How Can Commodity Producers Make Fiscal & Monetary Policy Less Procyclical?

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بنك الجزائر

Part I: The Natural Resource Curse

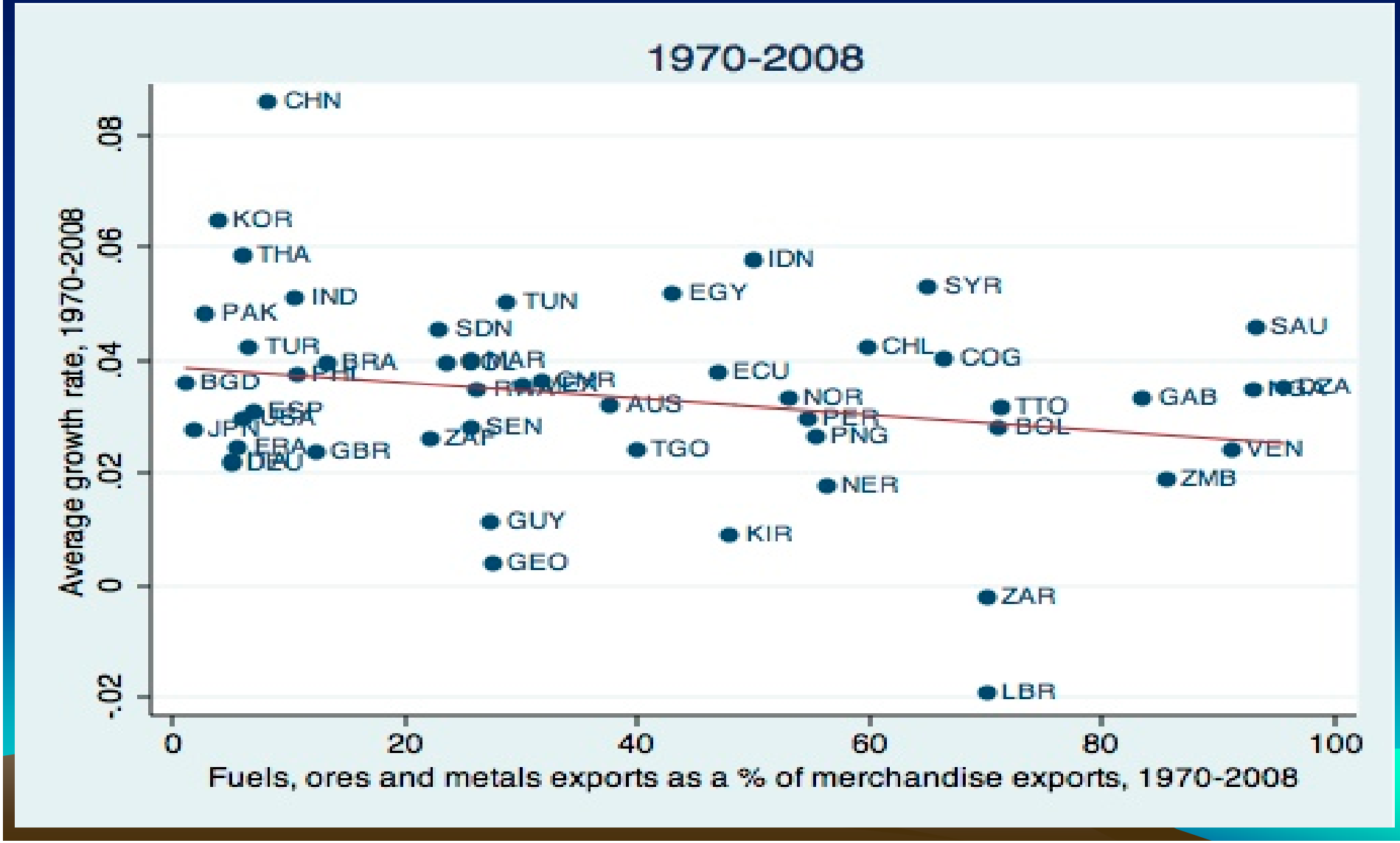
Part II: An Idea for Making Fiscal Policy Less Procyclical

Part III: An Idea for Making Monetary Policy Less Procyclical

Part I: The Famous Natural Resource Curse

- Economic performance among those with oil, mineral or agricultural resources
  - tends to be no better than among those without,
  - and often worse.

Economic growth among mineral-exporting countries is, if anything, lower than others.



Many possible channels of NRC

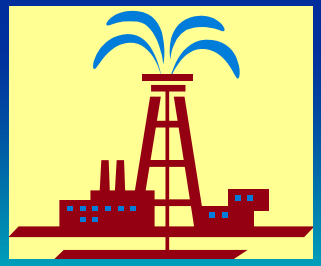
- Crowding out of manufacturing
  - Matsuyama (1992). For Algeria: Hausmann, Klinger & Lopez-Calix (2009)
- High volatility of commodity prices
  - Hausmann & Rigobon (2003), Poelhekke & van der Ploeg (2007), Blattman, Hwang & Williamson (2007).
- Poor institutions (rent cycling…)
  - Auty (1990, 2001, 07, 09), Engerman & Sokoloff (1997, 2000, 02), Gylfason (2000), Sala-I-Martin & Subramanian (2003), Isham, et al, (2005), Mehlum, Moene, & Torvik (2006), Arezki & Van der Ploeg (2007), Arezki & Brückner (2009).
- Procyclical fiscal & monetary policy (Dutch Disease)
- Others.

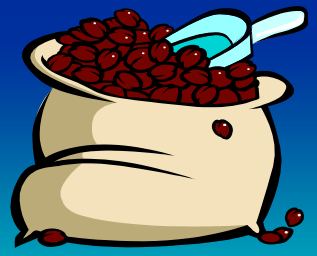
Frankel, 2010, "The Natural Resource Curse: A Survey"

Terms of trade volatility is particularly severe for commodity exporters

- Oil & natural gas are the most variable.
- But the prices of aluminum, coffee, copper, & sugar all show standard deviations > .4;

  => price swings of + or - 80% occur 5% of the time.





- There are revisionists
  - who point out that resource exports are endogenous
  - & point out many exceptions to the NR Curse.
- Regardless, the relevant question is what should a resource country do,
  - to avoid NRC pitfalls & maximize performance.
- An important part of the answer is to avoid procyclical (destabilizing) macro policies
  - which are expansionary in booms
    - exacerbating debt, overheating, inflation & bubbles,
  - and contractionary in busts.

Institutions

- "Institutions" have become a development mantra.
- E.g., it is not enough for the IMF to tell countries to run budget surpluses during expansions; the country must:
  - "take ownership,"
  - develop institutions to deliver the desired macro policy in the real world of political pressures & human frailties.
- But expert advice is often frustratingly non-specific regarding what institutions, exactly, developing countries should adopt.

