

On the Importance of Policy Coordination

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Introduction

“Fiscal Policy Challenges under the Recent Macroeconomic Uncertainty”

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- There seems to be much confusion amongst policy makers as to the best way forward.
- Prominent example is advice from IMF:
 - 2008–09: urgent need to stimulate
 - 2010–11: urgent need to consolidate
 - 2012: urgent need for stimulative consolidation (“growsterity”)
- How do policy makers and private agents make sense of such advice if stated goal is to provide **stability** and to **anchor expectations**?

Plan of the Talk

- Fiscal policy challenges bleed into monetary policy challenges.
- Develop (standard) theory that makes the point that policy coordination is necessary to anchor inflation expectations.
- Examine how inflation targeting in 14 “emerging” economies may have provided additional coordination that helped bring down inflation levels.

Monetary-Fiscal Interactions: Theory

- Monetary & fiscal policy have two tasks: (1) control inflation; (2) stabilize debt
- Two different policy mixes that can accomplish these tasks

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- **Regime M:** “normal state of affairs”
- **Regime F:** can arise when policy coordination is not forthcoming

Monetary-Fiscal Interactions: Regime M

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 - people must believe adjustments will occur eventually
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 - people must believe adjustments will occur eventually
 - eliminates wealth effects from government debt
 - for MP to target inflation, fiscal expectations must be anchored on FP adjusting to maintain value of debt
- How firmly are expectations so anchored?

An Equilibrium Condition

$$\frac{M_{t-1} + Q_t B_{t-1}}{P_t} = \sum_{j=0}^{\infty} \beta^j E_t \left[\tau_{t+j} - z_{t+j} + \frac{M_{t+j} - M_{t+j-1}}{P_{t+j}} \right]$$

= Expected present value primary surpluses + seigniorage

■ In Regime M...

- MP delivers equilibrium inflation process
- taking inflation as given, FP must choose compatible surplus policy
- “compatible” means: stabilizes debt
- imposes restrictions on $E_t PV$

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- Regime F arises in two ways
 - 1 **Sargent & Wallace's unpleasant monetarist arithmetic**

Common Perception of Fiscal Inflation

- Arises from unpleasant arithmetic mechanism
 - hit fiscal limit; surpluses unresponsive to debt
 - seigniorage adjusts to stabilize debt
- A central banker's take on this:

“... the proposition is of little current relevance to the major industrial countries. This is for two reasons. First, seigniorage—financing the deficit by issuing currency rather than bonds—is very small relative to other sources of revenues. Second, over the past decade or so, governments have become increasingly committed to price stability... This sea change in the conventional wisdom about price stability leaves no room for inflation to bail out fiscal policy.”

—Mervyn King (1995)

Policy Separation Principle

- A deeply ingrained misperception: CB independence & inflation targeting insulate inflation from FP
- Policies are conducted by separate institutions
- Principle underlies monetary reforms without corresponding fiscal reforms
 - assumes MP reform can force FP reform
- System may work in normal times, but creates uncertainty or worse during fiscal stress or significant shock
- Central bank models build in separation principle
 - inflation & government debt dynamics decoupled

Separation in CB Model Schematic

- Fisher relation

$$R_t = r_t + E_t \pi_{t+1}$$

- Government budget

$$\frac{B_t + M_t}{P_t} + s_t = \frac{R_{t-1} B_{t-1} + M_{t-1}}{P_t}$$

- Monetary policy

$$R_t - R^* = \alpha(\pi_t - \pi^*)$$

- Fiscal policy

$$s_t - s^* = \gamma \left(\frac{B_{t-1}}{P_{t-1}} - b^* \right)$$

- MP feeds directly into inflation, but debt does not feed directly into inflation
- Yet as we see... fiscal policy can determine inflation

Misperception of Fiscal Inflation

- King reflects the common perception of fiscal inflation that is embedded in the separation principle
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Misperception of Fiscal Inflation

- King reflects the common perception of fiscal inflation that is embedded in the separation principle
 - arises if and only if monetary policy monetizes deficits
- But it is a *misperception* that monetizing deficits is the *only* channel for fiscal inflation
- Let's take direct monetization off the table

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 - 2 fiscal theory of the price level

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- In Regime F:
 - FP sets primary surpluses independently of debt
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- In Regime F:
 - FP sets primary surpluses independently of debt
 - MP prevents interest payments on debt from destabilizing debt
- Debt is revalued to align its value with expected surpluses
- Lower current or expected surpluses reduce value of outstanding debt: raises aggregate demand
⇒ higher current and expected inflation

Using an Equilibrium Condition: Regime F

$$\frac{M_{t-1} + Q_t B_{t-1}}{P_t} = \sum_{j=0}^{\infty} \beta^j E_t \left[\tau_{t+j} - z_{t+j} + \frac{M_{t+j} - M_{t+j-1}}{P_{t+j}} \right]$$

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 - adjustments complete when value of debt equals lower E PV(Surpluses)

- Demand for debt \Leftrightarrow aggregate demand

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Flight from Risk

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- “Flight from Risk”
 - shift from risky assets to safe
 - sharp increase in real discount rates
 - decrease in \mathbb{E} PV(Surpluses)
 - large & sudden revaluation in debt
 - Increase in inflation & lower economic activity
- Can explain inflation fears during recession (deflation for US)
- Standard MP theory cannot

Undermining Monetary Control of Inflation

- Policy starts in Regime M: active MP/passive FP
- Agents begin to doubt necessary fiscal adjustments will be forthcoming
 - consolidation progresses in fits & starts
 - domestic politics grow more polarized
- Simplest case: people believe at future date T economy hits the **fiscal limit** and Regime F adopted
- From T on, inflation determined by fiscal expectations
 - value of debt & price level at date $T - 1$ pinned down
- Forward-looking agents bring those effects into period before the **fiscal limit**

Undermining Monetary Control of Inflation

At a known date T economy reaches fiscal limit

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	Regime 1 $t = 0, 1, \dots, T - 1$	
Monetary Policy	$R_t^{-1} = R^{*-1} + \alpha \left(\frac{P_{t-1}}{P_t} - \frac{1}{\pi^*} \right)$	
Tax Policy	$\tau_t = \tau^* + \gamma \left(\frac{B_{t-1}}{P_{t-1}} - b^* \right)$	

Undermining Monetary Control of Inflation

At a known date T economy reaches fiscal limit

	Regime 1 $t = 0, 1, \dots, T - 1$	Regime 2 $t = T, T + 1, \dots$
Monetary Policy	$R_t^{-1} = R^{*-1} + \alpha \left(\frac{P_{t-1}}{P_t} - \frac{1}{\pi^*} \right)$	$R_t^{-1} = R^{*-1}$
Tax Policy	$\tau_t = \tau^* + \gamma \left(\frac{B_{t-1}}{P_{t-1}} - b^* \right)$	$\tau_t = \tau^{\max}$

