Measuring consolidation efforts on the tax side

DG ECFIN

DG ECFIN taxation workshop
Brussels, 18 October 2012
Outline

1. Measure tax consolidation efforts
2. Definition of discretionary tax measures (DTM)
3. Size of DTM
4. Determinants of DTM
5. Further research
1. Measure tax consolidation efforts

- Two approaches to identify consolidation efforts:
  - **Top-down**: correcting the overall budget balance from the cyclical component (not in the hand of the government)
    - used in the SGP to check compliance with medium-term budgetary objectives
  - **Bottom-up**: adding all the discretionary measures identified one by one
    - used in the SGP to apply the expenditure benchmark

- So important to collect discretionary tax measures (DTM) for fiscal surveillance, in particular to measure consolidation efforts.
2. Definition of DTM

- A DTM corresponds to
  "any legislative or administrative change in policy that has an impact on tax revenues"

- Should be distinguished from:
  - the impact of automatic indexation
  - revenue increases mandated by law (i.e. automatic increase in revenues due to increase in expenditure)
2. Definition of DTM

• DTM include:
  o measures already adopted
  o measures planned with some certainty (credibly announced and known with sufficient details)
  o measures foreseen for the future and included in the budgetary projection but not yet precisely known

• Only the 2 first categories are covered in the following analysis
2. Definition of DTM

- Data are collected by the European Commission in the context of the Output Gap Working Group of the EPC
  - to better interpret the Cyclically-Adjusted Balance (CAB)
  - to better understand the pattern and determinants of DTM
3. Size of DTM

On average, over the period 2001-2012 in the EU:

• Share of DTM is almost nil (<0.1% of GDP) because
  • DTM cancel out over the business cycle
  • country business cycles are not fully synchronised across MS
  • compensating shifts among tax categories

• As a result, the average share of DTM is larger in absolute values (regardless of the sign): 0.4% of GDP
3. Size of DTM

DTM patterns vary across countries

![Graph showing DTM patterns across years for different countries with tax hikes and tax cuts represented.]
3. Size of DTM

DTM compensate among tax categories

Average 2001-2012

[Graph showing DTM shares (%gdp) for different countries with categories Direct, Indirect, and SSC.

Countries: AT, BE, BG, CY, CZ, DE, DK, EE, ES, FI, FR, IE, IT, LT, LV, MT, NL, PL, PT, SE, SI, SK, UK]
3. Size of DTM
Total Levies

<table>
<thead>
<tr>
<th>Year Period</th>
<th>European Union</th>
<th>Euro Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001-2007</td>
<td>-0.2</td>
<td>-0.2</td>
</tr>
<tr>
<td>2008-2010</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>2011-2012</td>
<td>0.4</td>
<td>0.4</td>
</tr>
</tbody>
</table>

European Union
Euro Area
3. Size of DTM

DTM are related to shifts in policy regimes:

- **Pre-crisis (2001-2007):**
  - positive OG and DTM cuts (pro-cyclical tax policy)
  - "benign neglect": revenue windfalls used for structural expenditure and tax cuts

- **Crisis (2008-2010):**
  - negative OG and DTM cuts (counter-cyclical tax policy)
  - large stimulus measures

- **Consolidation (2011-2012):**
  - negative OG and DTM hikes (pro-cyclical tax policy)
  - consolidation efforts, despite poor cyclical conditions
3. Size of DTM
2 measures of consolidation efforts in the European Union

![Graph showing DTM and change in CAB over 3 periods: 2001-2007, 2008-2010, 2011-2012. The graph indicates the change in DTM (bottom-up) and change in CAB (top-down) with specific values for each period.]
3. Size of DTM

Total Levies

- Pro-cyclical in boom
- Counter-cyclical in recession
- Pro-cyclical in recession

Year highlights:
- 2001
- 2002
- 2003
- 2004
- 2005
- 2006
- 2007
- 2008
- 2009
- 2010
- 2011
- 2012

Excludes outside values.
3. Size of DTM
Direct and Indirect Taxes

![Graph showing changes in DTM for European Union and Euro Area]