Two very specific proposals for countercyclical institutions,

one for fiscal policy and one for monetary

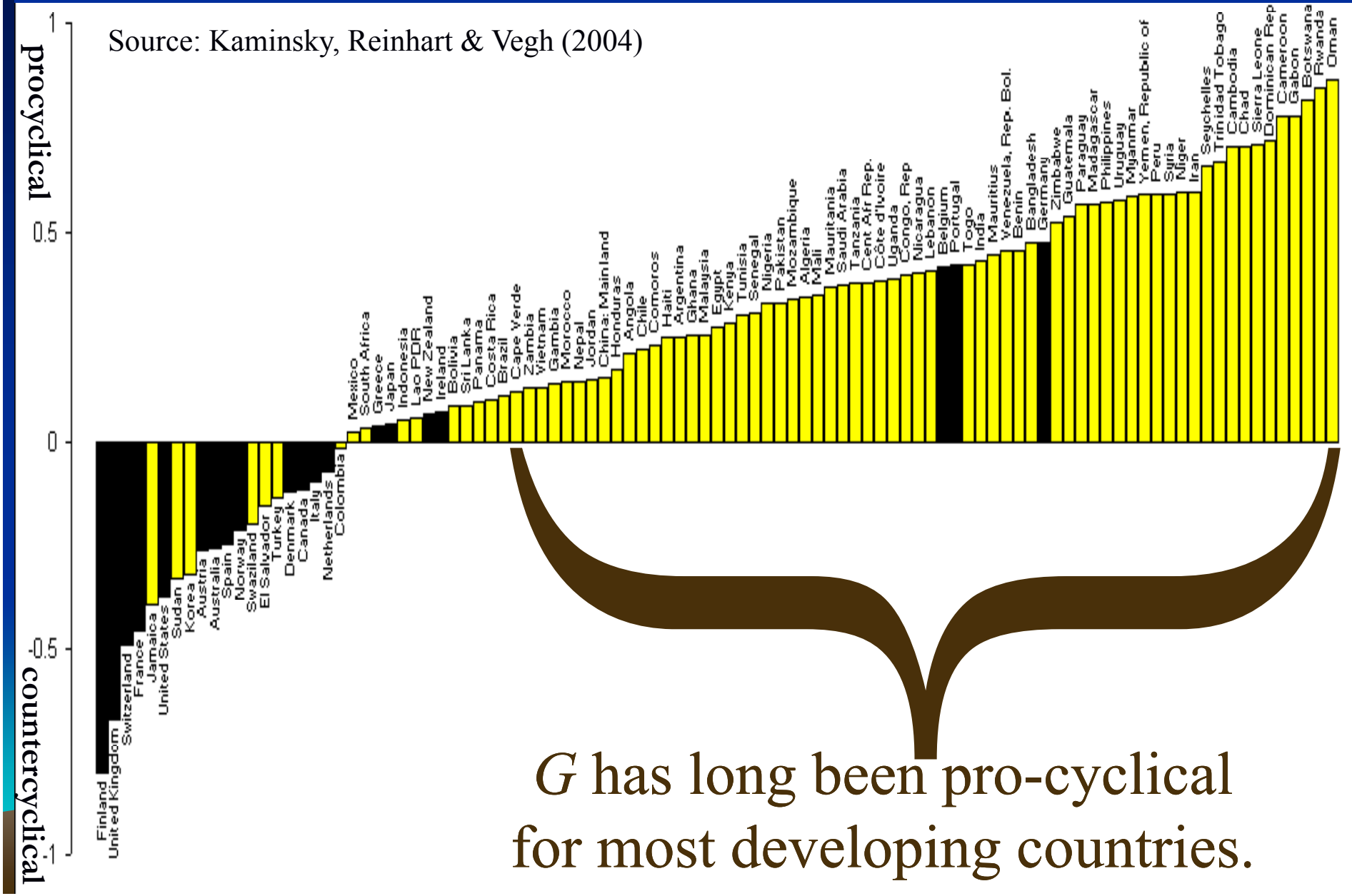
- Fiscal policy:
  emulate Chile's budget institutions.

- Monetary policy:
  Product **P**rice **T**argeting
  instead of targeting the CPI or exchange rate.

Part II: Fiscal policy

- Among most developing countries, government spending has been procyclical:
  - rising exuberantly in booms
  - and then forced to cut back in busts,
  - thereby exacerbating the cycle.
  - Citations:
    - Kaminsky, Reinhart & Vegh (2004), Talvi & Végh (2005), Mendoza & Oviedo (2006), Alesina, Campante & Tabellini (2008), and Ilzetski & Vegh (2008).
- Particularly among commodity-producers
  - Gelb (1986), Cuddington (1989), Medas & Zakharova (2009).
  - Gavin & Perotti (1997), Calderón & Schmidt-Hebbel (2003), Perry (2003), and Villafuerte, Lopez-Murphy & Ossowski (2010).

Correlations between Gov.t Spending & GDP



G has long been pro-cyclical for most developing countries.

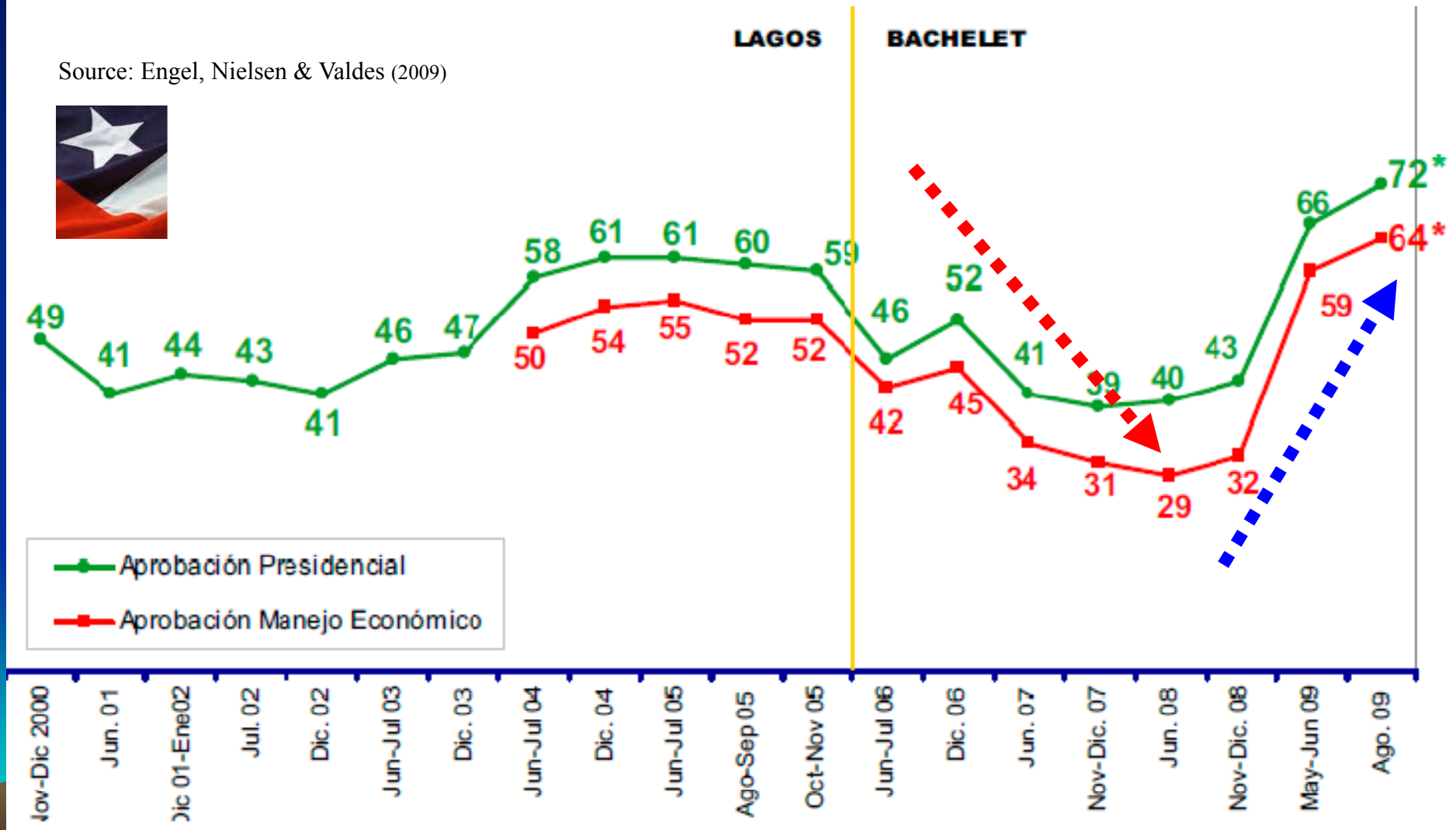
The historic role reversal

- Over the last decade some emerging market countries finally achieved **countercyclical** fiscal policies:
- They took advantage of the boom years 2003-2008
  - to run **primary budget surpluses**.
- **Debt levels** among top-20 rich countries (debt/GDP ratios ≈ 80%) are now twice those of the top-20 emerging markets.
- Some emerging markets have earned **credit ratings** higher than some so-called advanced countries.
- They thus were able to respond to the global recession by easing fiscal policy,
  - with the result that they recovered more quickly than others.