Undermining Monetary Control of Inflation

- What happens before the fiscal limit?
 - Regime M policies do not determine inflation
 - Ricardian equivalence breaks down
 - Lower expected surpluses *reduce* debt-output
 - Regime M MP *destabilizes* expected inflation
 - leaning against inflation raises interest on debt, wealth, future inflation

Undermining Monetary Control of Inflation

- What happens before the fiscal limit?
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 - leaning against inflation raises interest on debt, wealth, future inflation
- Messages:
 - 1 Price level determined by beliefs about policy in the long run
 - 2 Inappropriate or uncertain FP makes MP unable to anchor inflation expectations
- All this generalizes to more plausible scenarios

Policy Coordination: Theory

- Presented a basic theory of policy coordination required to pin down price level.
- Theory extends to other policy as well (e.g., exchange rate policy)
- Theory is an abstraction and not meant to be taken literally...
- However, premise that policy coordination is vital to anchor expectations is the takeaway from the theory that I want to apply to the data.
- I now want to argue that implementing inflation targeting policy in many emerging economies has forced more cooperation among policy agencies.

Policy Coordination: Empirical Assessment

- Standard monetary theory suggests that anchoring inflationary expectations requires a concerted effort among **all** policy makers.
- Monetary policy alone cannot control the price level and mitigate shocks buffeting the economy.
- Expectation effects matter. If agents believe that fiscal / exchange rate support for stated monetary policy goals is not forthcoming, it will substantially diminish or even make perverse the actions of the monetary authority.

Policy Coordination: Empirical Assessment

- Examine rates of inflation before and after inflation targeting regime in 14 countries that are “emerging economies.”
- Each country is unique, but policy experiments and stated policy goals were largely the same.
- Data come from *OECD.Stat*, *CEIC*, World Bank, FRED databases and central bank websites.
- Claim: Inflation targeting has been successful in bringing down the level of inflation because it has forced coordination amongst policy institutions.

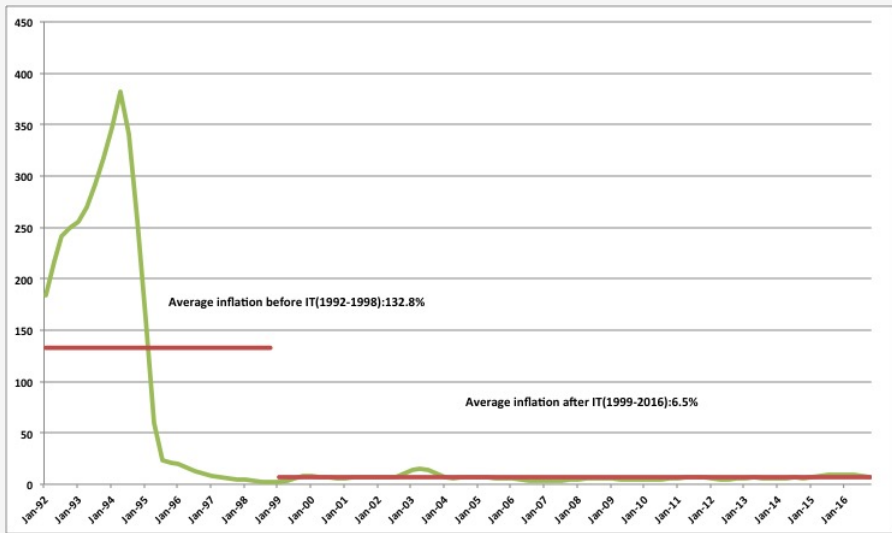
Inflation Targeting

- Inflation targeting is a monetary policy in which an explicit “medium term” inflation target is communicated to the public.
- One goal of an inflation target is to force agreement amongst those setting monetary policy (improved communication).
- This helps coordinate public (heterogeneous) expectations about actual inflation target.
- Implementation and actual execution varies across countries but stated goals are largely the same.

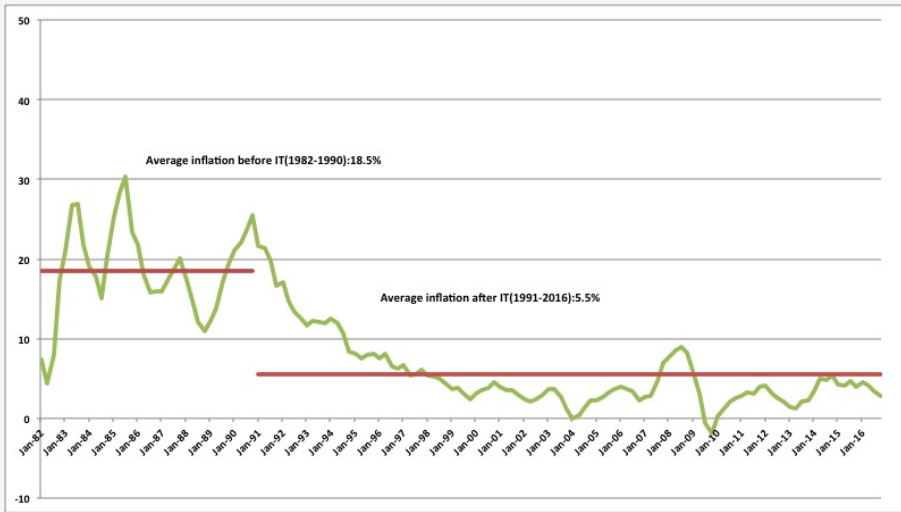
Inflation Targeting: Observation

Inflation targeting brought down the level of inflation in every country.

