

# The Long Journey from High Inflation to Price Stability: The Case of Israel

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Price Stability and Financial  
Developments  
Central Bank of Argentina



Dr. Karnit Flug

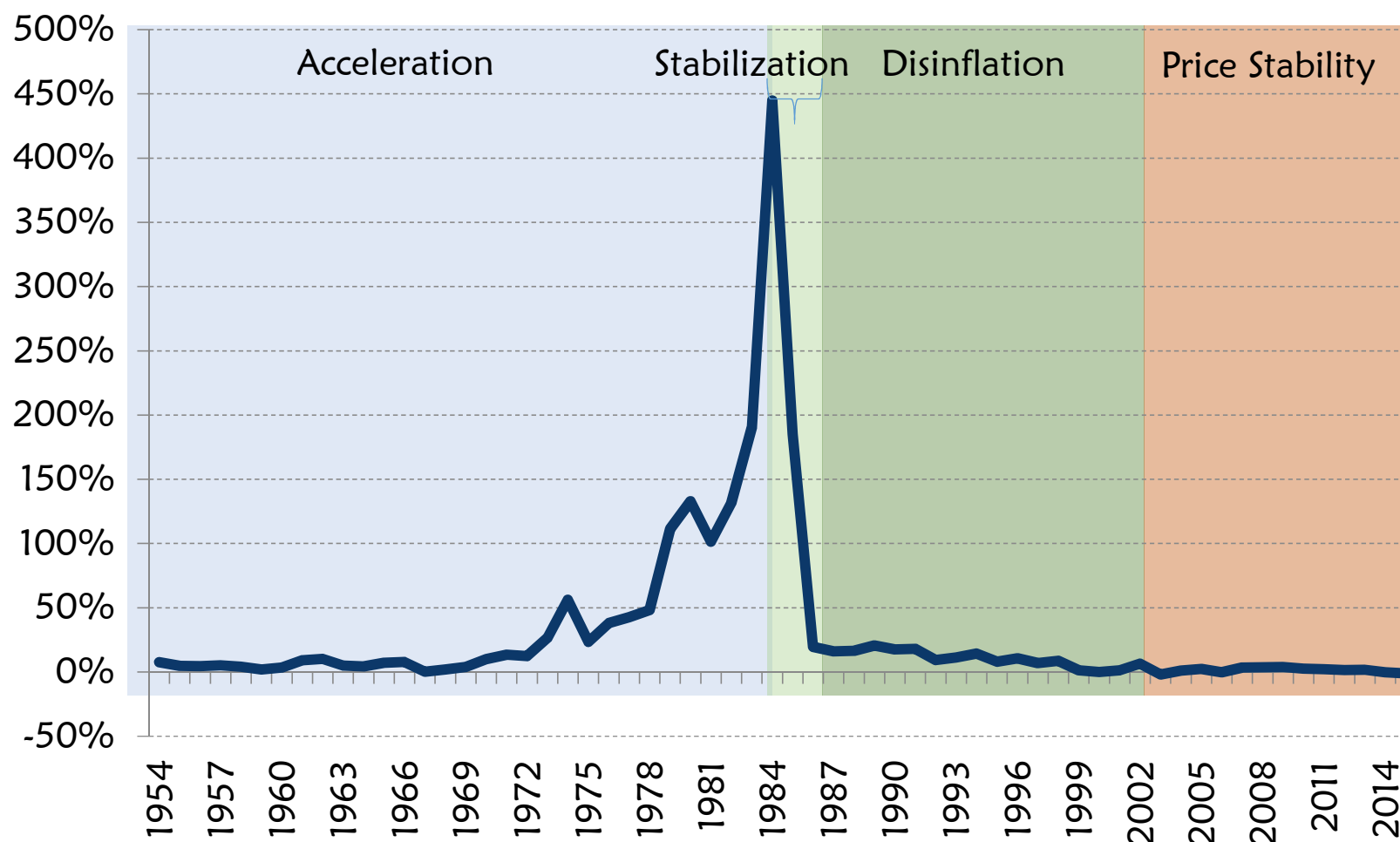
Governor of the Bank of Israel

September 19<sup>th</sup> - 20<sup>th</sup> 2016



# Inflation Since the Establishment of the Bank of Israel

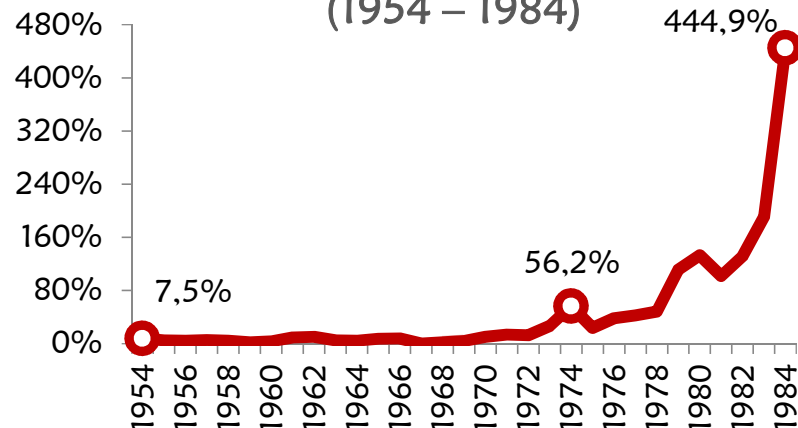
