Fiscal Procyclicality and Over-optimism in Official Forecasts

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Keynote session
Conference on Fiscal Policy and the Macroeconomy
Johns Hopkins School of Advanced International Studies
May 13, 2016
Thank you, Carlos & Guillermo, for organizing a conference on fiscal policy!

- Under post-2008 conditions (ZLB, etc.), we have reason to think that fiscal policy is “more powerful,” vs. monetary policy.
- Yet economists continue to lavish more attention on monetary policy than fiscal. Why?
- Common answer: fiscal policy is “politically constrained.”
- That is true, but not a good reason.
  - Indeed, if the political process gets fiscal policy wrong, all the more reason for economists to participate!
  - But, true, we need to think about the political economy.
There are many reasons why attempts to pursue countercyclical fiscal policy fell out of favor.

One is the difficulty of getting the timing right for discretionary policy.

But that is no excuse for pursuing procyclical fiscal policy!
Procyclicality

- Fiscal policy has historically tended to be pro-cyclical in a majority of countries, especially developing countries.
  - Correlation of income & spending mostly positive:
  - Tax policy tends to be procyclical as well:
Correlations between Gov't Spending & GDP
1960-1999

G always used to be pro-cyclical for most developing countries.

Adapted from Kaminsky, Reinhart & Vegh (2004)
An important development -- some developing countries were able to break the historic pattern after 2000:

- Taking advantage of the boom of 2002-2008
  - to run budget surpluses & build reserves,
- Thereby earning the ability to expand fiscally in the 2008-09 crisis.
- Chile, Botswana, Malaysia, Indonesia, Korea...
- How were they able to achieve countercyclicality?
Correlations between Government spending & GDP

DEVELOPING: 43% (or 32 out of 75) countercyclical. The figure was 17% (or 13 out of 75) in 1960-1999.

INDUSTRIAL: 86% (or 18 out of 21) countercyclical. The figure was 80% (or 16 out of 20) in 1960-1999.
Update of Correlation (G, GDP): 2010-14
Back-sliding among some countries.

DEVELOPING: 37% (or 29 out of 76) pursue counter-cyclical fiscal policy.
INDUSTRIAL: 63% (or 12 out of 19) pursue counter-cyclical fiscal policy.
Who achieves countercyclical fiscal policy?

Countries with “good institutions”

"On Graduation from Fiscal Procyclicality,"
Frankel, Végh & Vuletin; J.Dev.Economics, 2013.
The quality of institutions varies, not just across countries, but also across time.

**1984-2009**

**Good institutions; Countercyclical spending**

**Worsened institutions; More-cyclical spending.**

**Improved institutions; Less-cyclical spending.**

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**Notes:** The cyclical components have been estimated using the Hodrick-Prescott Filter. A positive (negative) correlation indicates procyclical (countercyclical) fiscal policy. Real government expenditure is defined as central government expenditure and net lending deflated by the GDP deflator. Country correlations between the cyclical components of real government expenditure and real GDP (i.e., Corr(G, GDP)) are calculated as 20-year rolling windows for the period 1960-2009.

Institutional quality is a normalized index that ranges between 0 (lowest institutional quality) and 1 (highest institutional quality). The index is calculated as the average of four components: investment profile, corruption, law and order, and bureaucratic quality.

Actual institutional quality (i.e., for each year) is used.

Institutional quality is shown on the right axis and the correlation between the cyclical components of real government expenditure and real GDP is shown on the left.


Frankel, Végh & Vuletin, 2013.
The countries that graduated to countercyclical fiscal policy after 2000, statistically, are those where institutional quality improved.

"On Graduation from Fiscal Procyclicality,” Frankel, Végh & Vuletin; *J. Dev. Econ.*, 2013.
How can countries avoid procyclical fiscal policy?

- What *are* “good institutions,” exactly?

- Rules?
  - Budget deficit ceilings (SGP) or debt brakes?
    - Have been tried by many countries:
      - 97 IMF members, by 2013.
      - Usually fail.
  - Rules for *cyclically adjusted* budgets?
    - Countries can more likely stick with them. But...