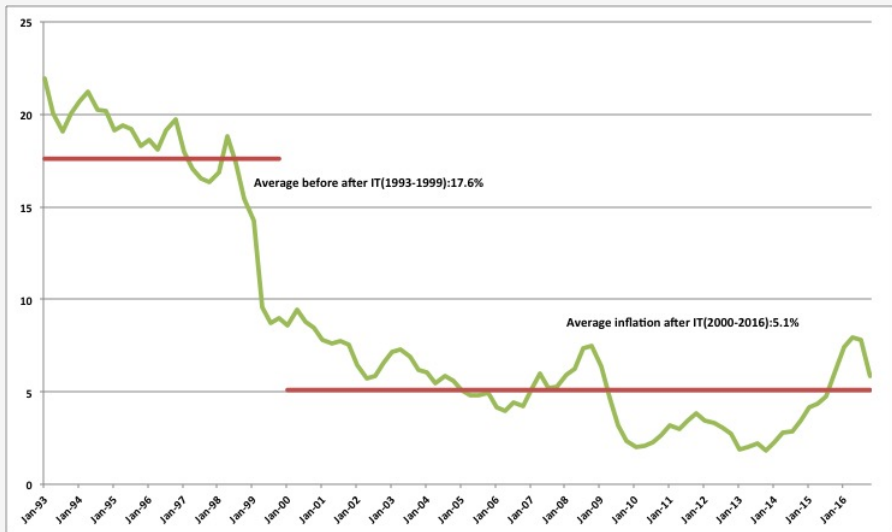
Inflation Targeting: Brazil



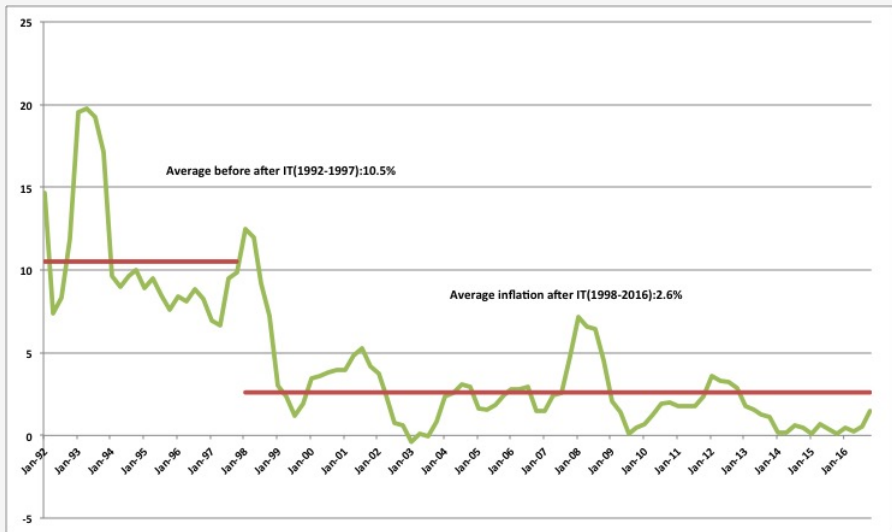
Inflation Targeting: Chile



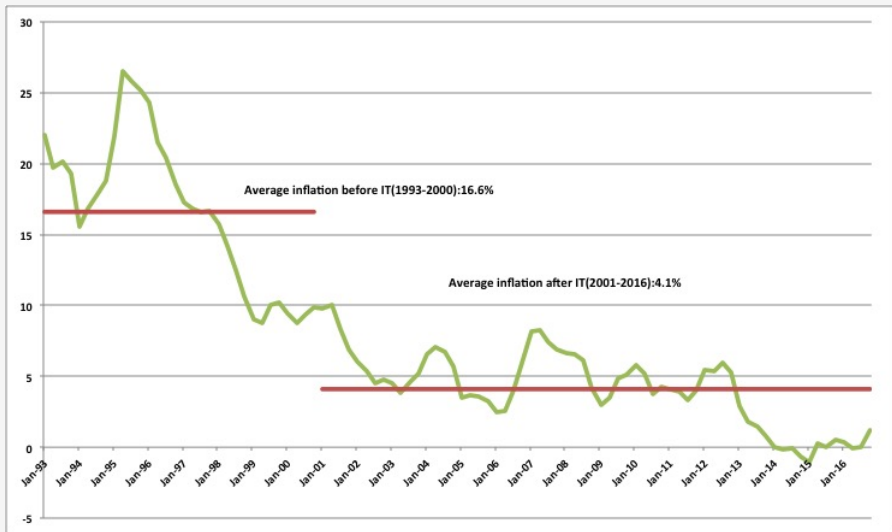
Inflation Targeting: Colombia



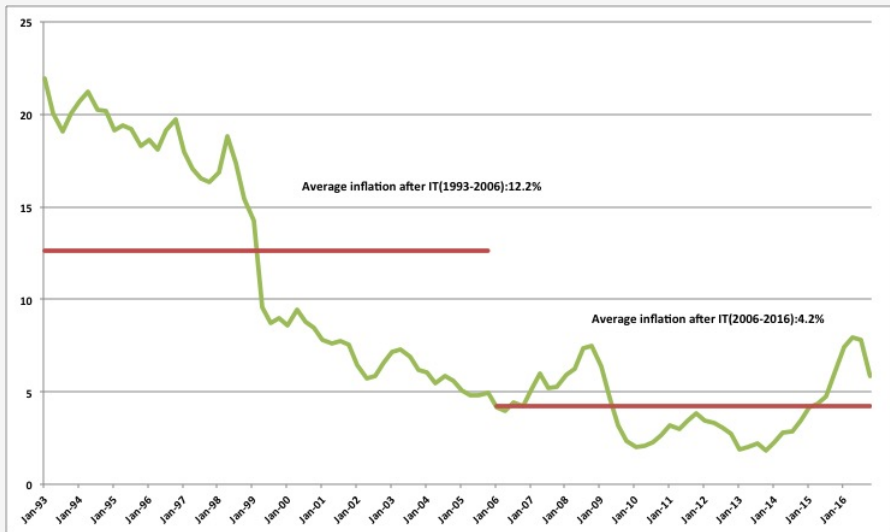
Inflation Targeting: Czech Republic



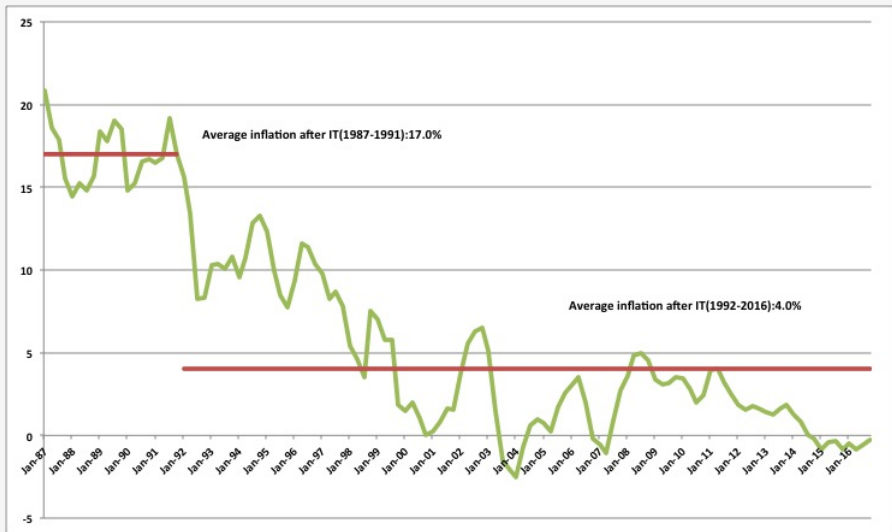
Inflation Targeting: Hungary



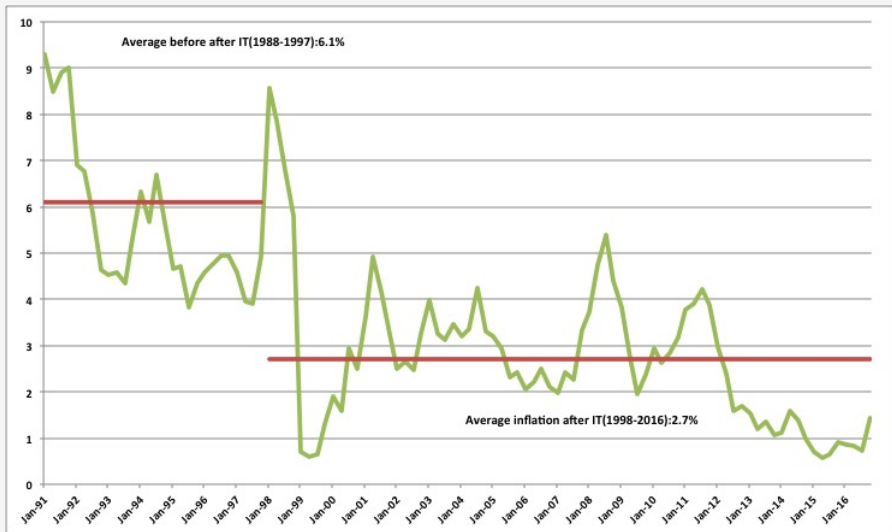
Inflation Targeting: Indonesia



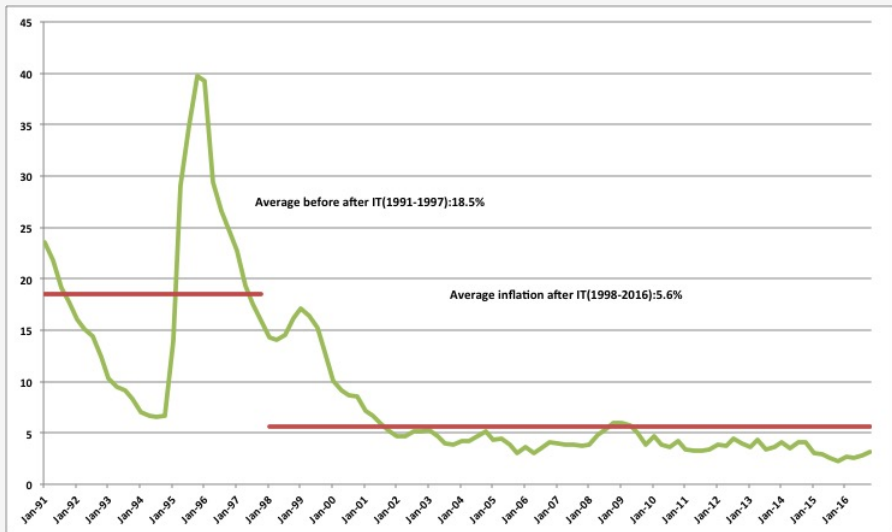
Inflation Targeting: Israel



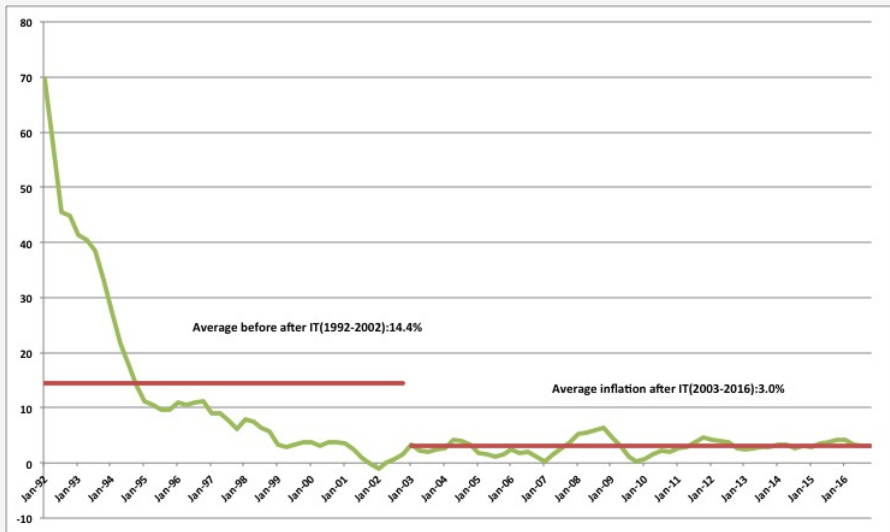
Inflation Targeting: Korea



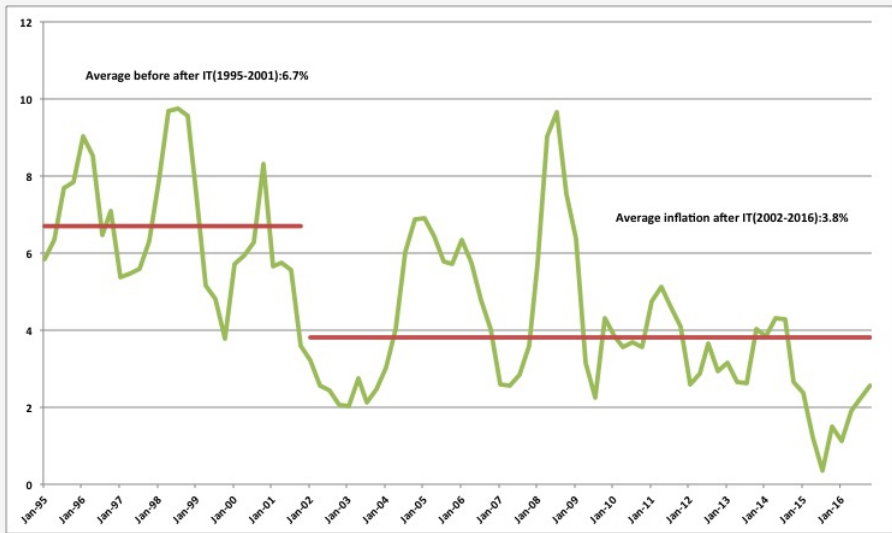
Inflation Targeting: Mexico



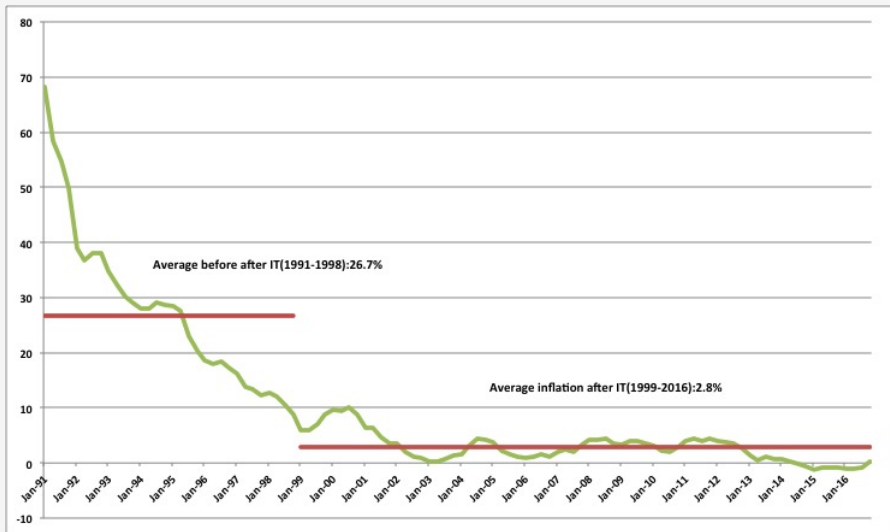
Inflation Targeting: Peru



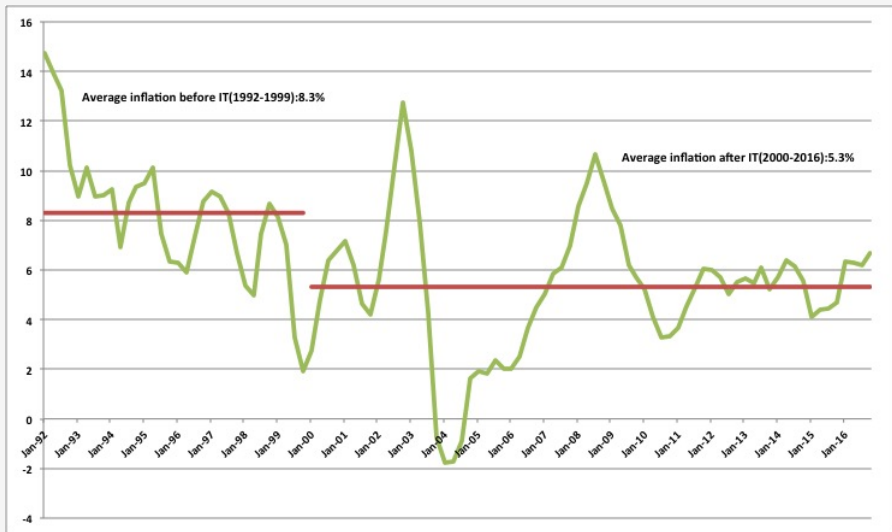
Inflation Targeting: Philippines



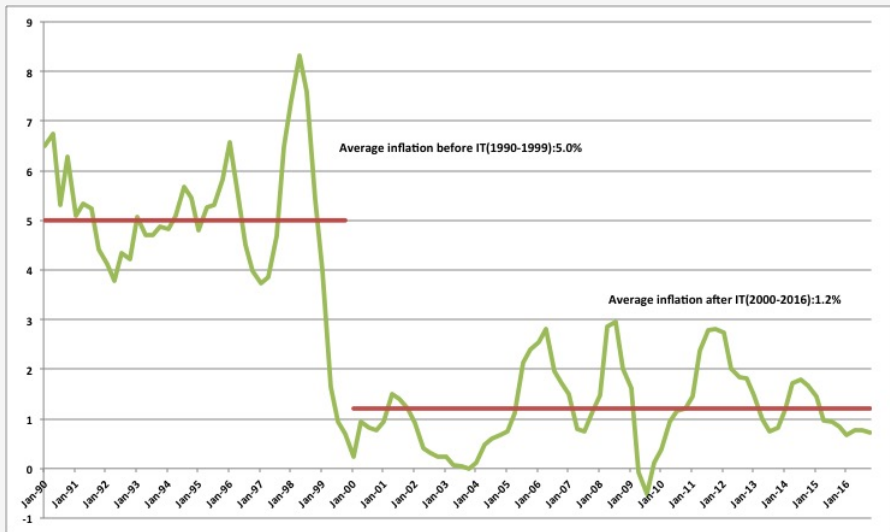
Inflation Targeting: Poland



Inflation Targeting: South Africa



Inflation Targeting: Thailand



Inflation Targeting: Observation

- Inflation targeting brought down the level of inflation in every country.
 - Is this good luck or good policy? Good luck argument may have played a role but it is difficult to believe that luck explains **all** level shifts across **all** countries.