Actual inflation (12-month) 1954 - 2015



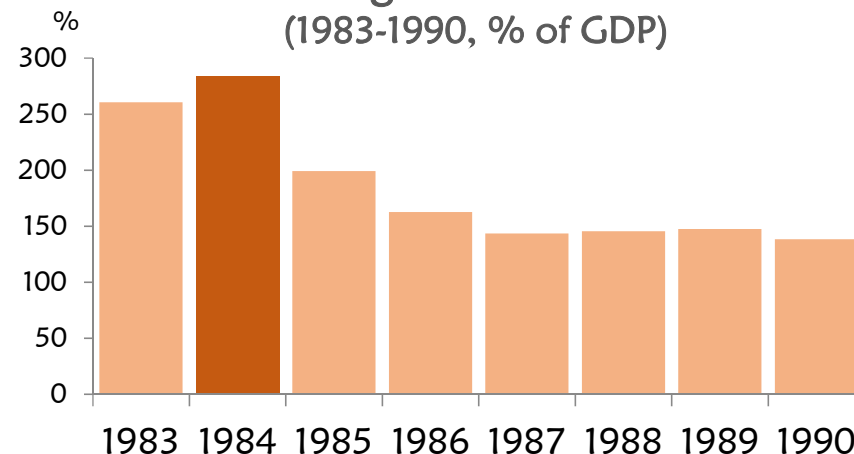
# “Acceleration”: (1954 to 1985)

## Israel's Public Finances - Root Cause of High Inflation

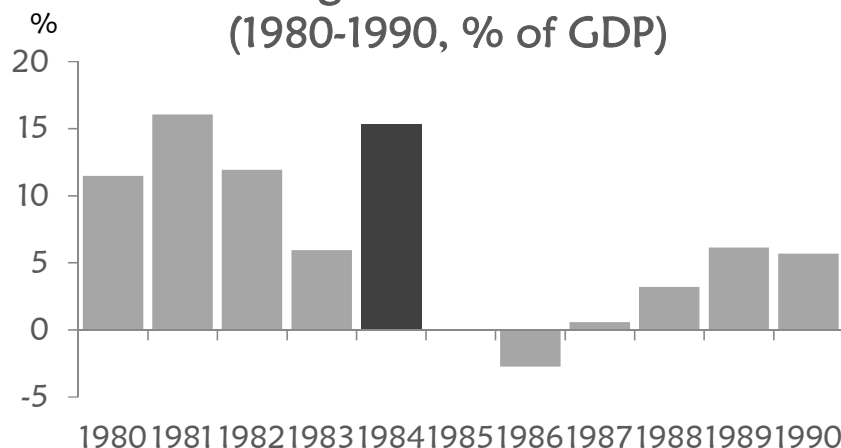
Actual inflation (12-month)  
(1954 – 1984)



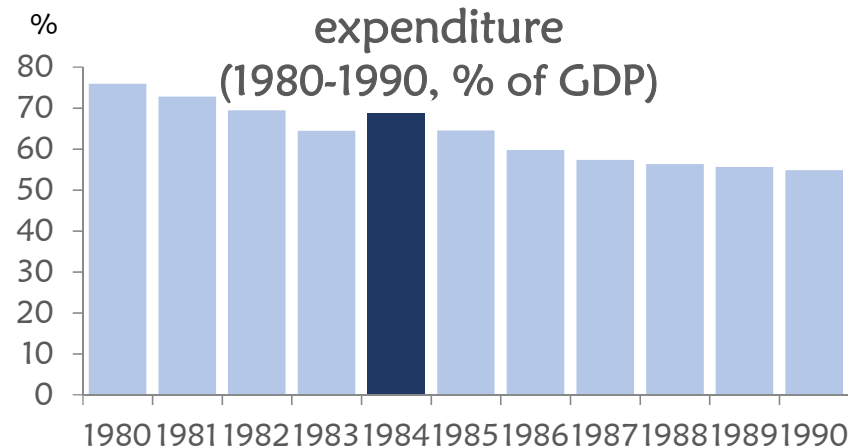
Israel's government debt  
(1983-1990, % of GDP)



Israel's government deficits  
(1980-1990, % of GDP)