Public approval ratings for Chile's President Bachelet

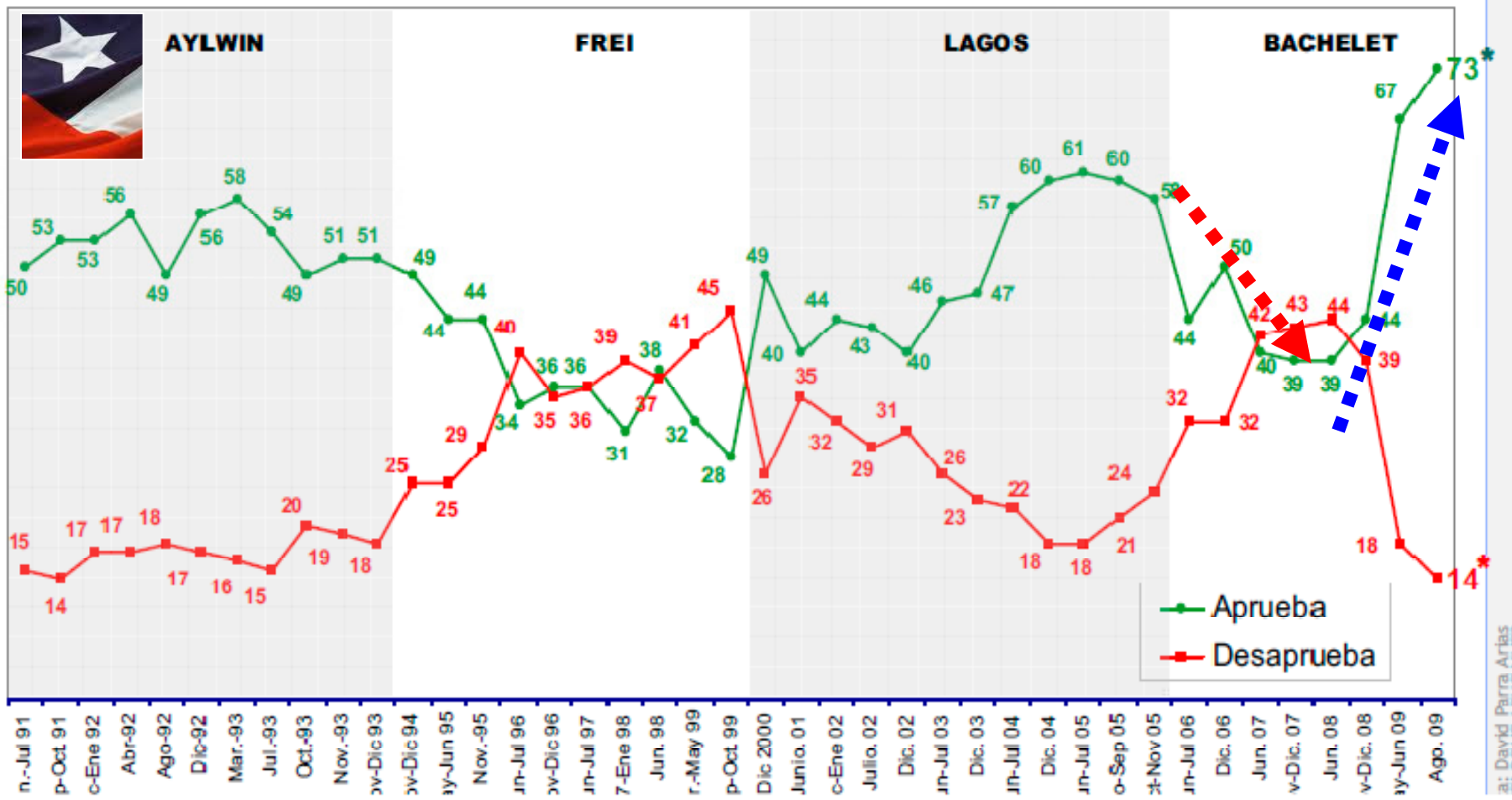
neared historic lows in 2008.

Source: Engel, Nielsen & Valdes (2009)



In 2009, approval ratings of Pres. Bachelet & her Finance Minister reached the *highest* levels since the restoration of democracy in Chile,

despite the recession that had hit. Why?

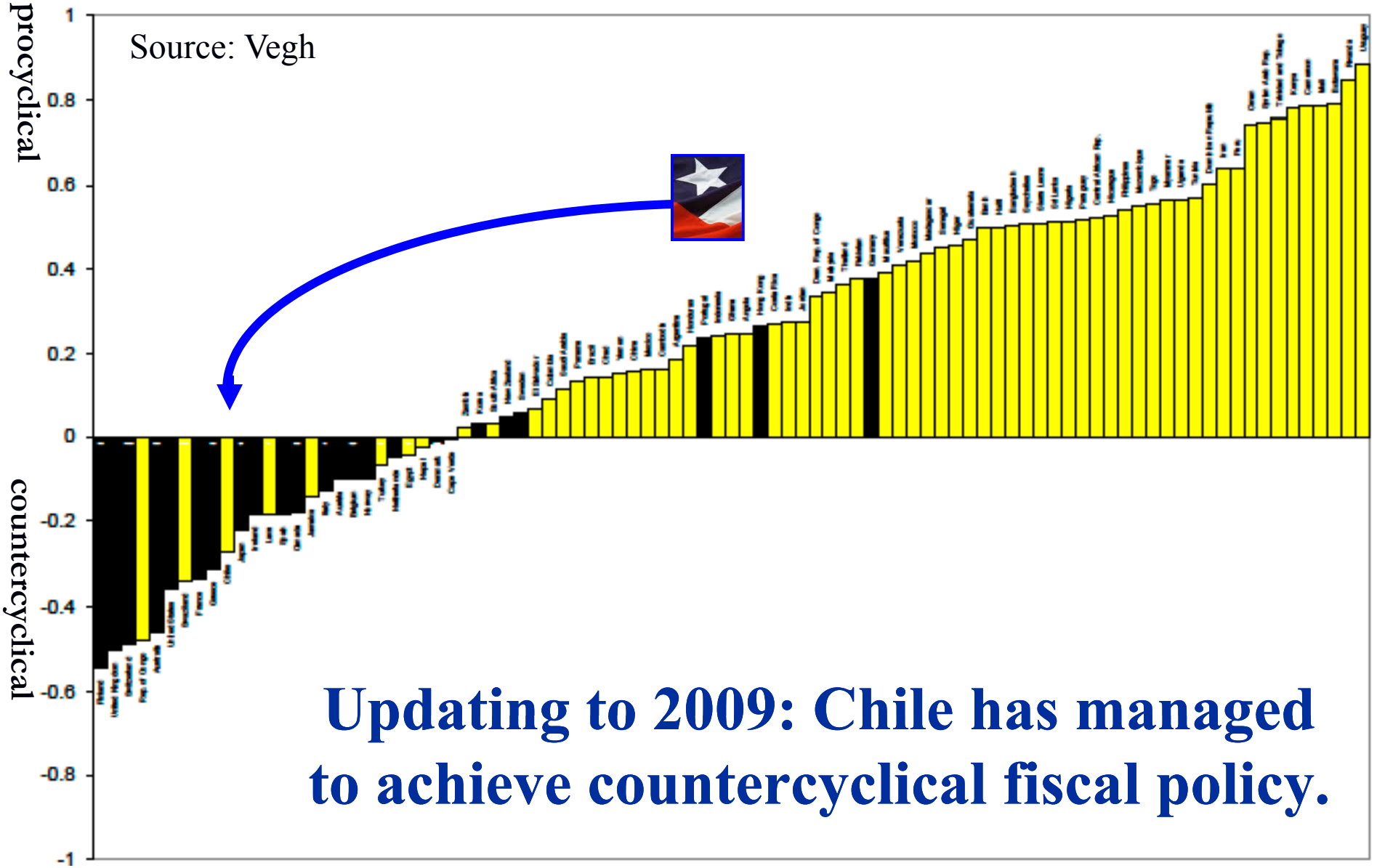


Source: Engel, Nielsen & Valdes (2009)

- In 2008, with copper prices spiking up, the government of President Bachelet had been under intense pressure to spend the copper revenue.
  - She & Finance Minister Velasco held to the rule, saving most of it.
  - This made them unpopular with groups who wanted to spend.