- **Tax Hikes**
  - 2001-2007: -0.4
  - 2008-2010: -0.2
  - 2011-2012: 0.0

- **Tax Cuts**
  - 2001-2007: 0.2
  - 2008-2010: 0.4
  - 2011-2012: 0.2

**European Union**
**Euro Area**
4. Determinants of DTM

- First econometric analysis stresses the absence of convincing explanatory variables of DTM, which confirms the story of change of different policy regimes (captured by large residual of equation)

\[ DTM_{i,t} = \beta_0 + \beta_1 OG_{i,t-1} + \beta_2 X_{i,t-1} + \varepsilon_{i,t} \]
4. Determinants of DTM

- **Cyclicality**: weak: confirms the story of irregular cyclicality ("shifts in policy regimes")

- **Budget balance**: statistical significant impact but limited size; the higher the budget deficits (surplus), the stronger discretionary tax hikes (cuts)

- **Debt-to-GDP, Tax-to-GDP, Crisis**: no evidence of impact
### 4. Determinants of DTM

#### Determinants of DTM

<table>
<thead>
<tr>
<th></th>
<th>(1) Direct</th>
<th>(2) Indirect</th>
<th>(3) Total Tax</th>
<th>(4) SSC</th>
<th>(5) Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>L. Output Gap</td>
<td>0.00425</td>
<td>0.0148*</td>
<td>0.0191</td>
<td>-0.0114*</td>
<td>0.00768</td>
</tr>
<tr>
<td></td>
<td>(0.45)</td>
<td>(1.72)</td>
<td>(1.60)</td>
<td>(-1.82)</td>
<td>(0.55)</td>
</tr>
<tr>
<td>L. Budget Balance</td>
<td>-0.0256**</td>
<td>-0.0289**</td>
<td>-0.0546***</td>
<td>-0.00625</td>
<td>-0.0608***</td>
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<tr>
<td></td>
<td>(-2.10)</td>
<td>(-2.58)</td>
<td>(-3.52)</td>
<td>(-0.77)</td>
<td>(-3.36)</td>
</tr>
<tr>
<td>L. Debt to GDP</td>
<td>0.334</td>
<td>-0.115</td>
<td>0.219</td>
<td>-0.0795</td>
<td>0.139</td>
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<tr>
<td></td>
<td>(0.99)</td>
<td>(-0.37)</td>
<td>(0.51)</td>
<td>(-0.35)</td>
<td>(0.28)</td>
</tr>
<tr>
<td>L2. Tax to GDP</td>
<td>0.0104</td>
<td>-0.0251</td>
<td>-0.0148</td>
<td>-0.0109</td>
<td>-0.0257</td>
</tr>
<tr>
<td></td>
<td>(0.55)</td>
<td>(-1.45)</td>
<td>(-0.62)</td>
<td>(-0.87)</td>
<td>(-0.92)</td>
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<tr>
<td>Crisis</td>
<td>0.0587</td>
<td>-0.00929</td>
<td>0.0494</td>
<td>0.000673</td>
<td>0.0500</td>
</tr>
<tr>
<td></td>
<td>(1.08)</td>
<td>(-0.19)</td>
<td>(0.71)</td>
<td>(0.02)</td>
<td>(0.62)</td>
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<tr>
<td>Constant</td>
<td>-0.841</td>
<td>1.184</td>
<td>0.343</td>
<td>0.509</td>
<td>0.852</td>
</tr>
<tr>
<td></td>
<td>(-1.05)</td>
<td>(1.61)</td>
<td>(0.34)</td>
<td>(0.95)</td>
<td>(0.72)</td>
</tr>
<tr>
<td>Observations</td>
<td>230</td>
<td>230</td>
<td>230</td>
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<td>230</td>
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<tr>
<td>R-squared</td>
<td>0.092</td>
<td>0.060</td>
<td>0.127</td>
<td>0.044</td>
<td>0.132</td>
</tr>
</tbody>
</table>

* t statistics in parentheses

* p<0.10, ** p<0.05, *** p<0.01
5. Short-term tax elasticities
Gross elasticities versus elasticities net of DTM