Israel's government public  
expenditure



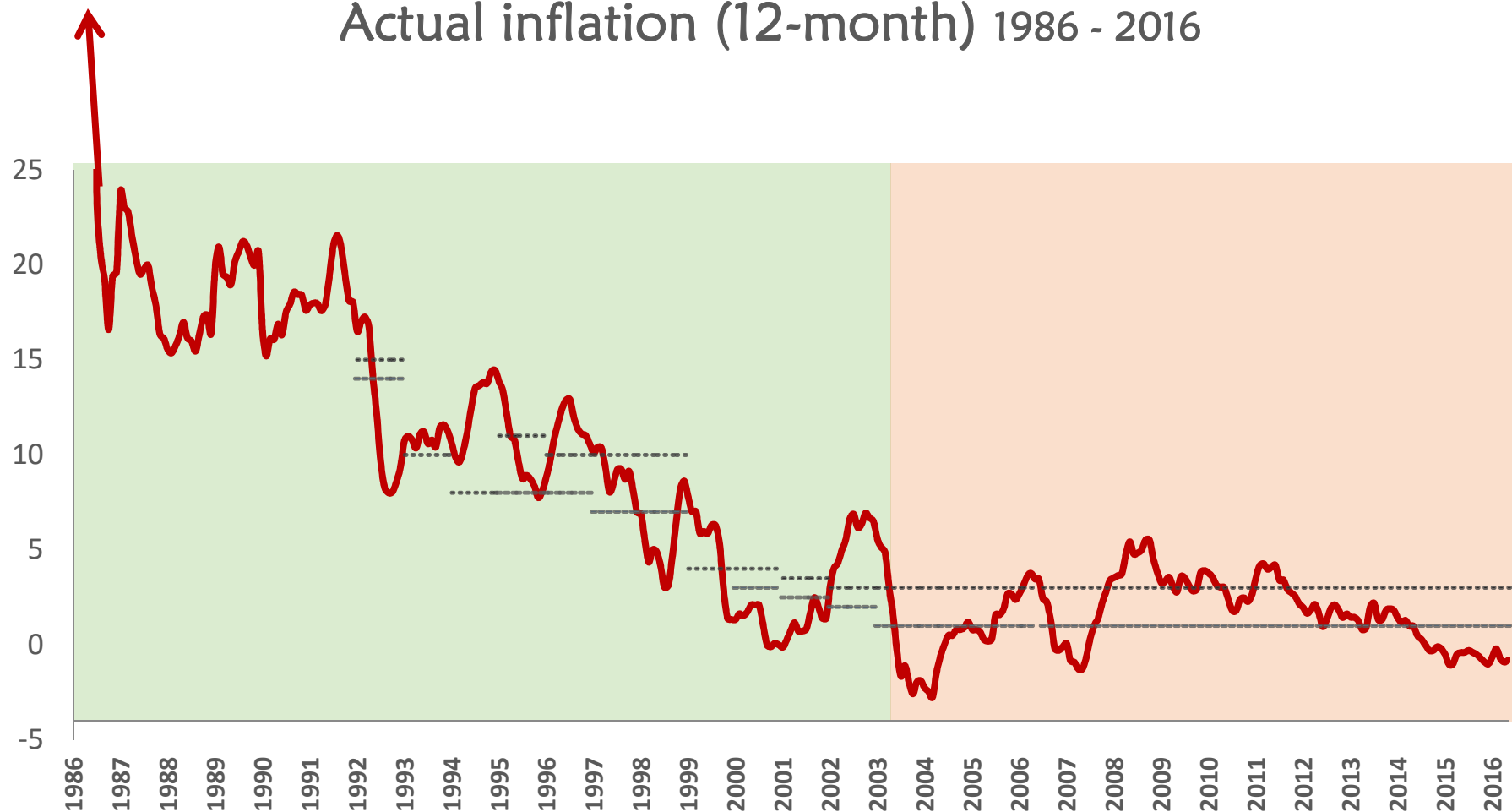


## The 1985 Stabilization Plan

- ☐ Agreement between the government, industry and trade unions
- ☐ Reduce deficit
- ☐ Freeze wages and government-controlled prices
- ☐ Fix the exchange rate after a one-time 25% devaluation
- ☐ Law prohibiting the BOI from printing money to finance deficit
- ☐ \$1.5 billion in aid from the US

# From “Disinflation” toward “Price Stability”

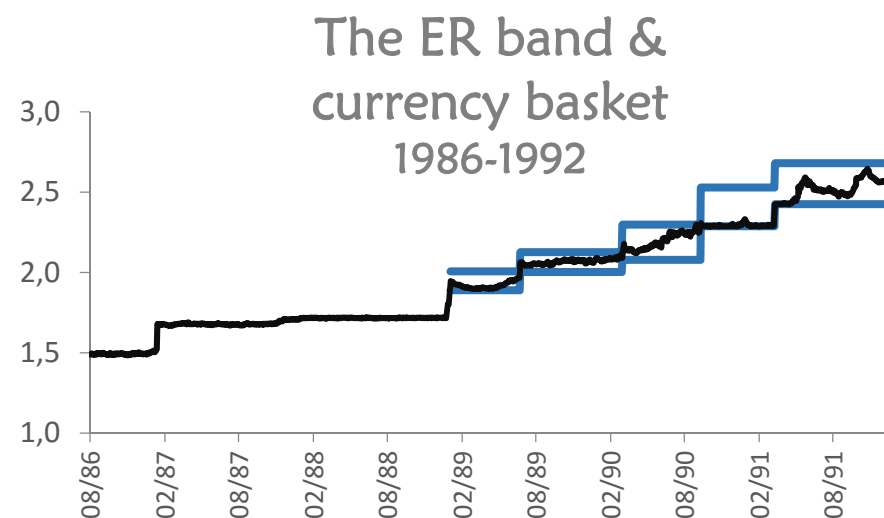
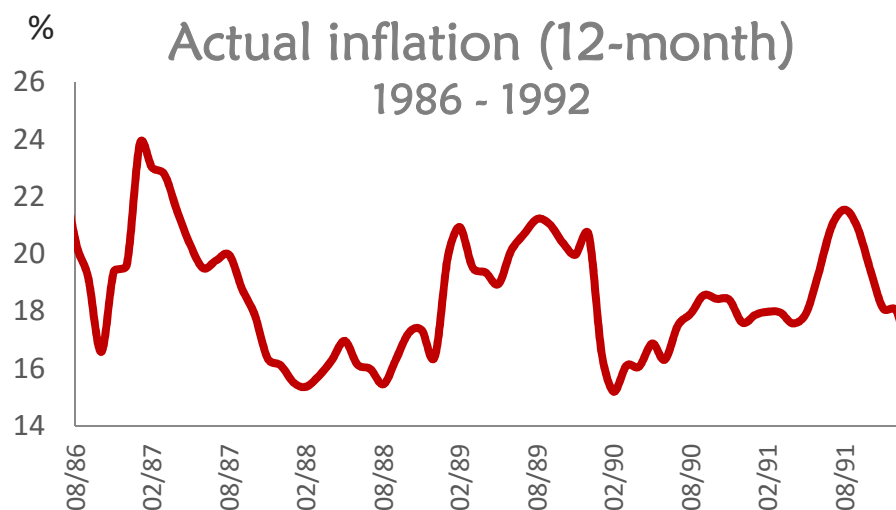
Actual inflation (12-month) 1986 - 2016