- When the recession hit and the copper price came back down, the government increased spending, mitigating the downturn.
  - Bachelet & Velasco became heroes.
  - Their popularity reached historic *highs* in 2009.

Correlations between Gov.t Spending & GDP



Updating to 2009: Chile has managed to achieve countercyclical fiscal policy.

A decade of Chilean fiscal policy

- In 2000 Chile instituted its structural budget rule.
- The institution was formalized in law in 2006.
- The structural budget deficit must be zero,
  - originally BS > 1% of GDP, then cut to ½ %, then 0 --
  - where structural is defined by output & copper price equal to their long-run trend values.
- 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 even of some advanced countries.
- => It was able to respond to the 2008-09 recession
  & 2010 earthquake via fiscal expansion.

The crucial institutional innovation in Chile

- How has Chile avoided over-optimistic official forecasts?
  - especially the historic pattern of over-exuberance in commodity booms?

- The estimation of the long-term path for GDP & the copper price is made by two panels of independent experts,
  - and thus is insulated from political pressure & wishful thinking.
- Other countries might usefully emulate Chile's innovation
  - or in other ways delegate to independent agencies estimation of structural budget deficit paths.

Institutions are often proposed to put aside wealth from export earnings:

- Sovereign Wealth Funds
  - *But there is no reason to expect SWF governance necessarily to be better than the rest of the budget.*
- Budget rules
  - E.g., deficit < 3% of GDP. (Euroland's SGP.)
    - *But they lack credibility*
      - *because the limits tend to be violated,*
    - *in part because they are too rigid.*

The design of budget rules

- The SGP is too rigid to allow the need for deficits in recessions, counterbalanced by surpluses in good times.
- "Tougher" constraints on fiscal policy do not always increase effective budget discipline --
  - countries often violate the rules --
- especially when a budget target that might have been reasonable ex ante becomes unreasonable after an unexpected shock,
  - such as a severe fall in export prices or national output.
- In an extreme set-up, a rule that is too rigid, so that official claims that it will be sustained are not credible, might even lead to looser fiscal outcomes
  - than if a more flexible rule had been specified at the outset.
- Neut & Velasco (2003): theory. Villafuerte et al (2010): in Latin America

The design of budget rules, continued

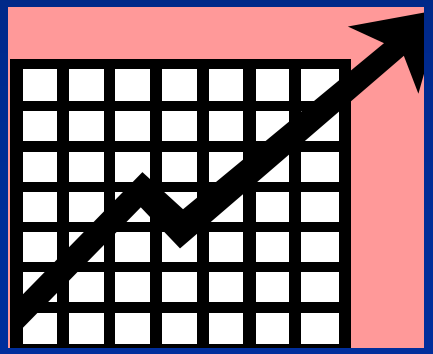
- Obvious solution:
  specify budget targets in structural terms –
  conditional on GDP & other macroeconomic determinants.

- But: Identifying what is structural vs. what is cyclical
  - is hard
  - and is prone to wishful thinking.

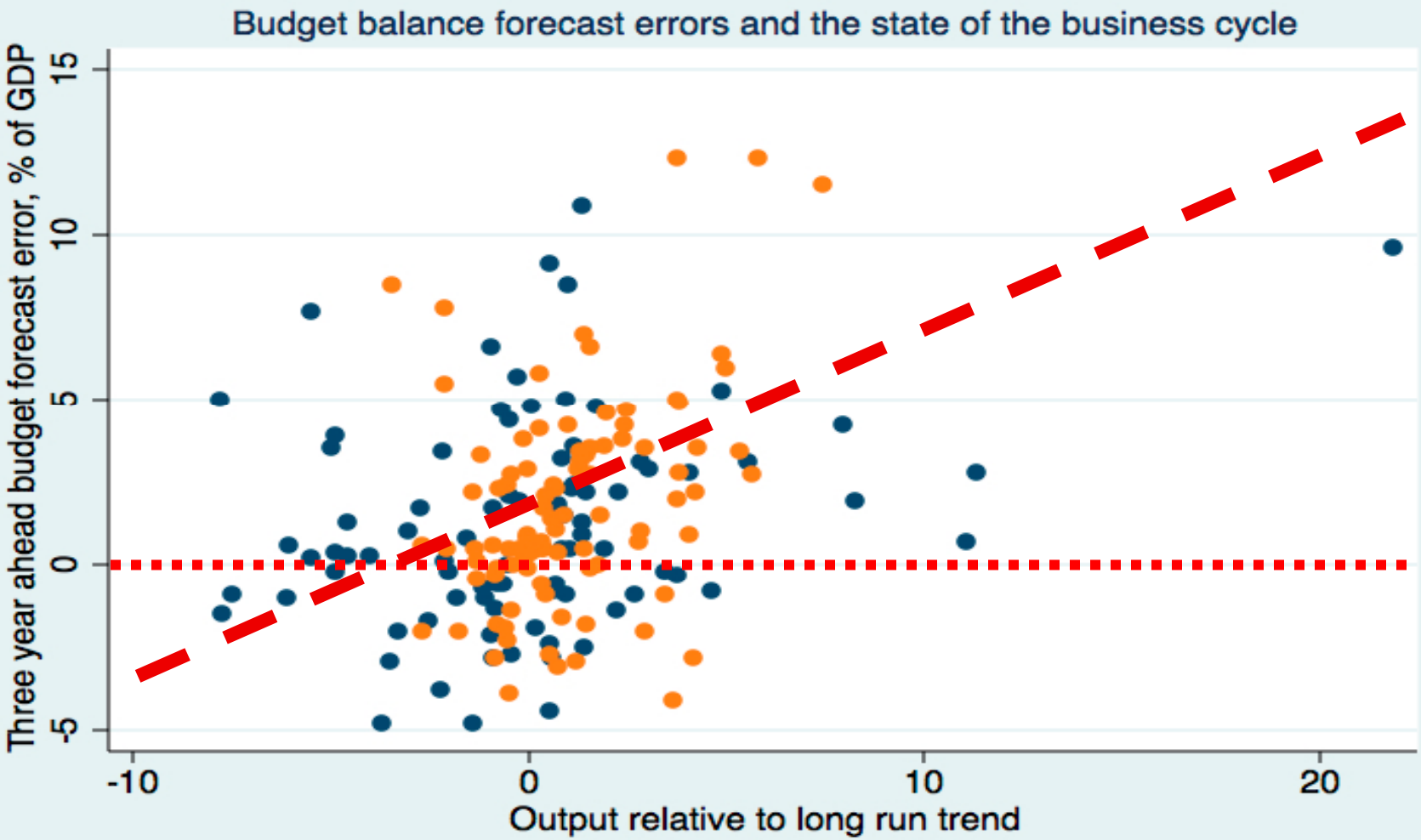
- *Thus specifying the budget rule in structural terms does not solve the problem, if politicians are the ones who judge what is structural.*

5 econometric findings regarding bias toward optimism in official budget forecasts.

- Official forecasts in a sample of 33 countries on average are overly optimistic for:
  - (1) budgets &
  - (2) GDP .
- The bias toward optimism is:
  - (3) stronger the longer the forecast horizon;
  - (4) greater for euro governments under SGP budget rules;
  - (5) greater in booms.



