Real-Time Macro Monitoring and Fiscal Policy

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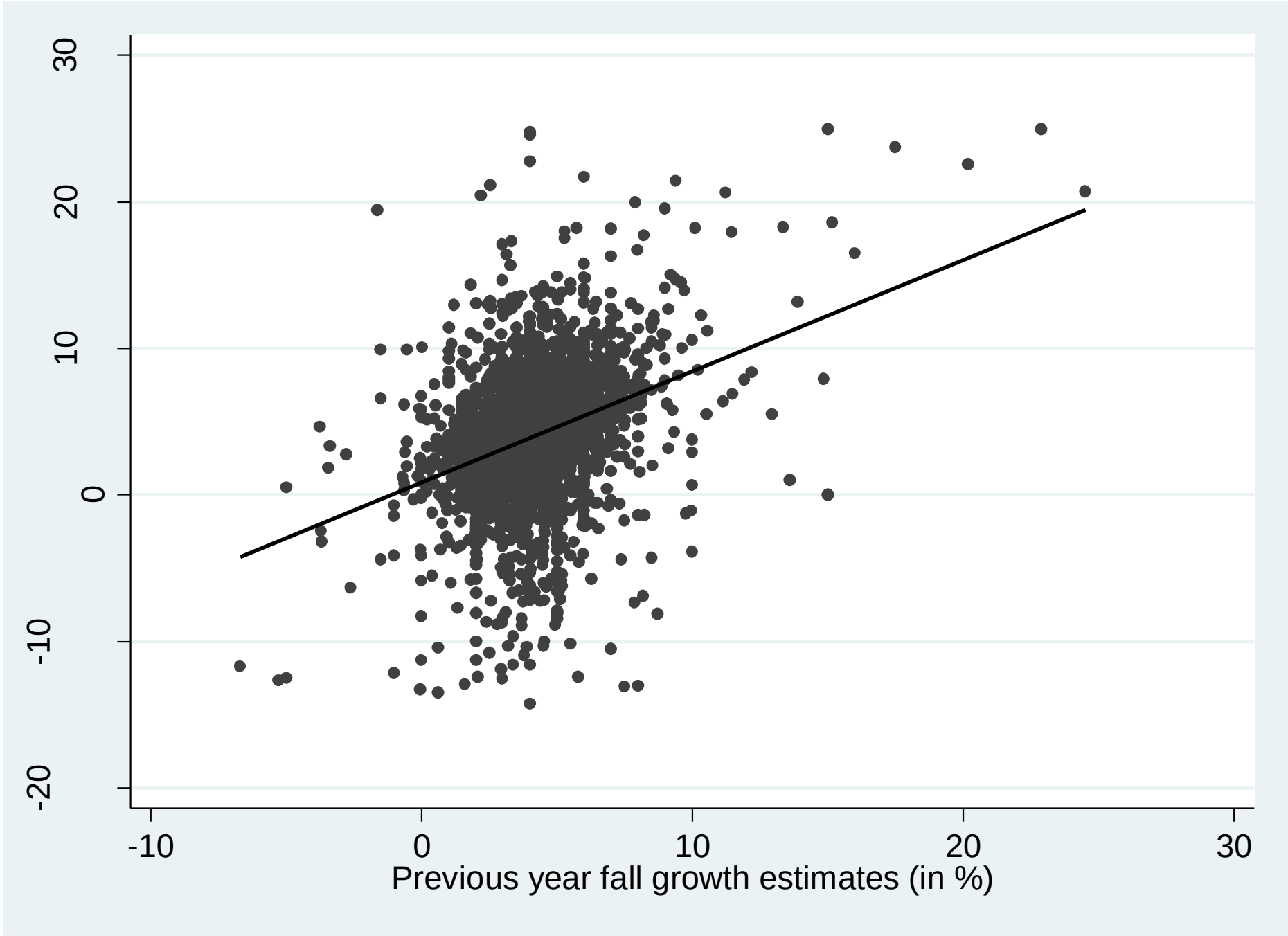
Motivation (1)

- Information on GDP growth / gap / level key ingredient for fiscal planning and fiscal surveillance
- Policy makers necessarily rely on preliminary GDP figures when making fiscal projections
- Those figures are inaccurate and get revised