- Rules don’t address a major problem:
  - Over-optimism in official forecasts
    - of GDP growth rates, tax receipts & budgets.
Countries with Balanced Budget Rules frequently violate them.

Compliance with Fiscal Rules, 1985–2012 (Percent compliance)

- BBR: Balanced Budget Rules
- DR: Debt Rules
- ER: Expenditure Rules

Compliance < 50%
To expect countries to comply with the rules during recessions is particularly unrealistic (and not even necessarily desirable).

Bad times: years when output gap < 0
Over-optimism in official forecasts

- Statistically significant findings among 33 countries

- Official forecasts on average are overly optimistic, for:
  - (1) budgets &
  - (2) GDP.

- The bias toward optimism is:
  - (3) stronger the longer the forecast horizon;
  - (4) greater in booms.
Implication of forecast bias for actual budgets

- Can lead to pro-cyclical fiscal policy:
  - If the boom is forecast to last indefinitely, there is no apparent need to retrench.

- BD rules don’t help.
  - The SGP *worsens* forecast bias for euro countries.
    - Frankel & Schreger (2013)
US official projections were over-optimistic on average.

Forecasts of budget balance, one-three years ahead

Year indicates year that forecast is made

United States

Budget balance as % of GDP

1980  1990  2000  2010

Year

One year ahead  Two years ahead  Three years ahead  Actual

Graphs by Panel ID

F & Schreger, 2013
Greek official forecasts were always over-optimistic.

Greek forecasts of budget balance, one-three years ahead

Year indicates year that forecast was made

Budget balance as % of GDP

One year ahead

Two years ahead

Three years ahead

Actual

Data from Greece’s Stability and Convergence Programs.

F & Schreger, 2013
German forecasts were also usually too optimistic.
Most European official forecasts have been over-optimistic.

Figure 1 (F&S, 2013):
Mean 1-year ahead budget forecast errors, European Countries, Full Sample Period

For 17 Europeans, the bias is even higher than others, averaging:
- 0.5% at the 1-year horizon,
- 1.3% at the 2-year horizon,
- 2.4% at the 3-year horizon
Figure 2 (F&S, 2013):
Mean 2-year ahead budget forecast errors, European Countries, Full Sample Period
Table 2: Frankel (2011)

Budget balance forecast error as % of GDP, full dataset

<table>
<thead>
<tr>
<th>Variables</th>
<th>1 year ahead</th>
<th>2 years ahead</th>
<th>3 years ahead</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP gap</td>
<td>0.093***</td>
<td>0.258***</td>
<td>0.289***</td>
</tr>
<tr>
<td></td>
<td>(0.019)</td>
<td>(0.040)</td>
<td>(0.063)</td>
</tr>
<tr>
<td>Constant</td>
<td>0.201</td>
<td>0.649***</td>
<td>1.364***</td>
</tr>
<tr>
<td></td>
<td>(0.197)</td>
<td>(0.231)</td>
<td>(0.348)</td>
</tr>
<tr>
<td>Observations</td>
<td>398</td>
<td>300</td>
<td>179</td>
</tr>
<tr>
<td>R²</td>
<td>0.033</td>
<td>0.113</td>
<td>0.092</td>
</tr>
<tr>
<td>RMSE</td>
<td>2.25</td>
<td>2.73</td>
<td>3.10</td>
</tr>
</tbody>
</table>

*** p<0.01, ** p<0.05, * p<0.1.
(Robust standard errors in parentheses, clustered by country.

Note: GDP gap is lagged so that it lines up with the year in which the forecast was made, not the year being forecast.)
Econometric findings regarding bias among EU countries in particular.