## 1986 to the End of 1991: Inflation is “Stuck” in the 16-20% Range

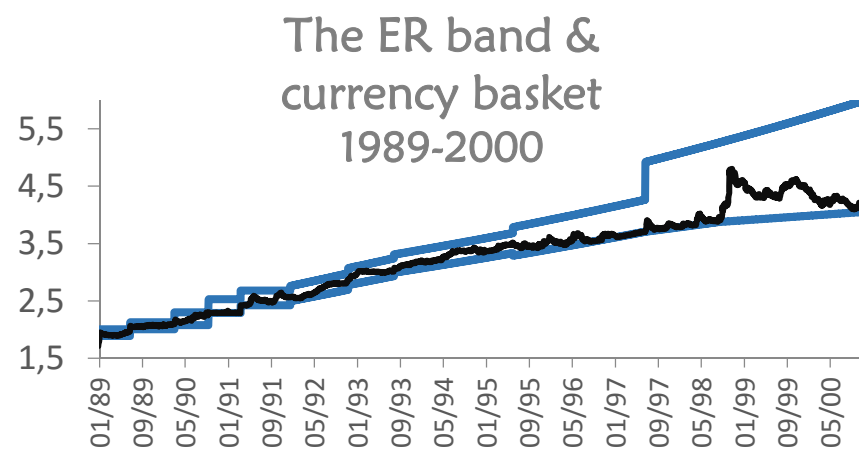
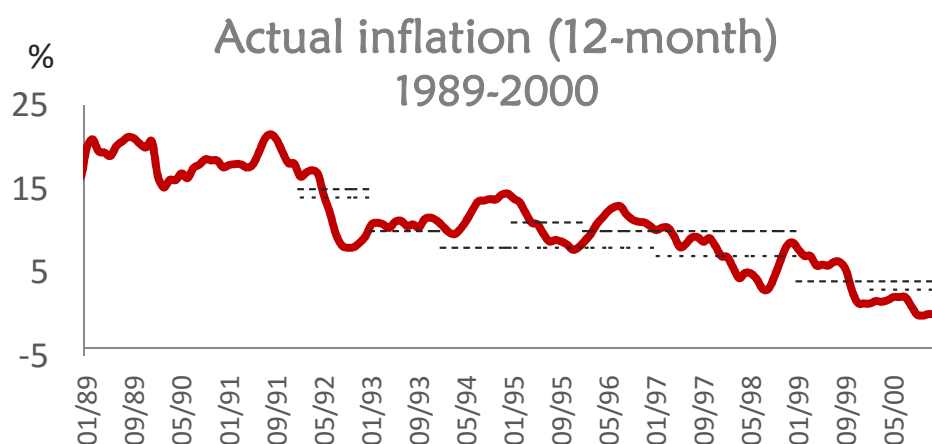
- ❑ **1986:** ER was set as nominal anchor. The inflation rate remained high; ➡ erosion of competitiveness; ➡ repeated devaluations
- ❑ **1989:** ➡ ER is unsustainable as an anchor ➡ an ER band was established
- ❑ **1990:** An external shock (immigration) led to a substantial decline in inflation





## End of 1991 Onward – Gradual Move Toward IT

- End of 1991: Moderate reduction in nominal interest rates; real rates Opportunistic approach to disinflation
- Introduction of the 'diagonal' crawling ER band—the slope was set according to IT, defined by the government
- The nominal strategy changed:
  - Fixed ER replaced by IT as an anchor
  - ER and interest rate as policy tools





## 1992 to 2000 - Taming Inflation: How Did Inflation Drop to Zero?

- ❑ Government opted for gradual disinflation.
- ❑ Fear of the sacrifice ratio—the price paid in unemployment to reduce inflation.
- ❑ Diagonal ER band + IT anchoring inflation.