 - Effective implementation requires some political stability that wasn't present in some countries prior to the inflation targeting regime.
 - In all countries, the description of inflation targeting includes increased transparency.
 - In (nearly) all countries, the inflation targeting regime forced coordination amongst policy makers; typically through the formation of new monetary policy committees (e.g. The Central Bank of Brazil's (BCB) Monetary Policy Committee (COPOM)).
 - In (nearly) all countries, the increased cooperation across policy led to **more instruments** at the central banks disposal.
 - In (nearly) all countries: More instruments. More rules, less discretion. More transparency, less opaqueness.

Inflation Targeting: More Transparency

- All countries make some aspect of the decision process publicly available (e.g., publishing minutes of policy meetings).
- South Korea appears to be only one that publishes inflation target without any public discussion of the process.
- Brazil: If inflation breaches the target, the Governor of the Central Bank is required to write an open letter to the Minister of Finance explaining the reasons the target was missed, as well as the measures required to bring inflation back to the target, and the time period over which these measures are expected to take effect.
- Hungary: Publishes voting records of MNB's Monetary Council.

Inflation Targeting: More Coordination

- South Africa: The decision on the appropriate monetary policy stance is taken by the Monetary Policy Committee (MPC). The MPC consists of 15 members: The Governor, three deputy governors and 10 officials of the Reserve Bank. Meetings were held every six to eight weeks.
- Hungary: creation of Monetary Council that included members outside of traditional monetary policy.
- Israel: Monetary Committee has six members. Three are from the Bank - the Governor, who serves as chairperson of the Committee, the Deputy Governor, and an additional Bank employee who is appointed by the Governor. The other three members of the Committee are representatives of the public.
- Poland: Monetary Policy Council consists of Chairperson, this being the President of the NBP, nine members appointed in equal numbers by the President of the Republic of Poland, the Sejm and the Senate.
- Indonesia: The inflation target is the level of inflation that must be achieved by Bank Indonesia in coordination with the Government. The Government and Bank Indonesia are steadfastly committed to achieving the established inflation target through policy coordination that consistently tracks this target.