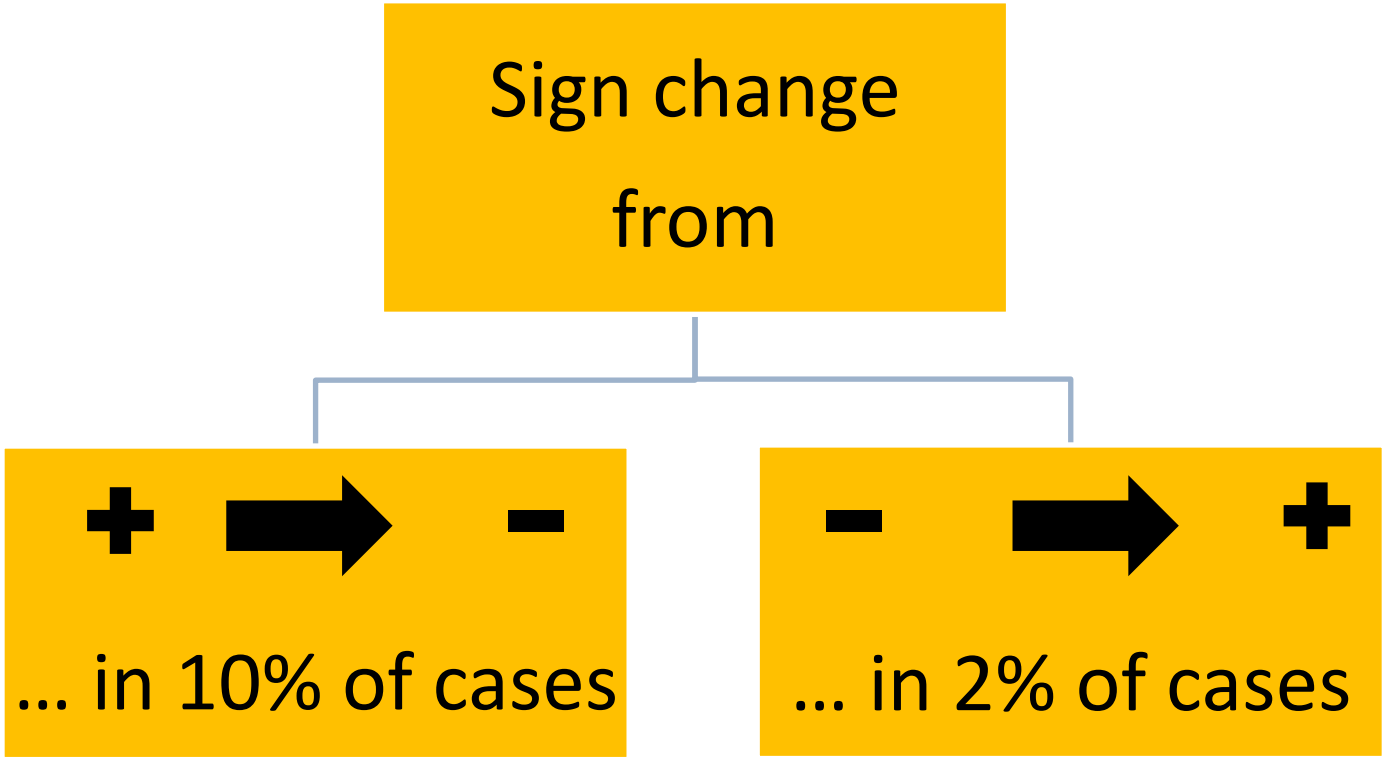
Motivation (2)

- As newer and better information becomes available, GDP figures are revised
- Real-time GDP figures conflict with final GDP figures
- Even sign of growth and output gaps may be misperceived in real time
- These revisions have long been studied, but what are the implications for fiscal management?



Source: World Economic Outlook

Sign Changes



Motivation (3)

- Fiscal policy inevitably relies on real-time output data so that policy mistakes may occur ('fiscal slippages')

- Deficit targets are missed as fiscal policy is either too tight, or unwanted debt accumulation occurs

- Structural balance key indicator but relies on RT estimate of output gap

"It does make economic sense to target cyclically adjusted rather than actual deficits. But the improvement in economics is at the cost of a reduction in precision. Nobody knows what a structural deficit is."

---Martin Wolf, Financial Times, March 6, 2012.

How do Revisions of GDP Figures affect Fiscal Policy?