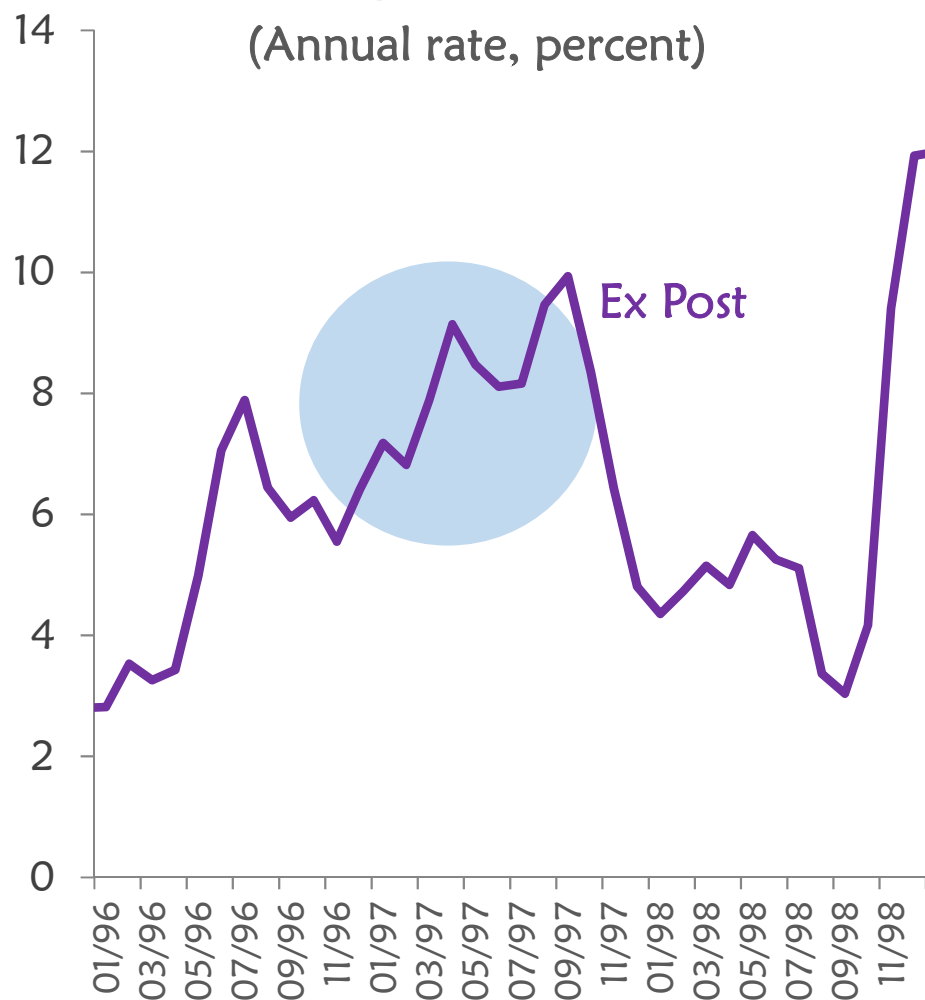
## The Battle Over Low Inflation: 1996-1998

- ❑ By 1996, the Bank of Israel was seeking to reduce inflation at a faster pace than the government thought was proper
- ❑ Tight monetary policy → exchange rate forced to the lower bound
- ❑ BOI sterilized FX intervention → maintained high interest rates and lowered inflation.
- ❑ Intensive use of Bank of Israel short-term securities to sterilize