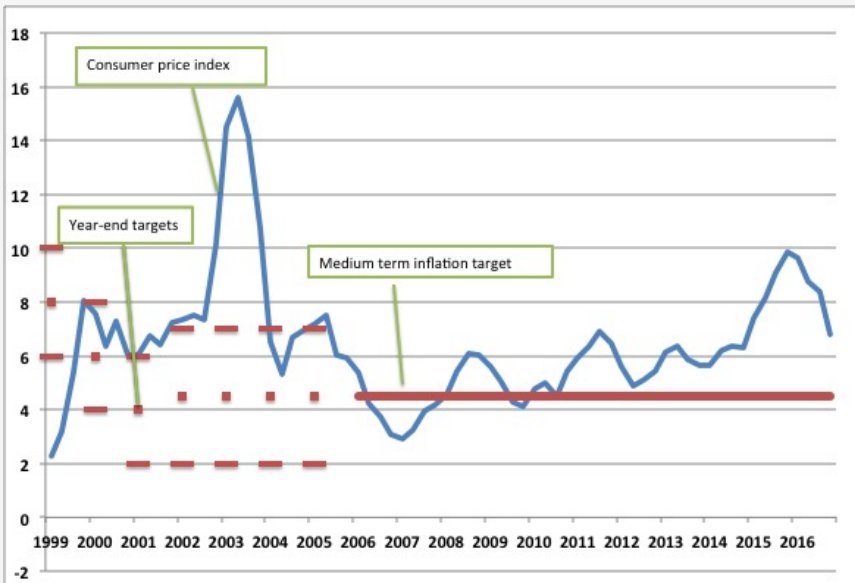
Inflation Targeting: More Instruments

- “Inflation Targeting in Colombia, 2002-2012,” by Hamann, Hofstetter and Urrutia
After decades using monetary aggregates as the main instrument of monetary policy and having different varieties of crawling peg exchange rate regimes, Colombia adopted a full-fledged inflation-targeting (IT) regime in 1999, with inflation as the nominal anchor, a floating exchange rate, and the short-term interest rate as the main instrument. We study the increasing number of instruments used by the CB, including systematic foreign exchange interventions, announcements, and, sporadically, macro-prudential policies, capital controls, and changes in reserve requirements, among others.
- Thailand adopted the managed-float exchange rate regime in support of price stability.
- The Swedish National Debt Office studies the implications of fiscal policy and increased scarcity value for government bonds on the transmission of monetary policy. Fiscal target.

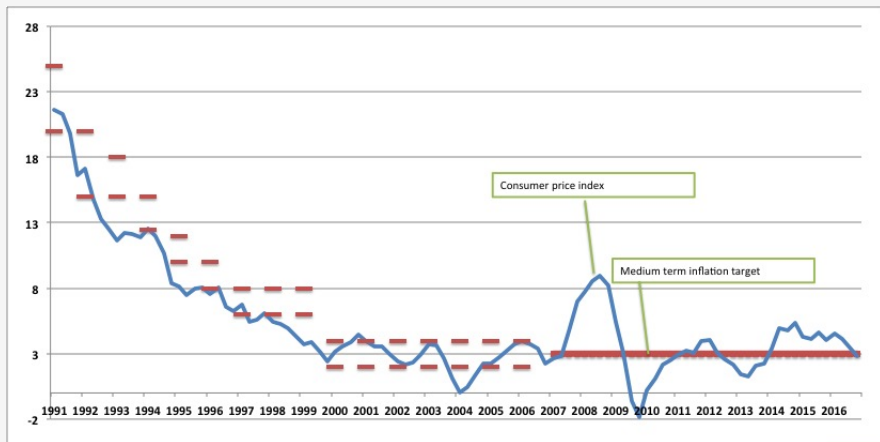
Inflation Targeting: Observation Two

Yearly inflation targets are rarely hit.