- Euro countries, subject to the SGP, show even more optimism bias than others in growth forecasts, significant at 1 and 2-year horizons particularly when GDP is currently high.
- Forecasts of budget balance among euro countries also show extra bias when GDP is currently high.
Table 5(c): GDP growth rate forecast error, full dataset

<table>
<thead>
<tr>
<th>Variables</th>
<th>1 year ahead</th>
<th>2 years ahead</th>
<th>3 years ahead</th>
<th>1 year ahead</th>
<th>2 years ahead</th>
<th>3 years ahead</th>
</tr>
</thead>
<tbody>
<tr>
<td>SGP dummy</td>
<td>0.379*</td>
<td>0.780**</td>
<td>−0.555</td>
<td>0.192</td>
<td>0.221</td>
<td>−1.067*</td>
</tr>
<tr>
<td></td>
<td>(0.199)</td>
<td>(0.352)</td>
<td>(0.529)</td>
<td>(0.215)</td>
<td>(0.410)</td>
<td>(0.549)</td>
</tr>
<tr>
<td>SGP*GDPgap</td>
<td></td>
<td></td>
<td></td>
<td>0.148**</td>
<td>0.516***</td>
<td>0.522***</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(0.068)</td>
<td>(0.141)</td>
<td>(0.161)</td>
</tr>
<tr>
<td>Constant</td>
<td>0.239</td>
<td>0.914***</td>
<td>2.436***</td>
<td>0.252</td>
<td>0.887***</td>
<td>2.444***</td>
</tr>
<tr>
<td></td>
<td>(0.168)</td>
<td>(0.318)</td>
<td>(0.643)</td>
<td>(0.168)</td>
<td>(0.330)</td>
<td>(0.642)</td>
</tr>
<tr>
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<td>369</td>
<td>282</td>
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<td>368</td>
<td>282</td>
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<td>31</td>
<td>28</td>
<td>33</td>
<td>31</td>
<td>28</td>
</tr>
<tr>
<td>R²</td>
<td>0.006</td>
<td>0.006</td>
<td>0.007</td>
<td>0.011</td>
<td>0.042</td>
<td>0.040</td>
</tr>
<tr>
<td>RMSE</td>
<td>2.40</td>
<td>3.44</td>
<td>3.81</td>
<td>2.38</td>
<td>3.36</td>
<td>3.73</td>
</tr>
</tbody>
</table>

***p<0.01, **p<0.05, *p<0.1. (Robust standard errors in parentheses.) Random effects.
SGP ≡ dummy for countries subject to the SGP.
GDP gap ≡ GDP as deviation from trend.
All variables are lagged so that they line up with the year in which the forecast was made.
Table 3(c): Budget balance forecast error, full dataset

<table>
<thead>
<tr>
<th>Variables</th>
<th>1 year ahead</th>
<th>2 years ahead</th>
<th>3 years ahead</th>
<th>1 year ahead</th>
<th>2 years ahead</th>
<th>3 years ahead</th>
</tr>
</thead>
<tbody>
<tr>
<td>SGP dummy</td>
<td>0.368</td>
<td>0.922***</td>
<td>0.625</td>
<td>0.182</td>
<td>0.331</td>
<td>0.066</td>
</tr>
<tr>
<td></td>
<td>(0.342)</td>
<td>(0.329)</td>
<td>(0.415)</td>
<td>(0.335)</td>
<td>(0.355)</td>
<td>(0.449)</td>
</tr>
<tr>
<td>SGP * GDPgap</td>
<td></td>
<td></td>
<td></td>
<td>0.161**</td>
<td>0.509***</td>
<td>0.544***</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(0.065)</td>
<td>(0.147)</td>
<td>(0.148)</td>
</tr>
<tr>
<td>Constant</td>
<td>0.245</td>
<td>0.530**</td>
<td>1.235***</td>
<td>0.219</td>
<td>0.501*</td>
<td>1.240***</td>
</tr>
<tr>
<td></td>
<td>(0.198)</td>
<td>(0.268)</td>
<td>(0.408)</td>
<td>(0.193)</td>
<td>(0.268)</td>
<td>(0.404)</td>
</tr>
<tr>
<td>Observations</td>
<td>399</td>
<td>300</td>
<td>179</td>
<td>398</td>
<td>300</td>
<td>179</td>
</tr>
<tr>
<td>Countries</td>
<td>33</td>
<td>31</td>
<td>29</td>
<td>33</td>
<td>31</td>
<td>29</td>
</tr>
<tr>
<td>R²</td>
<td>0.018</td>
<td>0.023</td>
<td>0.008</td>
<td>0.029</td>
<td>0.080</td>
<td>0.076</td>
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<tr>
<td>RMSE</td>
<td>2.113</td>
<td>2.701</td>
<td>3.130</td>
<td>2.122</td>
<td>2.614</td>
<td>3.011</td>
</tr>
</tbody>
</table>

***p<0.01, **p<0.05, *p<0.1. (Robust standard errors in parentheses.) Random effects.

SGP ≡ dummy for countries subject to the SGP.