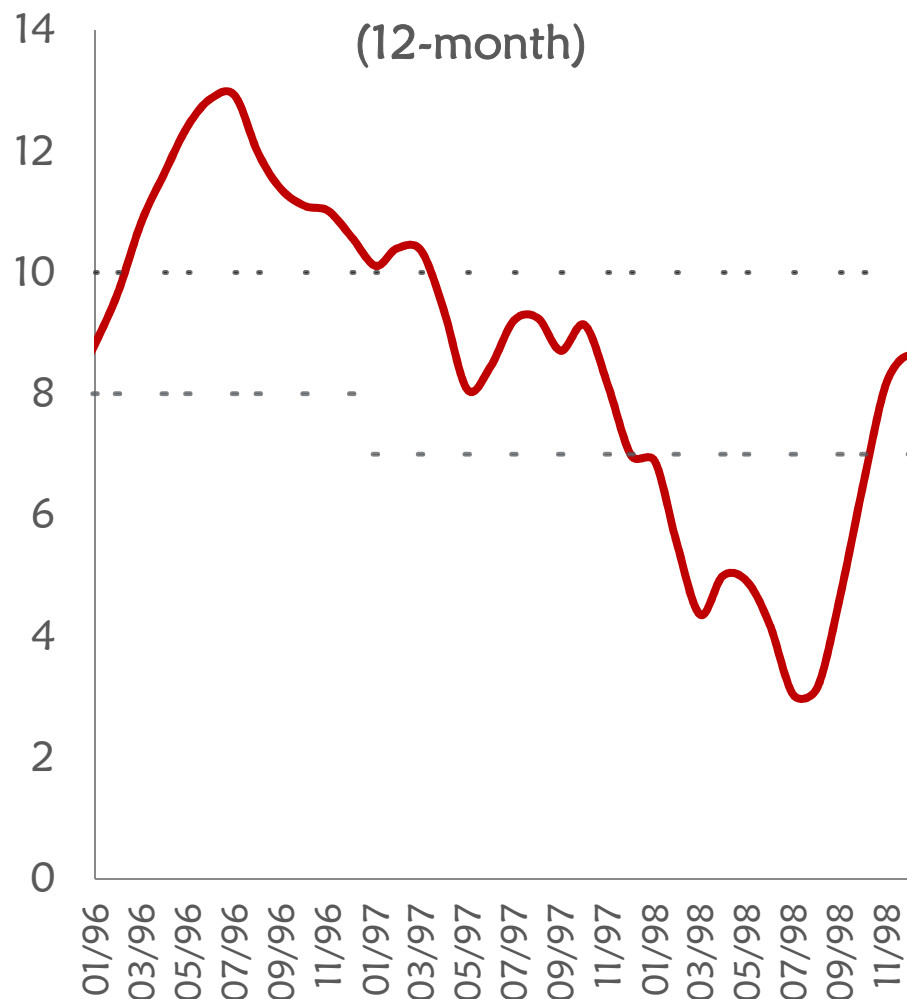


# Disinflation and Price Stability Achieved by Tight Monetary Policy, 1996-1998

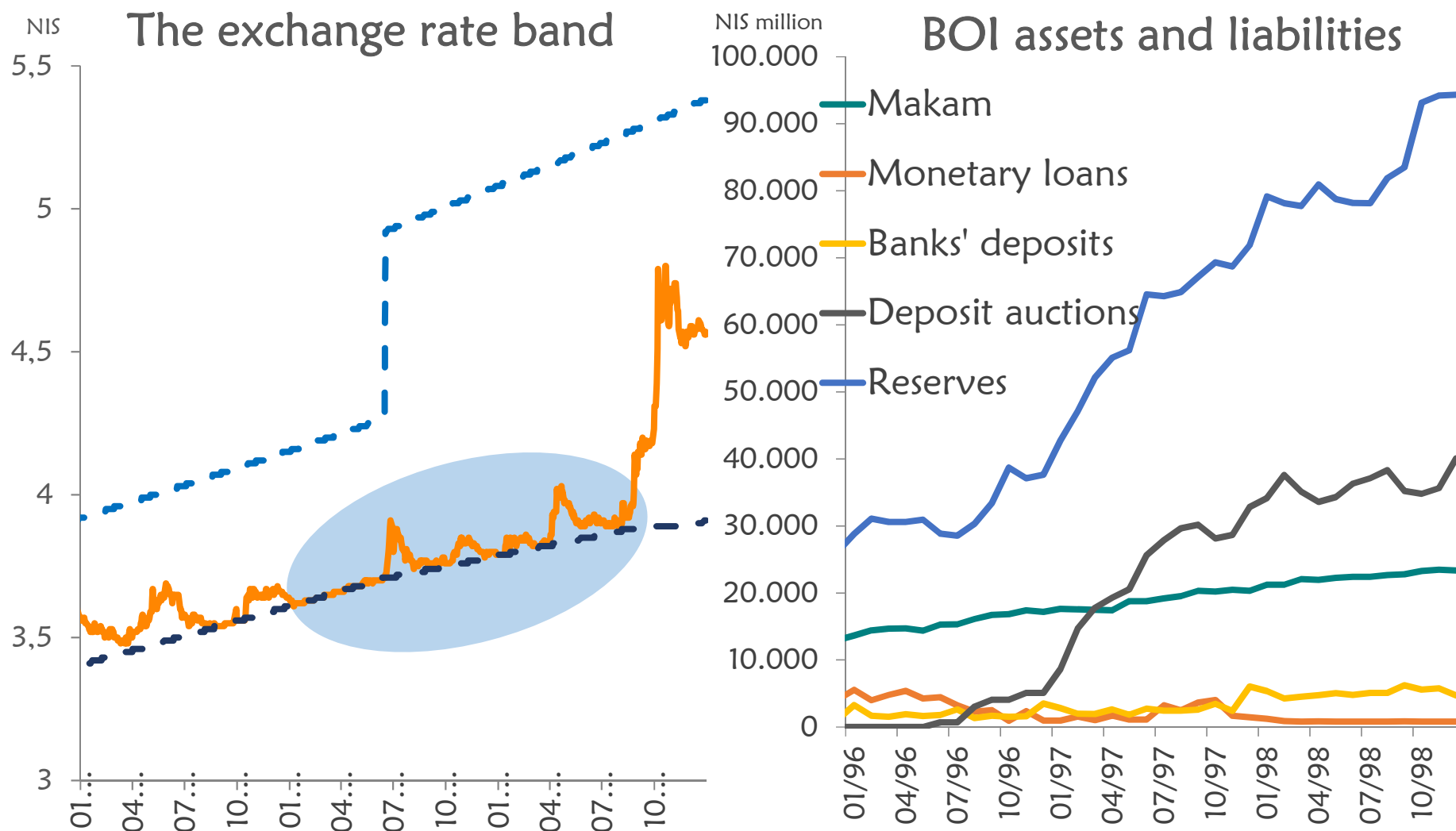
Real BOI interest rate  
(Annual rate, percent)



Actual inflation  
(12-month)

