- Further checkings à la Berger and Everaert (2009) could be envisaged.
- We tested alternative estimators (FM-OLS, MG, RC). All yield broadly similar results
- Dynamic set up (ECM, if cointegration) could provide information on speed of reform effects
### Comparing Unemployment Reform Elasticities

<table>
<thead>
<tr>
<th></th>
<th>Unemployment benefits</th>
<th>ALMP intensity</th>
<th>Labour tax wedge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planas et al. (2007)</td>
<td></td>
<td></td>
<td>0.30</td>
</tr>
<tr>
<td>Berger-Everaert (2010)</td>
<td></td>
<td></td>
<td>0.10</td>
</tr>
<tr>
<td>Daveri-Tabellini (2000)</td>
<td>0.10</td>
<td></td>
<td>0.30</td>
</tr>
<tr>
<td>Gianella et al. (2009)</td>
<td>0.03</td>
<td></td>
<td>0.20</td>
</tr>
<tr>
<td>Elmeskov et al (1998)</td>
<td>0.10</td>
<td>-0.10 to -0.50</td>
<td>0.10</td>
</tr>
<tr>
<td>Bassanini-Duval (2006)</td>
<td>0.04 to 0.13</td>
<td>-0.03</td>
<td>0.25</td>
</tr>
<tr>
<td>Orlandi (latest)</td>
<td>0.04</td>
<td>-0.05</td>
<td>0.25</td>
</tr>
<tr>
<td>Growth Strategies assumption</td>
<td>0.11</td>
<td>-0.02</td>
<td>0.25 (?)</td>
</tr>
</tbody>
</table>
Caveats

▶ Indicators used have their own limits
▶ Elasticities estimates are uncertain (many alternative regressions)
▶ Are we overlooking policy interactions (see e.g. Fiori et al (2012)) → the “strategy” part of Growth Strategies
▶ How do reforms interact with macro policies?
▶ How quickly should we phase in implementation of reforms (i.e. phase in shocks into the IMF model)?
Caveats

Disclaimer (1) – high-level estimate

Quantification – are the commitments likely to raise G-20 GDP by 2%?

- This is a “top-down” exercise
- It is based on indicators, not specific policy measures
- Country-specific results should be treated as indicative
- Only structural reform measures are included

Results should provide an indication of the overall impact of the G-20 commitments
Concluding remarks

- Reform elasticities used by OECD plausible
- Caveats → large uncertainties surrounding quantification
- Communication risky and challenging
- Do we need to be precise?
- Some empirically validation important (OECD stands as a prominent contributor in this field)
- Imprecise as it might quantification and indicators useful/efficient to monitor complex dynamics and spot issues.
- Country-led country-owned adds the narrative but quantification helps consistency across countries.
- Why not use indicators more prominently also for monitoring of implementation, to foster consistency?
Thank you!
Indicators’ definition

- Labour tax wedge: labour tax wedge on low wage (i.e. 67% of AW) earners. Wedge comprises income tax on gross wage plus employee’s and employer’s social security contributions.

- UB repl. rate: average across 3 family types, average and low wage earner case and across 2 unemployment spell situations (i.e. overall UB generosity indicator combines 12 types of worker situations).

- ALMP: cat. 1-7 of Eurostat LMP indicator. Cat 8-9 is ”passive” LMP (out-of-work benefits, early retirement). We compute ALMP per unemployed, divided by GDP per capita (i.e. a comparable ALMP ”intensity” indicator).