GDP gap ≡ GDP as deviation from trend.

All variables are lagged so that they line up with the year in which the forecast was made.
New research brings in private sector forecasts, from *Consensus Economics*

The extension of the analysis helps answer two important questions.

i. When the time sample is short, results based on ex post realizations can be too sensitive to particular historical outcomes: Might earlier findings of over-optimism be explained by one historical event, the severe 2008-09 crisis that everyone underestimated?

Private forecasts offer an alternative standard by which to judge performance of official forecasts, less sensitive to historically volatile ex post outcomes.

ii. If the reform proposal is that budget-makers should use independent projections such as those by private forecasters, it may be instructive to test whether private forecasters suffer from optimism bias as badly as government forecasters.
Italy is typical: Private forecasts more realistic than official forecasts

Fig. 2: Budget Balance Forecasts

Fig. 3: Real GDP Growth Forecasts

Notes: Forecast year is year being forecast. Frankel & Schreger (June 2013)
We have three main new results, for a sample of 26 countries (sample period up to 2013)

1. Official forecasters are more over-optimistic than private forecasters on average, at the 1- & 2-year horizon for budget balances and at the 1- & 2-year horizon for real GDP forecasts.

2. While euro area governments were very reluctant to forecast violations of the 3% deficit/GDP cap in the SGP; private sector forecasters were not.

3. The difference between official forecast & private forecast is positively correlated with the difference between official forecast and ex post realization.

• These results suggest that incorporating private sector forecasts into the budget process could help countries stick to fiscal rules, by identifying over-optimism ex ante rather than just ex post.
### Summary Statistics for Budget Balance Forecasts (% of GDP)

**Two-year ahead forecasts** (95 observations, 10 countries)

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Standard Error</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Official Minus Consensus</strong></td>
<td>0.478***</td>
<td>(0.086)</td>
</tr>
<tr>
<td><strong>Official Forecast Error</strong></td>
<td>1.060*</td>
<td>(0.541)</td>
</tr>
<tr>
<td><strong>Consensus Forecast Error</strong></td>
<td>0.582</td>
<td>(0.548)</td>
</tr>
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</table>

Driscoll-Kraay Standard Errors with 2 year lag. Only includes countries with at least 6 years of data.

- The official budget forecasts are over-optimistic on average.
- The private forecasts from Consensus Economics are significantly less over-optimistic than the official forecasts.
## Summary Statistics for GDP Growth Forecasts

**Two-year ahead forecasts** (278 observations, 23 countries)

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Standard Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Official Minus Consensus</td>
<td>0.135** (0.048)</td>
<td></td>
</tr>
<tr>
<td>Official Forecast Error</td>
<td>1.244  (0.738)</td>
<td></td>
</tr>
<tr>
<td>Consensus Forecast Error</td>
<td>1.110  (0.736)</td>
<td></td>
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Driscoll-Kraay Standard Errors with 2 year lag. Only includes countries with at least 6 years of data.

- As with the forecasts of budget balance, the private forecasts of GDP growth are significantly less over-optimistic than the official forecasts.
In the euro countries, which are subject to SGP rules, the optimism bias took the form of never forecasting next year’s budget deficit > 3% of GDP.

Private-sector forecasts surveyed by *Consensus Forecasts* are free to forecast budget deficits > 3% of GDP.
The official-private forecast difference is correlated with the official prediction error.