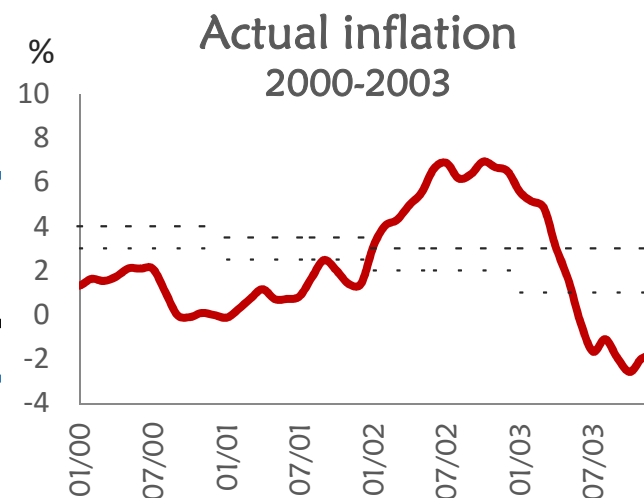
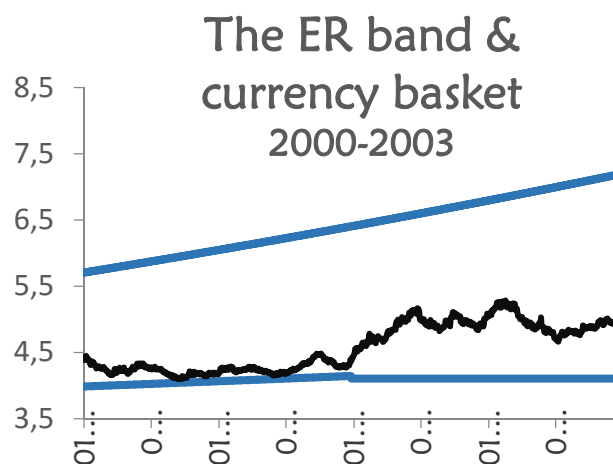
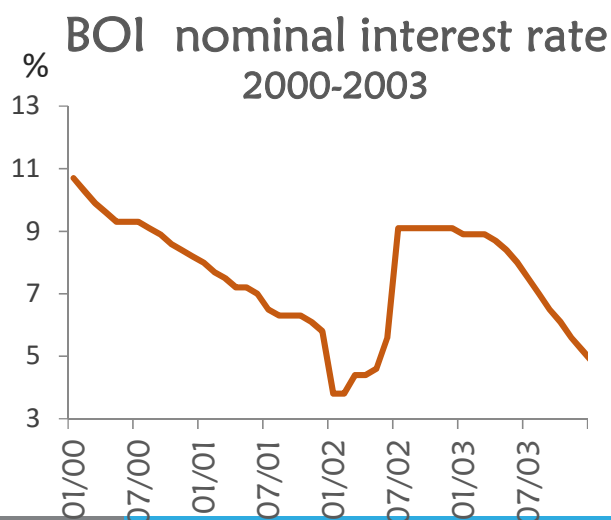


# The Exchange Rate Band and the “Great Sterilization” 1996–1998



# Policy Debacle: Loss of Credibility

- ❑ High monetary interest rate and real interest rate drove inflation to zero despite the higher government-set inflation target
- ❑ 2002: Interest rate reduced by 200 basis points at one time as part of a “package deal”
- ❑ Credibility undermined – sharp depreciation of the of ER → inflation ↑
- ❑ Interest rates increased sharply





## Achieving Credibility and Anchoring Inflation Within the Target Range: 2005-Onward

- ☐ After the debacle of 2002: Monetary policy adheres closely to the inflation target
- ☐ Follow a Taylor rule
- ☐ The inflation is anchored at the target range since 2005



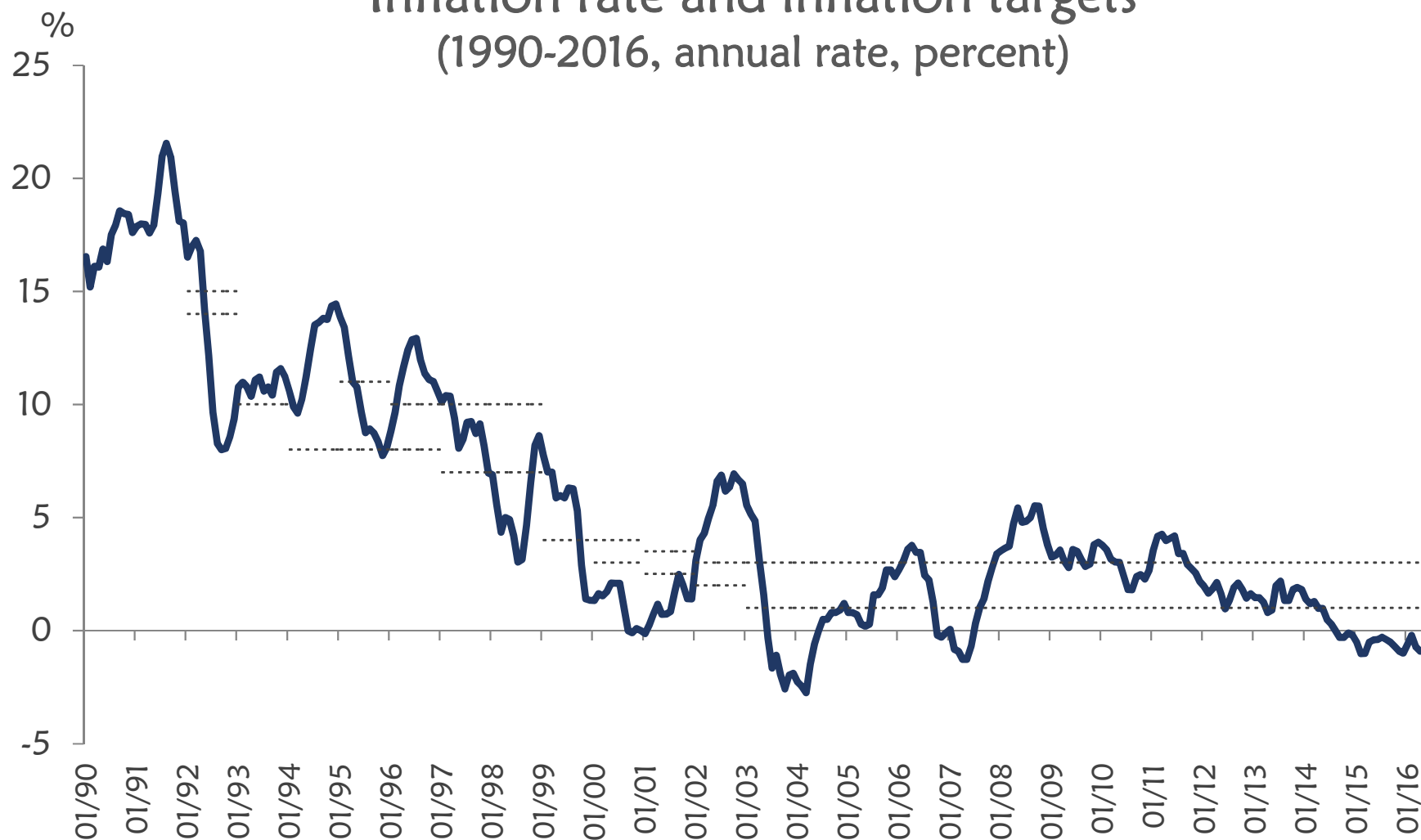
# New Bank of Israel Law 2010: From De Facto to De Jure IT