The optimism in official budget forecasts is stronger at the 3-year horizon, stronger among countries with budget rules, & stronger in booms.



Frankel, 2010, "A Solution to Fiscal Procyclicality: The Structural Budget Institutions Pioneered by Chile."

5 more econometric findings regarding bias toward optimism in official budget forecasts.

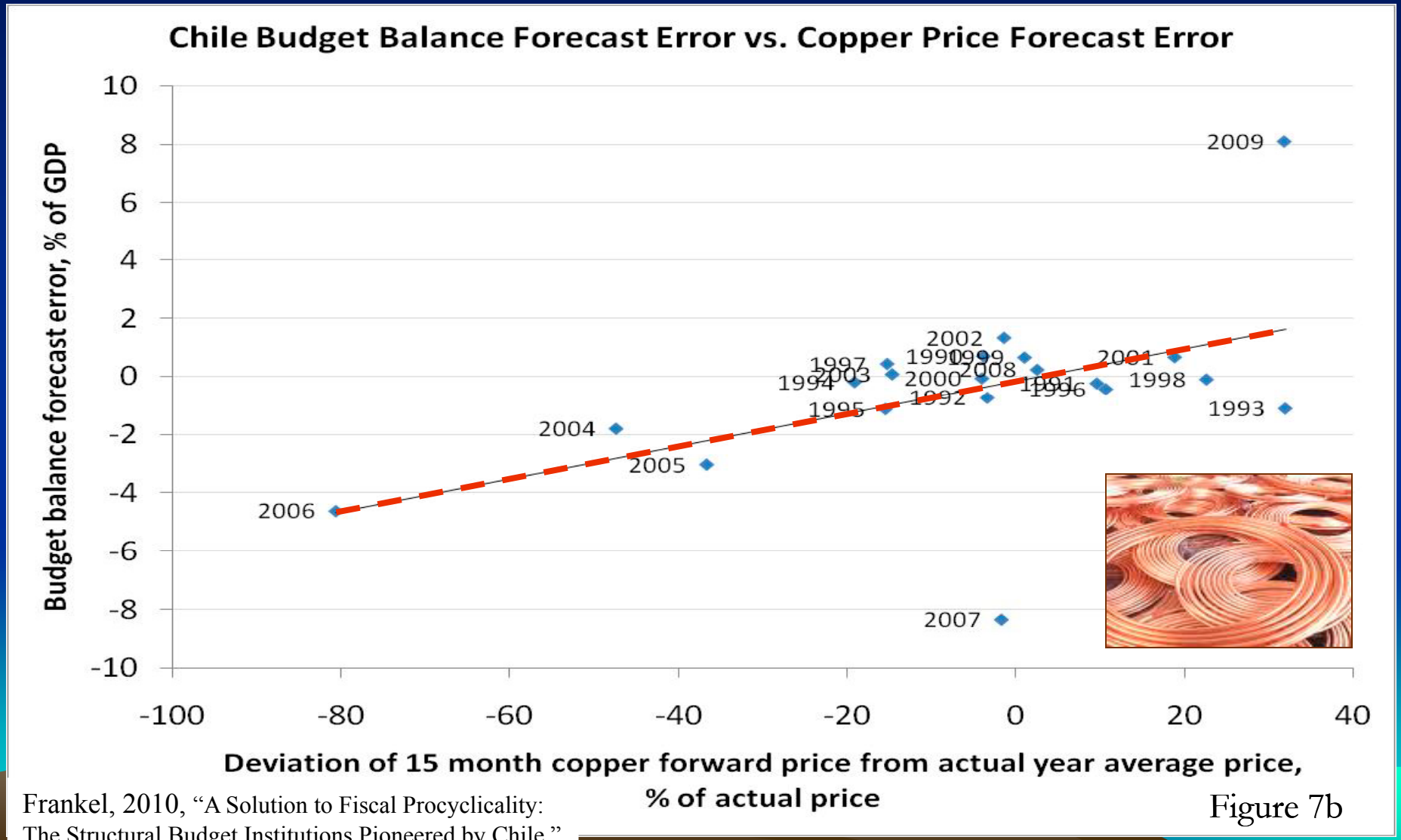
- (6) The key macroeconomic input for budget forecasting in most countries: GDP. In Chile: the copper price.
- (7) Real copper prices revert to trend in the long run.
- But this is not always readily perceived:
  - (8) 30 years of data are not enough to reject a random walk statistically; 200 years of data are needed.

  - (9) Uncertainty (option-implied volatility) is higher when copper prices are toward the top of the cycle.

- (10) Chile's official forecasts are not overly optimistic.

  It has apparently avoided the problem of official forecasts that unrealistically extrapolate in boom times.

Copper price movements dominate budget forecasting in Chile in the short term



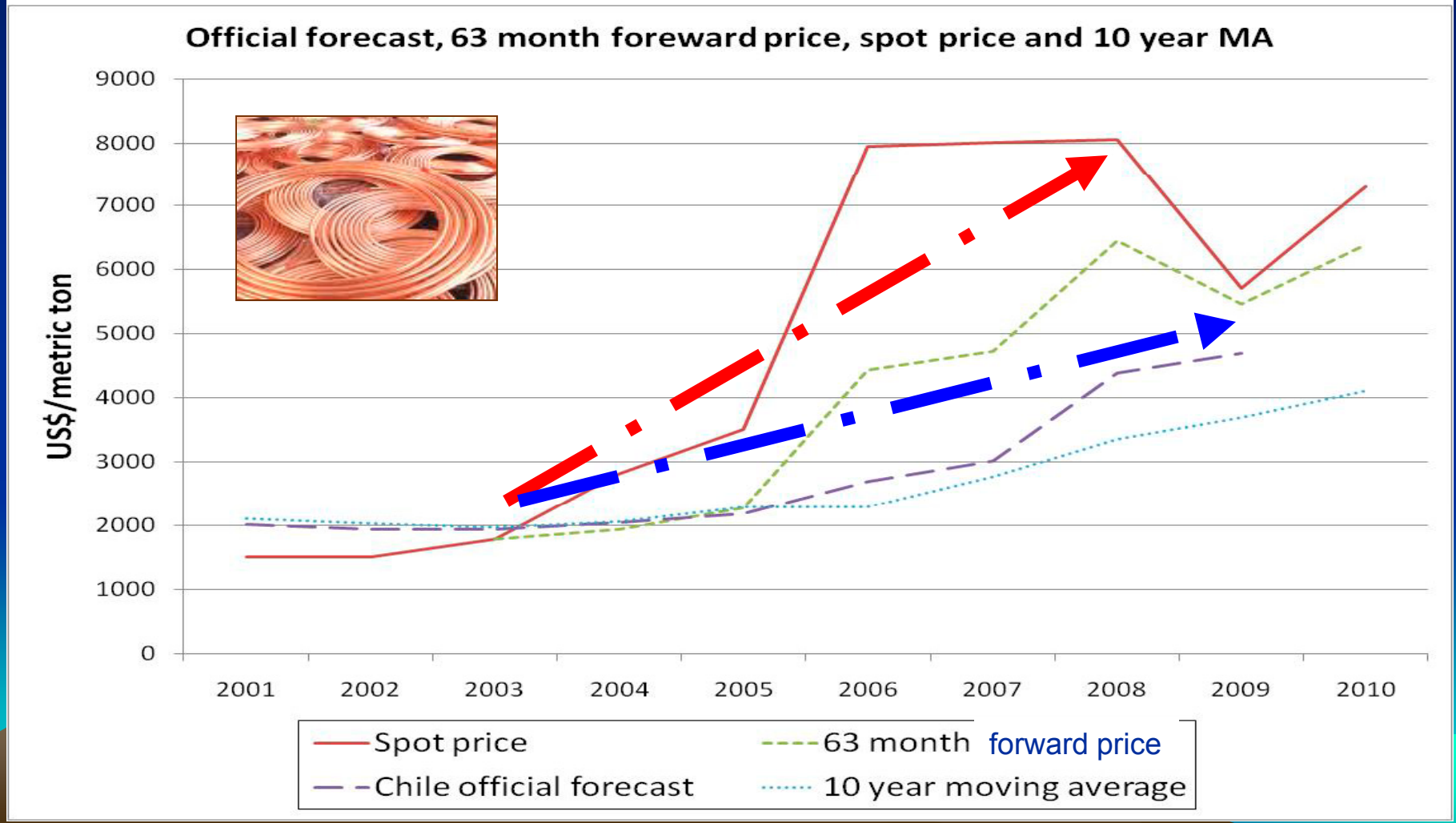
Frankel, 2010, "A Solution to Fiscal Procyclicality: The Structural Budget Institutions Pioneered by Chile."