GDP Growth Forecasts, 2-Year Ahead

Frankel & Schreger (2016), Figure 4
**Table VII: Official GDP Growth Forecast Errors and Government-Private Disagreement excluding 2008-2009**

<table>
<thead>
<tr>
<th></th>
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<tr>
<td><strong>Official-Consensus</strong></td>
<td></td>
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<tr>
<td></td>
<td>0.856***</td>
<td>0.845***</td>
<td>0.471**</td>
<td>0.284*</td>
</tr>
<tr>
<td></td>
<td>(0.161)</td>
<td>(0.181)</td>
<td>(0.203)</td>
<td>(0.135)</td>
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<td><strong>Constant</strong></td>
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<tr>
<td></td>
<td>-4.669***</td>
<td>-1.855**</td>
<td>1.595***</td>
<td>1.141</td>
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<td>(0.124)</td>
<td>(0.764)</td>
<td>(0.020)</td>
<td>(0.702)</td>
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<td><strong>Observations</strong></td>
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<td></td>
<td>272</td>
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<td><strong>R-squared</strong></td>
<td></td>
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<td></td>
<td>0.416</td>
<td>0.594</td>
<td>0.424</td>
<td>0.593</td>
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<td><strong>Countries</strong></td>
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<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

The official-private difference in ex ante forecasts is significantly correlated with the ex post official prediction error. Frankel & Schreger (2016)
Conclusions

Incorporating private sector forecasts into the budget process could help countries stick to fiscal rules:

1. Official forecasters are more over-optimistic than private forecasters judged by outcomes for budget balances & real GDP.

2. While euro area governments were very reluctant to forecast violations of the 3% deficit/GDP cap in the SGP during the period 1999-2009, private sector forecasters were not.

3. The difference between official forecast & private forecast is positively correlated with the difference between official forecast and ex post realization, i.e., the prediction error.
Main papers on which the presentation was based

1) Which countries succeed in running counter-cyclical fiscal policy?

2) Are official forecasts biased (a source of pro-cyclical fiscal policy)?

3) Is the bias in government forecasts better or worse for countries subject to the euro’s Stability & Growth Pact?

4) Can private-sector forecasts improve on official forecasts?
When official forecasts of budget balance are more optimistic than private forecasts, they are too optimistic.
Two-year ahead Budget forecast
When official forecasts of GDP are more optimistic than private forecasts, they are too optimistic.
Two-year ahead GDP forecast

![Graph showing the relationship between government forecast error and private-government disagreement.](image)
Appendices

- Appendix I: Procyclical politicians in the US
- Appendix II: More on the Europe case
- Appendix III: The case of Chile’s fiscal institutions.
Appendix I: Procyclical politicians in the US

Through 3 cycles, some pursued austerity during recessions, followed by fiscal expansion when the economy was already expanding.

(3) Sept. 1990: Bush agrees to raise taxes and cut spending.
(4) June 1993: Republicans vote against Clinton budget balance law
(6) May 2003: Bush passes more tax cuts and more spending.
(7) Feb. 2009: House Republicans vote against Obama fiscal stimulus
Appendix II: More on the Europe case

Figure 2 (F&S, 2013):
Mean Budget Forecast Errors, Europe, 1995-2011
Figure 3 (F&S, 2013):
Mean GDP Growth Forecast Errors, Europe, 1995-2011
More findings regarding systematic forecast errors in Europe  
(Frankel & Schreger, 2013a).

Besides cyclicality (output gap), another determinant of government bias: they over-forecast speed of disappearance of budget deficits.

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$BBE_{t+1}$</td>
<td>$BBE_{t+2}$</td>
<td>$BBE_{t+3}$</td>
</tr>
<tr>
<td>Surplus$_t$*BudgetBalance$_t$</td>
<td>-0.080</td>
<td>-0.295**</td>
<td>-0.175</td>
</tr>
<tr>
<td></td>
<td>(0.057)</td>
<td>(0.108)</td>
<td>(0.171)</td>
</tr>
<tr>
<td>Deficit*BudgetBalance$_t$</td>
<td>-0.293***</td>
<td>-0.363**</td>
<td>-0.558***</td>
</tr>
<tr>
<td></td>
<td>(0.064)</td>
<td>(0.134)</td>
<td>(0.180)</td>
</tr>
<tr>
<td>Output Gap$_t$</td>
<td>0.651***</td>
<td>1.409***</td>
<td>1.812***</td>
</tr>
<tr>
<td></td>
<td>(0.113)</td>
<td>(0.281)</td>
<td>(0.452)</td>
</tr>
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<td>Constant</td>
<td>-0.150</td>
<td>0.459</td>
<td>0.932**</td>
</tr>
<tr>
<td></td>
<td>(0.169)</td>
<td>(0.274)</td>
<td>(0.404)</td>
</tr>
</tbody>
</table>