1) Discrepancy between actual and predicted budget balance due automatic response of revenue and & expenditure

2) Denominator changes (budget balances measured in % of GDP)

3) Output gap revisions affect structural balance

➔ **In principle, challenges for budgetary planning & fiscal surveillance**

We model Revisions of Fiscal Aggregates

- Difference between actual and predicted overall and structural balance

$$\frac{b_t(\gamma_t)}{y_t} - \frac{\hat{b}_t(\hat{\gamma}_t)}{\hat{y}_t} \quad \text{and} \quad \frac{b_t^s(\gamma_t, z_t)}{y_t} - \frac{\hat{b}_t^s(\hat{\gamma}_t, \hat{z}_t)}{\hat{y}_t}$$

- Notation:
  - Actual output growth, level and gaps:
  - Actual overall and structural balance ,
  - 'hat' denotes prediction

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- Deviations driven by
  - differences between actual and preliminary growth / gaps / GDP
  - structural parameters (elasticities, size of deficit in previous period, etc.)

Data

- World Economic Outlook data on *preliminary* and *final*
  - GDP
  - GDP growth
  - Output gaps
- …for around 170 countries from 1990 to 2007
- WEO best data source for developing countries
- Structural parameters obtained from other sources

	r/y		b/y		ρ		$\lvert\epsilon\rvert$	
Country Group	min	max	min	max	min	max	min	max
High income: OECD	0.25	0.55	-0.10	0.05	0.90	1.20	0.02	0.30
High income: non-OECD	0.20	0.50	-0.10	0.05	0.80	1.10	0.01	0.25
Upper middle income	0.15	0.40	-0.10	0.05	0.70	1.00	0.05	0.10
Lower middle income	0.10	0.30	-0.10	0.05	0.60	0.90	0.00	0.05
Low income	0.10	0.20	-0.10	0.05	0.60	0.80	0.00	0.00
All countries	0.10	0.55	-0.10	0.05	0.60	1.20	0.00	0.30

Table 4. Revisions of the overall balance, % of GDP

(169 countries: 1991-2007; $N = 2621000$)

	Percentiles					Moments	
Country Group	10	25	50	75	90	Mean	StDev
High income: OECD	-1.18	-0.48	0.07	0.61	1.18	0.01	1.20
High income: nonOECD	-1.84	-0.69	0.21	1.05	2.25	0.16	2.24
Upper middle income	-1.57	-0.61	0.05	0.69	1.37	-0.04	1.42
Lower middle income	-0.96	-0.36	0.02	0.39	1.03	0.08	1.36
Low income	-1.17	-0.48	-0.06	0.26	0.75	-0.16	0.92
All countries	-1.26	-0.48	0.02	0.52	1.20	-0.00	1.39

Source: WEO data and own compilation

Table 6. Debt accumulation over 10 years, in % of the 10th period's GDP

(169 countries: 1991-2007; $N = 50000$)

	Percentiles					Moments	
Country Group	10	25	50	75	90	Mean	StDev
High income: OECD	-3.96	-2.18	-0.26	1.63	3.78	-0.13	3.17
High income: nonOECD	-8.52	-5.27	-2.49	0.44	2.90	-2.66	4.60
Upper middle income	-3.88	-1.97	-0.06	2.03	4.42	0.16	3.26
Lower middle income	-1.98	-0.93	0.18	1.21	2.23	0.13	1.73
Low income	-0.94	-0.07	0.88	1.90	2.98	0.97	1.57
All countries	-4.26	-1.88	-0.01	1.54	3.17	-0.31	3.31

Source: WEO data and own compilation

Conclusions & Outlook

- We show that revisions to GDP figures potentially result in significant deviations of actual fiscal outturns from fiscal plans

- Results in unplanned debt accumulation over time due to policy mistakes

- Important implications for fiscal rules:
  - Ability to observe fiscal rules undermined
  - But vulnerability of alternative FRs to output data revisions differ
  - May change policy recommendations about which FR is most appropriate

Growth revisions by country group, in percentage points

(169 countries: 1990-2007; $N = 2791$)

	Percentiles					Moments	
Country Group	10	25	50	75	90	Mean	StDev
High income: OECD	-1.42	-0.62	0.37	1.26	2.06	0.28	1.86
High income: nonOECD	-4.18	-1.17	0.86	2.71	4.97	0.91	4.22
Upper middle income	-4.19	-1.95	0.24	2.31	4.67	0.16	3.93
Lower middle income	-3.94	-1.65	0.21	1.80	3.80	0.14	3.85
Low income	-6.09	-2.61	-0.34	1.22	3.89	-0.90	4.95
All countries	-4.09	-1.53	0.21	1.75	3.81	0.04	3.93

Source: WEO data and own compilation