Figure 7b

Forecasts do internalize the tendency for copper prices to revert toward long-run equilibrium

Figure 4: Copper prices spot, forward, & forecast 2001-2010

Frankel, 2010, "A Solution to Fiscal Procyclicality…."



In sum, institutions recommended to make fiscal policy less procyclical:

- Set a target for cyclically-adjusted budget balance
  - perhaps a surplus,
    - if you need to amortize a depletable resource,
    - or debt incurred in the past,
    - and if you can't depend on aid to finance a deficit.
- Follow Chile:
  - Define cyclical adjustment in terms of
    - GDP relative to long-term trend and
    - The price of the export commodity relative to long-term trend.
  - Trend should be calculated by
    - an independent panel of experts, or a simple 10-year average;
    - rather than by officials under political influence.

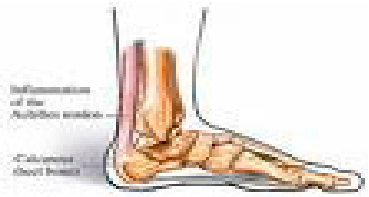
Part III: Monetary policy

Developing countries

- need a strong nominal anchor for expectations,
- experience large trade fluctuations, and
- cannot depend on the countercyclical capital flows of the finance textbooks.

What should be their nominal anchor?

6 proposed nominal targets and the Achilles heel of each:

	**Targeted variable**	**Vulnerability**	**Example**
Gold standard	 Price of gold	Vagaries of world gold market	1849 boom; 1873-96 bust
Commodity standard	 Price of agric. & mineral basket	Shocks in imported commodity	Oil shocks of 1973-80, 2000-08
Monetarist rule	 M1	Velocity shocks	US 1982
Nominal income targeting	 Nominal GDP	Measurement problems	Less developed countries
Fixed exchange rate	 $ (or €)	Appreciation of $ (or €)	EM currency crises 1995-2001
Inflation targeting	 CPI	Import price shocks	Oil shocks of 1973-80, 2000-08

What should be the nominal anchor for monetary policy? Fashions change:

- **1980-82: Monetarism** (target the money supply)
- **1984-1997: Exchange rate targets**
  (for developing countries)
- **1999-2008: Inflation Targeting --**
  IT has been the new conventional wisdom
  - among academic economists
  - at the IMF
  - among central bankers.

What is the definition of **IT**?

- It is hard to argue with **IT** when defined broadly: "choose a long run goal for inflation & be transparent."
- But something more specific is implied.
  - The narrow definition of **IT** would have central bank governors commit each year to a goal for the CPI, and then put 100% weight on achieving that objective to the exclusion of others.
  - The price target is virtually always the CPI (though sometimes "core" rather than "headline" CPI).
- I wish to propose other price indices, possible alternatives to the CPI for the role of nominal anchor.

We are not talking about rules vs. discretion,
or how flexible to be.

- Some **IT** proponents say "*flexible* inflation targeting": the central bank puts some weight on the output objective rather than all on the inflation objective
  - at the 1-year horizon,
  - as in a Taylor Rule.
- The focus here is not on the eternal question how much weight to place in the short term on a nominal anchor
  - vs. the real economy,
- but rather:
  whatever weight is to be placed on a nominal anchor, what should be that nominal anchor?

My view:
The standard options are not well-suited to a country exposed to high terms of trade volatility

- I propose a set of nominal anchors that could be described as inflation targeting –
- but targeting a *product-oriented* price index in place of a Consumption Price Index.

The Product Price Alternatives

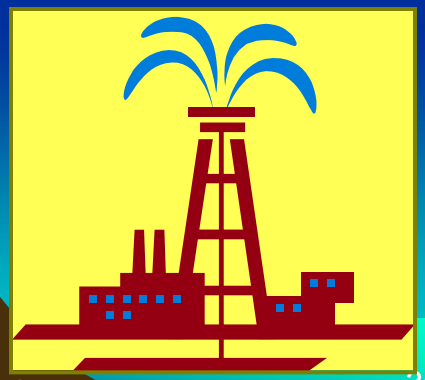
- **P**eg the **E**xport **P**rice: In the pure form, fix the price of domestic currency to the leading export commodity.
- **PEP**-basket: Set the price of domestic currency in terms of a basket of currencies & the export commodity.
- **P**eg the **E**xport **P**rice **I**ndex: peg to an index of prices of major export commodities
- **P**roduct **P**rice **T**argeting: target a comprehensive index of domestically produced goods.

They all have in common: substantial weight on the export commodity, not on the import commodity – whereas the CPI does it the other way around.

How would **P**eg the **E**xport **P**rice work operationally, say, for an oil-exporter?

PEP

- Each day, after noon spot price of oil in NYC is observed, S (\$/barrel)$_t$, the central bank announces the day's exchange rate, according to the formula:
- E(dinar/\$) $_t$ = fixed target price P(dinar/barrel) / S(\$/barrel)$_t$.
  It intervenes in \$ to hold this exchange rate for the day.
- The result: P(dinar/barrel)$_t$ is indeed fixed from day to day.



More moderate versions of the proposal

1. **Target** a **basket** of major currencies *and* oil.
   E.g., my 2003 proposal for Gulf countries: 1/3 $ + 1/3 € + 1/3 oil
2. **P**eg a broader **E**xport **P**rice **I**ndex (**PEPI**).
3. A still more moderate, less exotic-sounding, version of proposal: **target** a **product price** index **(PPT)**.

- **Key point:** exclude import prices from the index, & include export prices.
- **Flaw of CPI target: it does it the other way around.**

A less radical form of the proposal: PEPI, for Peg the Export Price *Index*

- Some have responded to the PEP proposal by pointing out a side-effect of stabilizing the local-currency price of the export commodity: destabilizing the local price of *other* export goods.
- For most countries, no commodity is more than half of exports.
- Moreover, countries may wish to encourage diversification away from traditional mineral or agricultural export.
- Thus, a moderated version is desired.
- **PEPI**: Target a broad index of export prices, rather than the price of only one export commodity.

My truly practical proposal: **P**roduct **P**rice **T**argeting

PPT

- 1st step for any central bank dipping its toe in these waters: **compute monthly product price index**.
- 2nd step: **publish** the monthly product price index
- 3rd step: announce it is **monitoring the index**.
- 4th step: **Product Price Targeting** – set each year an explicit target range for inflation.

Why is PEPI or PPT better than a fixed exchange rate for countries with volatile export prices?

Better response to trade shocks:

- If the $ price of the export commodity goes up, the currency automatically appreciates,
  - moderating the boom.
- If the $ price of the export commodity goes down, the currency automatically depreciates,
  - moderating the downturn
  - & improving the balance of payments.

Why is PPT better than CPI-targeting

for countries with volatile terms of trade?

PPT

Better response to trade shocks:

- If the $ price of imported commodity goes up, *CPI target* says to tighten monetary policy enough to appreciate the currency.
  - *Wrong response.* (E.g., oil-importers in 2007-08.)
  - *PPT does not have this flaw* .
- If the $ price of the export commodity goes up, *PPT* says to tighten money enough to appreciate.
  - *Right response.* (E.g., Gulf currencies in 2007-08.)
  - *CPI targeting does not have this advantage.*

Some empirical findings for the case of Latin American commodity-producers

Comparison of 6 alternative nominal targets according to how they would affect the variability of real tradables prices

- Some conclusions are predictable:
  - According to the simulations, $ or € anchors offer far more price stability than did historical reality.
  - PEP perfectly stabilizes the domestic price of export commodities, by construction.