Observations: 243, 210, 164  
R-2: 0.213, 0.344, 0.374  
Countries: 17, 16, 15  
Year FE: No, No, No

(Robust s.e. is n parentheses, clustered at the country level.)  ***, **, &* : significance at the level of 1, 5, and 10%, respectively.)
Might the Fiscal Compact offer a solution?

• Expressing targets in cyclically adjusted terms improves the odds the countries can abide by them.
• But it doesn’t help the problem of biased forecasts.
  • It might even make it worse.
• What about the rules & institutions imposed nationally?

Another econometric finding (F&S, 2013a):
The bias is less among eurozone countries that have adopted certain rules at the national level, particularly creating an independent fiscal institution that provides independent forecasts.
Figure 6 (F&S, 2013a): Fiscal Rules in the European Union, 1990-2010
Existing national budget rules in the EU

*BBR FRI* = EC’s Fiscal Rule Index, budget balance component.

*Euro* = dummy for membership

The extra optimism-bias that comes with euro membership is reduced when euro membership is combined with national budget balance rules

– but not with FRI overall (debt, revenue, spending).

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><em>BBE</em>$_{t+1}$</td>
<td><em>BBE</em>$_{t+2}$</td>
</tr>
<tr>
<td><strong>Output Gap</strong>$_{t}$</td>
<td>0.220 (<strong>0.218</strong>)</td>
<td>0.693 (<strong>0.634</strong>)</td>
</tr>
<tr>
<td><strong>Budget Balance</strong>$_{t}$</td>
<td>-0.325*** (<strong>0.0676</strong>)</td>
<td>-0.459*** (<strong>0.115</strong>)</td>
</tr>
<tr>
<td><strong>BBR FRI</strong>$_{t}$</td>
<td>1.258 (<strong>0.982</strong>)</td>
<td>1.285 (<strong>1.320</strong>)</td>
</tr>
<tr>
<td><strong>Euro</strong>$_{t}$</td>
<td>1.433 (<strong>0.879</strong>)</td>
<td>1.218 (<strong>1.178</strong>)</td>
</tr>
<tr>
<td><strong>BBR FRI</strong>$<em>{t}$<em>OG</em>*$</em>{t}$</td>
<td>-0.148 (<strong>0.377</strong>)</td>
<td>-0.706 (<strong>0.767</strong>)</td>
</tr>
<tr>
<td><strong>BBR FRI</strong>$<em>{t}$<em>BB</em>*$</em>{t}$</td>
<td>0.056 (<strong>0.067</strong>)</td>
<td>0.142 (<strong>0.160</strong>)</td>
</tr>
<tr>
<td><strong>Euro</strong>$<em>{t}$<em>BBR FRI</em>*$</em>{t}$</td>
<td>-2.514* (<strong>1.183</strong>)</td>
<td>-2.455 (<strong>1.711</strong>)</td>
</tr>
<tr>
<td>Constant</td>
<td>-0.608 (<strong>0.767</strong>)</td>
<td>-0.956 (<strong>1.323</strong>)</td>
</tr>
<tr>
<td>Observations</td>
<td>218</td>
<td>196</td>
</tr>
<tr>
<td>R-2</td>
<td>0.437 (<strong>0.535</strong>)</td>
<td></td>
</tr>
<tr>
<td>Year FE</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Appendix III: The case of Chile’s institutions

1\textsuperscript{st} rule – Governments must set a budget target,

2\textsuperscript{nd} rule – The target is structural: Deficits allowed only to the extent that
\begin{itemize}
  \item (1) output falls short of trend, in a recession,
  \item (2) or the price of copper is below its trend.
\end{itemize}

3\textsuperscript{rd} rule – The trends are projected by 2 panels of independent experts, outside the political process.
\begin{itemize}
  \item Result: Chile avoided the pattern of 32 other governments, where forecasts in booms were biased toward optimism.
\end{itemize}
In 2000 Chile instituted its structural budget rule. The institution was formalized in law in 2006.