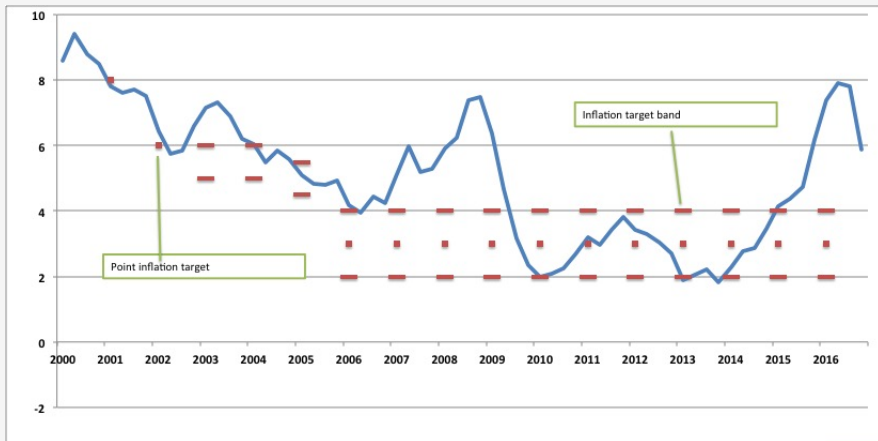
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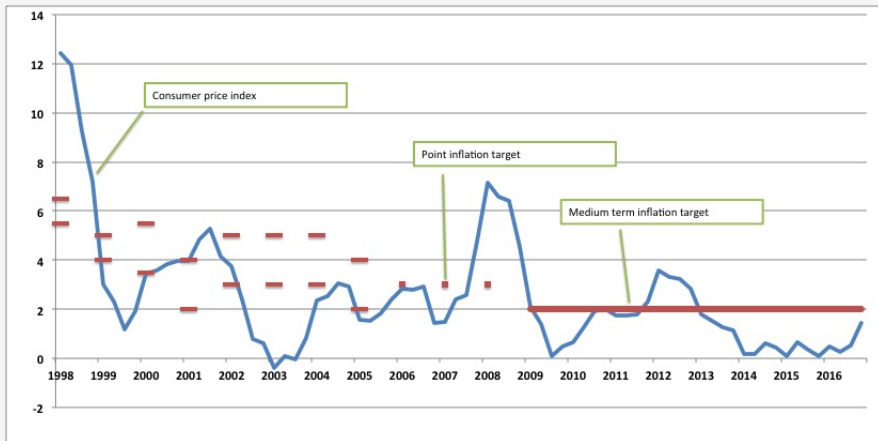
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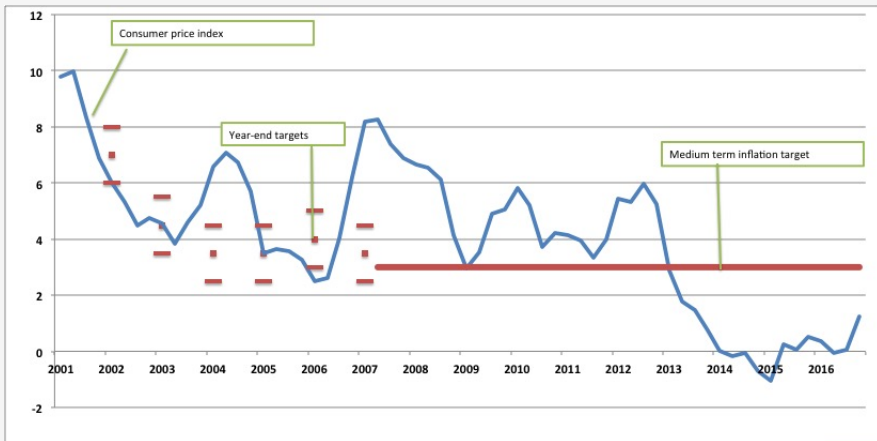
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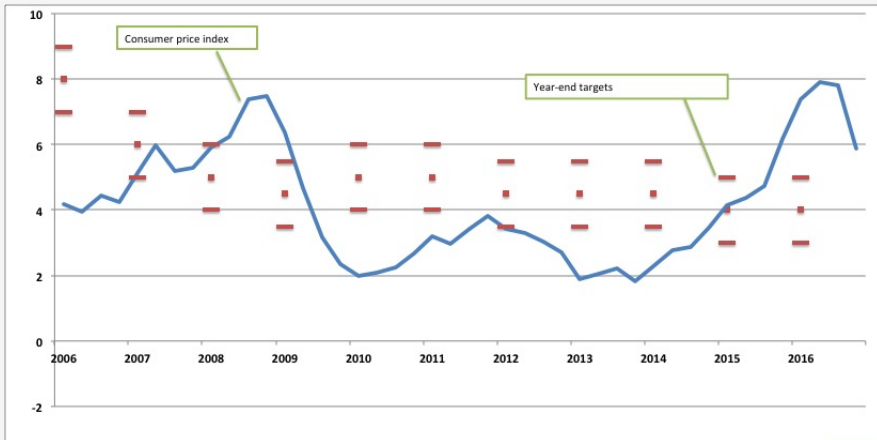
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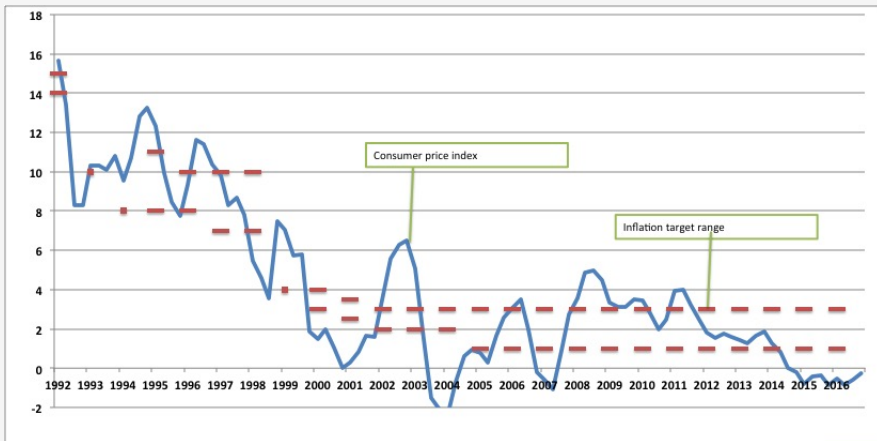
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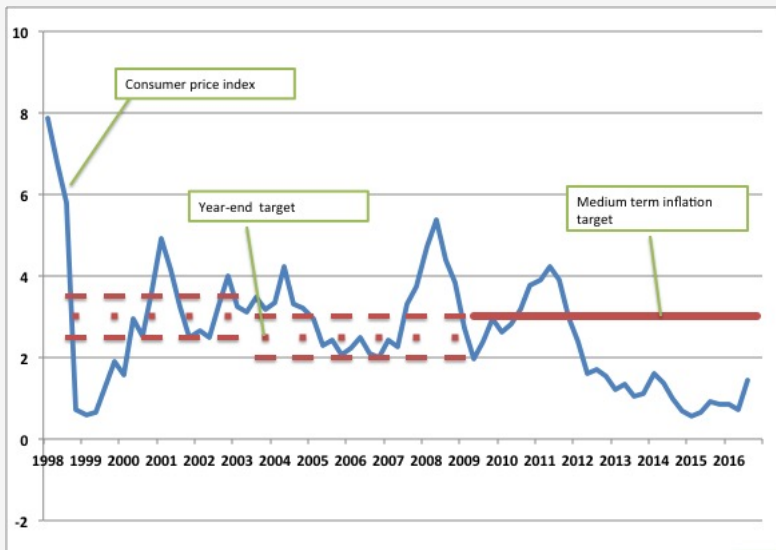
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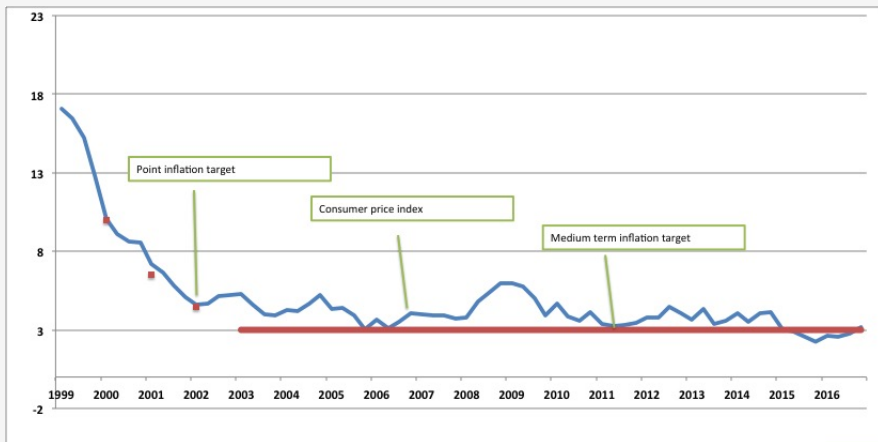
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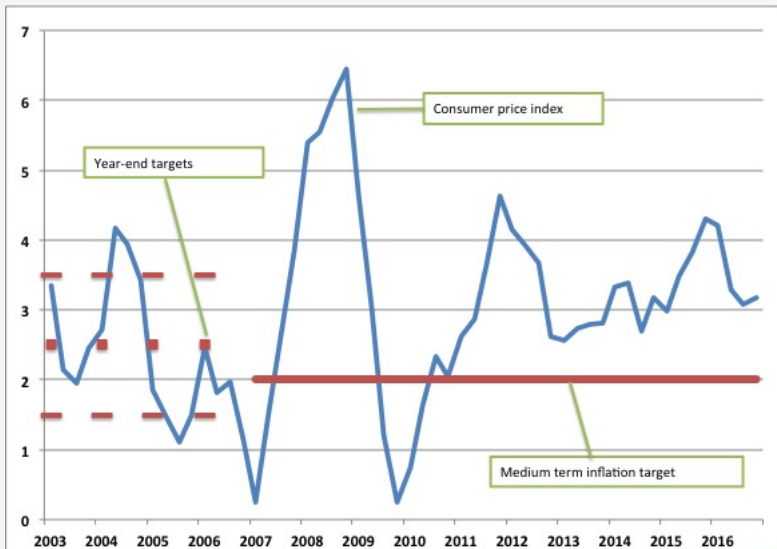
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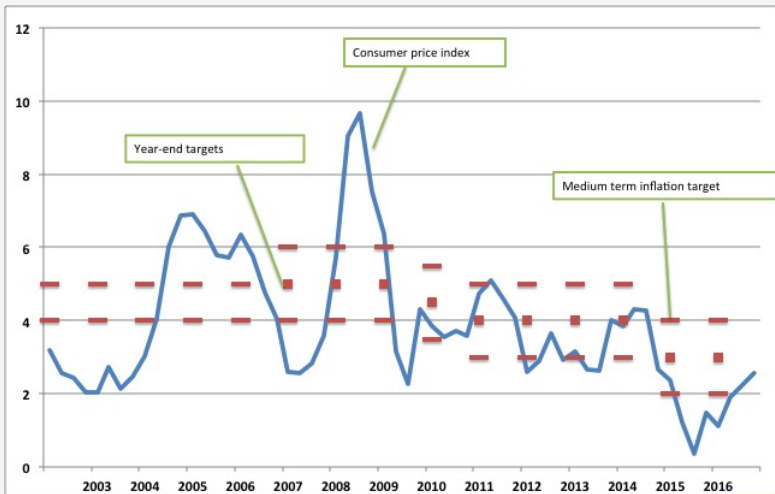
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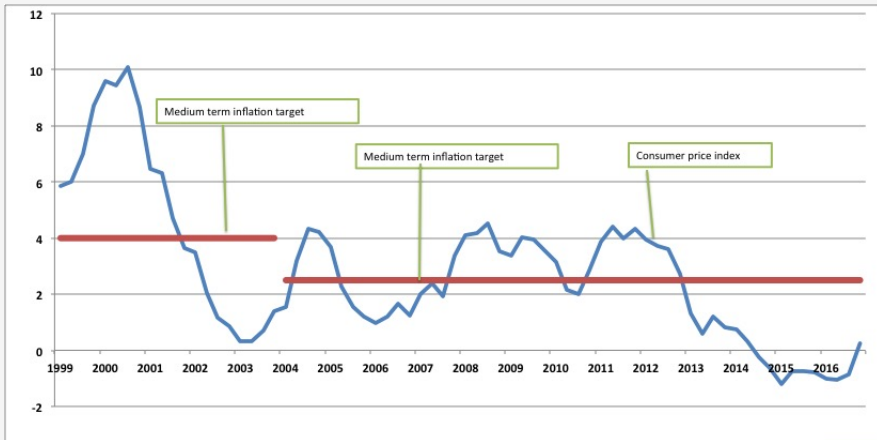
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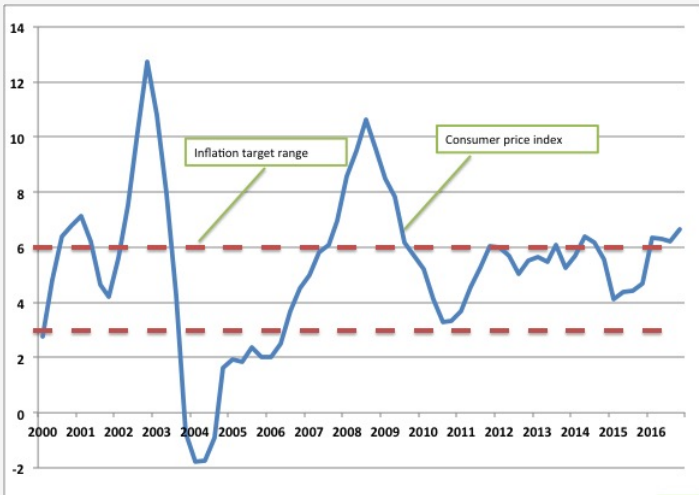
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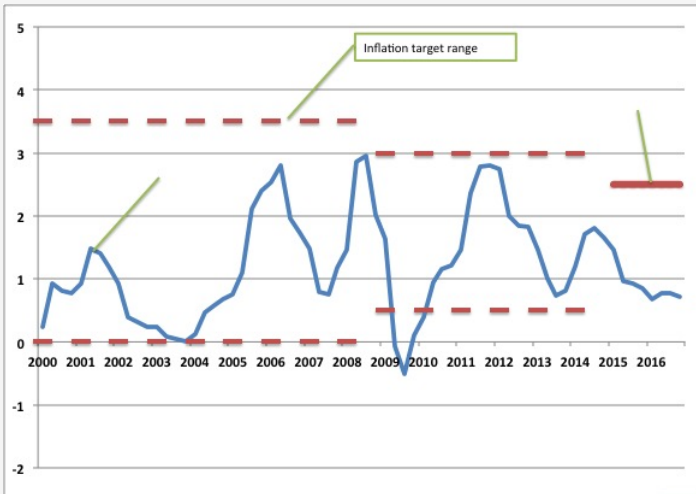
Inflation Targeting: Poland



Inflation Targeting: South Africa



Inflation Targeting: Thailand



Inflation (missing) Target

- Stated policy goals are numerous:
 - Price stability
 - Full employment
 - Financial stability
 - Exchange rate stability
 - Fiscal policy stability

- Shocks that hit these economies are also numerous. What will the US do?

- Countries have moved more toward medium-run (2 years) inflation targets or bands $2\% \pm 1.5\%$

- Are inflation expectations pinned down by **long-term target**?
Very few central banks seem to know the answer to this question.

Concluding Thoughts

- Policy interactions are important for anchoring expectations.
- This seemed to work for emerging economies to bring down level of inflation.
- Similar in spirit to Sargent's "End of Four Big Inflations." Coordination and communication is critical!
- Central Banks like Banco Central de Colombia have done a great job stabilizing inflation levels.
- Hitting exact target is impossible. Anchoring medium-term expectations is not.
- Fiscal Policy (and open communication) should play a role in anchoring expectations.