Source: Frankel (2010a)

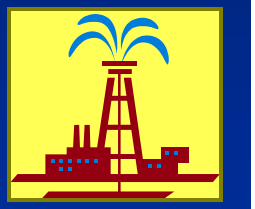
Empirical findings, continued

- The more interesting result:
  Comparison of PPT & CPI target as alternative interpretations of inflation targeting.
  - The PP target generally delivers more stability in traded goods prices, especially the export commodity.
  - This is a consequence of the larger weight on commodity exports in the PPI than in the CPI.

Source: Frankel (2010a)

Empirical findings, continued

- Simulations of 1970-2000
  - Gold producers:
    Burkino Faso, Ghana, Mali, South Africa
  - Other commodities:
    Ethiopia (coffee), Nigeria (oil), S.Africa (platinum)



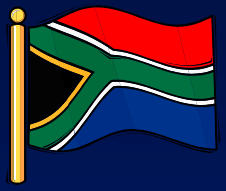
  - General finding:
    Under PEP, their currencies would have depreciated automatically in 1990s when commodity prices declined,
    - perhaps avoiding messy balance of payments crises.

Sources: Frankel (2002, 03a, 05), Frankel & Saiki (2003)

Does floating give the same answer as PEP?

- True, commodity currencies tend to appreciate when commodity markets are strong, & vice versa
  - Australian, Canadian & NZ $
    (e.g., Chen & Rogoff, 2003)
  - South African rand
    (e.g., Frankel, 2007)

- But
  - Some volatility under floating appears gratuitous.
  - In any case, floaters still need a nominal anchor.

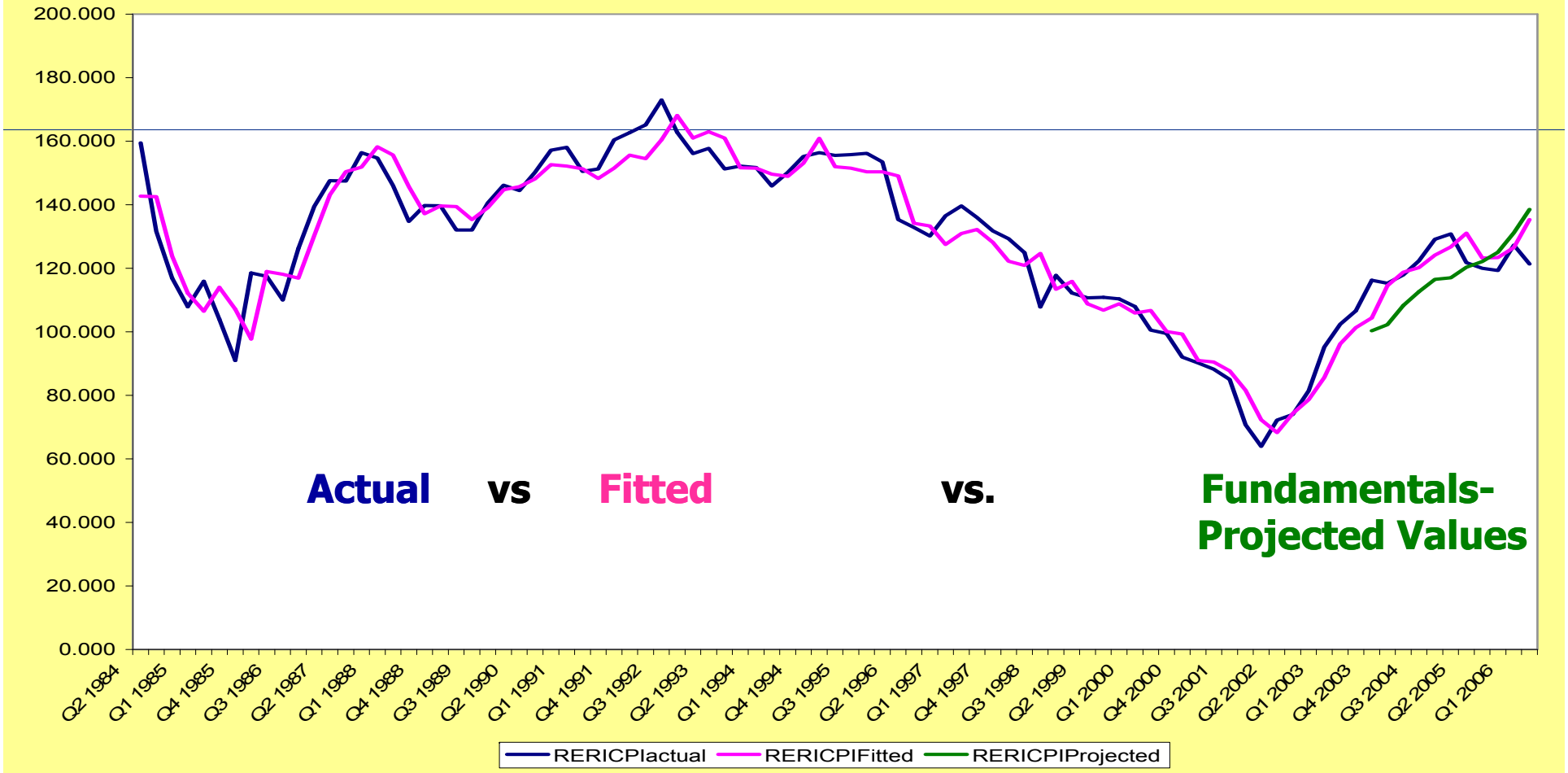


The Rand, 1984-2006:

Real commodity prices (& other fundamentals:

real interest differential, country risk premium, & l.e.v.)

can explain the real appreciation of 2003-06 – Frankel (*SAJE*, 2007).



Summary recommendations to make monetary policy less procyclical

- If the status quo is a basket peg, consider putting some weight on the export commodity
  - to allow appreciation in commodity booms
  - and depreciation in busts.
- If the status quo is Inflation Targeting, consider PPT: replacing the CPI with a product price index,
  - to allow appreciation in commodity booms
  - and to *prevent* appreciation when import prices rise.

This presentation draws on the following papers by the author:

- 2002 (with A.Saiki), "A Proposal to Anchor Monetary Policy by the Price of the Export Commodity" *J. of Econ. Integration*, Sept., vol.17, no.3, 417-48.
- 2003a, "A Proposed Monetary Regime for Small Commodity-Exporters: Peg the Export Price ('PEP')," *International Finance*, vol. 6, no. 1, Spring, 61-88.
- 2003b, "A Crude Peg for the Iraqi Dinar," *Financial Times*, June 13.
- 2003c, "Iraq's Currency Solution? Tie the Dinar to Oil," *The International Economy*, Fall.
- 2005, "Peg the Export Price Index: A Proposed Monetary Regime for Small Countries," *Journal of Policy Modeling* 27, no.4, June.
- 2007, "On the Rand: Determinants of the South African Exchange Rate," *South African Journal of Economics*, vol.75, no.3, September, 425-441. NBER WP No.13050.
- 2008 (with B. Smit & F.Sturzenegger), "Fiscal and Monetary Policy in a Commodity Based Economy" *Economics of Transition* 16, no. 4, 679-713.

  2008, "UAE & Other Gulf Countries Urged to Switch Currency Peg from the Dollar to a Basket That Includes Oil," *Vox*, 9 July.
- 2010a, "A Comparison of Monetary Anchor Options for Commodity-Exporters, Including Product Price Targeting, in Latin America," NBER WP No. 16362. *Myths and Realities of Commodity Dependence*, World Bank, Sept.2009.
- 2010b, "The Natural Resource Curse: A Survey," NBER Working Paper No. 15836. Forthcoming, *Export Perils*, edited by Brenda Shaffer (University of Pennsylvania Press).
- 2010c, "A Solution to Fiscal Procyclicality: The Structural Budget Institutions Pioneered by Chile," *Fiscal Policy & Macroeconomic Performance,* 14th Annual Conference of the Central Bank of Chile, Oct.21-22, 2010, Santiago.