The structural budget surplus must be...

- 0 as of 2008 (was 1%, then ½ %, before; negative after),
- where structural is defined by output & copper price equal to their long-run trend values.

i.e., in a boom the government can only spend increased revenues that are deemed permanent; any temporary copper bonanzas must be saved.
The Pay-off

- Chile’s fiscal position strengthened immediately:
  - Public saving rose from 2.5% of GDP in 2000 to 7.9% in 2005
  - allowing national saving to rise from 21% to 24%.

- Government debt fell sharply as a share of GDP and the sovereign spread gradually declined.

- By 2006, Chile achieved a sovereign debt rating of A,
  - several notches ahead of Latin American peers.

- By 2007 it had become a net creditor.

- By 2010, Chile’s sovereign rating had climbed to A+,
  - ahead of some advanced countries. Now AA-.

- => It was able to respond to the 2008-09 recession
  - via fiscal expansion.
In 2008, the government of Chilean President Bachelet & her Fin.Min. Velasco ranked very low in public opinion polls. By late 2009, they were the most popular in 20 years. Why?

Evolution of approval and disapproval of four Chilean presidents
In 2008, with copper prices spiking up, the government of President Bachelet had been under intense pressure to spend the revenue.

- She & Fin.Min.Velasco held to the rule, saving most of it.
- Their popularity fell sharply.

When the recession hit and the copper price came back down, the government increased spending, mitigating the downturn.

- Bachelet & Velasco’s popularity reached historic highs by the time they left office.
Poll ratings of Chile’s Presidents and Finance Ministers

In August 2009, the popularity of the Finance Minister, Andres Velasco, ranked behind only President Bachelet, despite also having been low two years before.

* La evaluación positiva no es lo mismo que la adhesión política.
** Con menos de 50% de conocimiento


Nota 1: Al entrevistado se le lee una lista cerrada de personajes que debe evaluar.
Nota 2: La evaluación positiva y negativa está medida entre quienes tienen opinión (se elimina la categoría No sabe, No contesta y No conoce a la persona).
5 econometric findings regarding official forecasts in Chile.

- (1) The key macroeconomic input for budget forecasting in most countries: GDP. In Chile: the copper price.

- (2) Real copper prices revert to trend in the long run.

- But this is not always readily perceived:
  - (3) 30 years of data are not enough to reject a random walk statistically; 200 years of data are needed.
  - (4) Uncertainty (option-implied volatility) is higher when copper prices are toward the top of the cycle.

- (5) Chile’s official forecasts are not overly optimistic. It has apparently avoided the problem of forecasts that unrealistically extrapolate in boom times.
Chile’s official forecasts have *not* been over-optimistic.
In sum, Chile’s fiscal institutions appear to have overcome the problem of over-optimism:

- Chile is not subject to the same bias toward over-optimism in forecasts of the budget, growth, or the all-important copper price.

- The key innovation that has allowed Chile to achieve countercyclical fiscal policy:
  - not just a structural budget rule in itself,
  - but rather the regime that entrusts to two panels of independent experts estimation of the long-run trends of copper prices & GDP.
Application of the innovation to other countries

- Any country could adopt the Chilean mechanism.
- Suggestion: give the panels more institutional independence
  - as is familiar from central banking:
    - laws protecting them from being fired.
- Open questions:
  - Are the budget rules to be interpreted as ex ante or ex post?
  - How much of the structural budget calculations are to be delegated to the independent panels of experts?
    - Minimalist approach: they compute only 10-year moving averages.
  - Can one guard against subversion of the institutions (CBO)?
Appendix IV:
The private sector downgraded forecasts for Mexico in response to the 2008-09 global crisis, while government forecasters did not.
The private sector has also been less optimistic than government forecasters about Mexican budget prospects especially in the 2009 global crisis.
More complete list of relevant references by the author