Appendices:
The need for alternatives to CPI-targeting

1. IT Central bankers are well aware of the reasons to let headline CPI rise in response to a price increase for imported oil.

2. PEPI and PPT again.

1. In practice, IT proponents agree central banks should not tighten to offset oil price shocks

- They want focus on *core* CPI, excluding food & energy.
- But
  - food & energy consumption do not cover all supply shocks.
  - Use of core CPI sacrifices some credibility:
    - If core CPI is the explicit goal *ex ante*, the public feels confused.
    - If it is an excuse for missing targets *ex post*, the public feels tricked.
  - The threat to credibility is especially strong where there are historical grounds for believing that government officials fiddle with the consumer price indices for political purposes.
  - Perhaps for that reason, IT central banks apparently *do* respond to oil shocks by tightening/appreciating,
    - as the following correlations suggest….

Since 1999, when Brazil, Chile, Colombia & others switched from exchange rate targets to CPI targets, they have experienced a higher correlation between the $ price of their currencies and the $ price of oil imports.

- => Language about core CPI notwithstanding, the monetary authorities in the IT countries have responded to oil import price increases by contracting enough to appreciate their currencies.
- The production-based price targets (PEP, PEPI, PPT) would not have this problem.

Table 1 LAC Countries' Current Regimes and Monthly Correlations of Exchange Rate Changes ($/local currency) with $ Import Price Changes

	Exchange Rate Regime	Monetary Policy	1970-1999	2000-2008	1970-2008
ARG	Managed floating	Monetary aggregate target	-0.0212	-0.0591	-0.0266
BOL	Other conventional fixed peg	Against a single currency	-0.0139	0.0156	-0.0057
BRA	Independently floating	Inflation targeting framework (1999)	0.0366	0.0961	0.0551
CHL	Independently floating	Inflation targeting framework (1990)*	-0.0695	0.0524	-0.0484
CRI	Crawling pegs	Exchange rate anchor	0.0123	-0.0327	0.0076
GTM	Managed floating	Inflation targeting framework	-0.0029	0.2428	0.0149
GUY	Other conventional fixed peg	Monetary aggregate target	-0.0335	0.0119	-0.0274
HND	Other conventional fixed peg	Against a single currency	-0.0203	-0.0734	-0.0176
JAM	Managed floating	Monetary aggregate target	0.0257	0.2672	0.0417
NIC	Crawling pegs	Exchange rate anchor	-0.0644	0.0324	-0.0412
PER	Managed floating	Inflation targeting framework (2002)	-0.3138	0.1895	-0.2015
PRY	Managed floating	IMF-supported or other monetary program	-0.023	0.3424	0.0543
SLV	Dollar	Exchange rate anchor	0.1040	0.0530	0.0862
URY	Managed floating	Monetary aggregate target	0.0438	0.1168	0.0564
Oil Exporters					
COL	Managed floating	Inflation targeting framework (1999)	-0.0297	0.0489	0.0046
MEX	Independently floating	Inflation targeting framework (1995)	0.1070	0.1619	0.1086
TTO	Other conventional fixed peg	Against a single currency	0.0698	0.2025	0.0698
VEN	Other conventional fixed peg	Against a single currency	-0.0521	0.0064	-0.0382

* Chile declared an inflation target as early as 1990; but it also had an exchange rate target, under an explicit band-basket-crawl regime, until 1999.

IT countries show correlations > 0.

Why is the correlation between the $ import price and the $ currency value revealing?

- The currency of an oil importer should not respond to an increase in the world price of oil by appreciating, to the extent that these central banks target *core* CPI .
- If anything, floating currencies should *depreciate* in response to such an adverse terms of trade shock.
- When we observe these IT currencies respond by appreciating instead, it suggests that the central bank is tightening to reduce upward pressure on the CPI.

Appendix 2:

- Supply shocks and Nominal Income Targeting
- Drawbacks of PEP
- The case for PEPI and PPT again

Wanted !

- New candidate variable for nominal target.
- Variable should be:
  - simpler for the public to understand *ex ante* than core CPI,
    and yet
  - robust with respect to supply shocks.
- "Robust with respect to supply shocks"
  means that the central bank should not have to choose *ex post* between two unpalatable alternatives:
  - an unnecessary economy-damaging recession or
  - an embarrassing credibility-damaging violation of the declared target.

One variable that fits the desirable characteristics is nominal GDP.

- Nominal income targeting is a regime that has the desirable property of taking supply shocks partly as *P* and partly as *Y*, without forcing the central bank to abandon the declared nominal anchor.
- A popular proposal among macroeconomists in the 1980s.
- Some critics claimed that nominal income targeting was less applicable to developing countries because of lags and statistical errors in measurement.
  - But these measurement problems have diminished.
  - Furthermore, developing countries are more vulnerable to supply shocks than are industrialized countries
    => the proposal is *more* applicable to them, not less.

McKibbin & Singh (2003).

- But nominal income targeting has not been seriously considered since the 1990s, either by rich or poor countries.
- Fortunately, nominal income is not the only variable that is more robust to supply shocks than the CPI.
- The proposal again: product-oriented price indices for targets.

To understand the argument, one must first recognize the importance of the external accounts in developing countries:

- Small countries are more trade-dependent than big countries.
- Those specialized in mineral & agricultural commodities experience more volatile terms of trade,
  vs. industrialized countries.
- Developing countries tend to experience pro-cyclical finance,
  - not the finance of theory, which willingly smoothes trade shocks.
  - Often international capital, if anything, exacerbates trade swings.

Trade shocks

- If the supply shocks are terms of trade shocks, then the choice of CPI to be the price index on which IT focuses is particularly inappropriate.
- Alternative:
  An export price index or output-based price index.
- The important difference is that
  - import goods show up in the CPI, but not in the output-based price indices,
  - and vice versa for export goods: they show up in the output-based prices but not in the CPI.

We can call it "Inflation Targeting." But

- not based on the CPI (as standard IT) .
- Rather based on other price indices
  - **PEP**: Peg the Export Price, the price of the leading mineral commodity
    - or include it in a basket with $ and €.
  - **PEPI**: Target a comprehensive export price index
  - **PPT**: Product Price Target

Peg the Export Price (PEP)
Or Peg the Export Price Index (PEPI)

The proposal: The authorities peg the currency to a basket or price index that includes the prices of their leading commodity exports (oil, gold, copper, coffee…).

The claim -- The regime combines the best of both worlds:

(i) The advantage of automatic accommodation to terms of trade shocks, together with

(ii) the advantages of a nominal anchor.

PEP, in its strict form, has some serious drawbacks

- It puts the burden of every fluctuation in world commodity prices onto domestic prices of *other* Traded Goods.
  - Even for countries where non-commodity TGs are a small share of the economy, some would like to nurture this sector,
    - so as to encourage diversification in the long run.
    - Exposing it to full volatility could shrink the non-commodity TG sector.
  - The volatility is undesirable, in particular, for those short-term fluctuations that are likely to be reversed.
- Hence **PEPI** or **PPT**.

PPT: The most moderate proposal

- Target a broad monthly index of all domestically produced goods, whether exportable or not.
- Central banks in practice cannot hit a broad index exactly,
  - in contrast to the way they can hit exactly a target for the exchange rate, the price of gold,
  - or even the price of a basket of 3 or 4 mineral or ag. commodities.
- There would instead be a declared band for the target, which could be wide if desired, just as when targeting the CPI, money supply, or other nominal variables.
  - Open market operations to keep the index inside the band can be conducted in terms of either foreign exchange or domestic securities.