## BOI's Policy Objectives:

- ☐ Maintain price stability, as the central goal (Allow up to 24 months to correct deviations from target)
- ☐ Support economic policy, primarily growth, employment and reducing social gaps
- ☐ Support the stability and orderly activity of the financial system
  - ☐ Independence in the use of policy tools
  - ☐ Monetary Policy Committee – 3 internal members and 3 external members

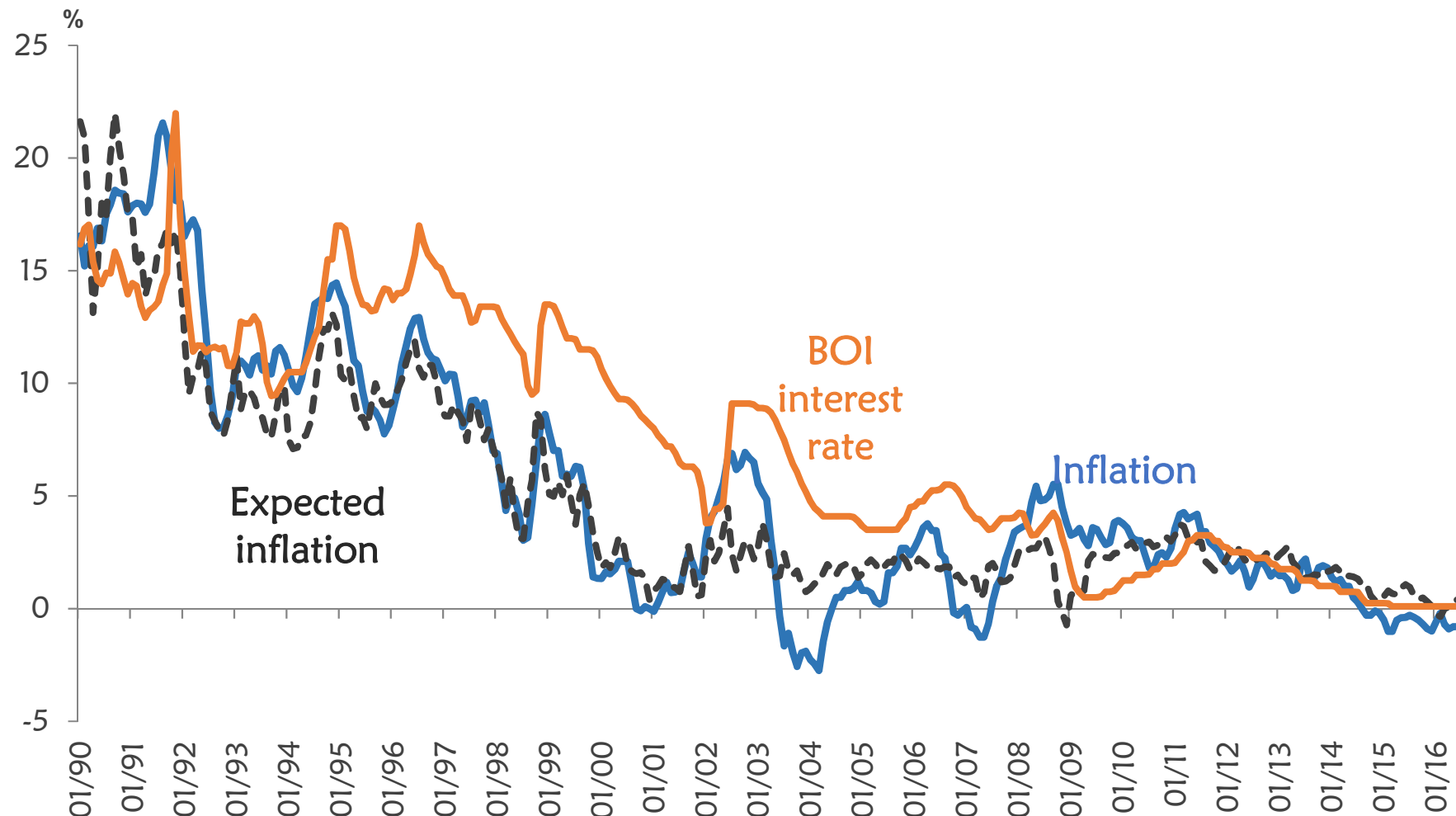
# The Road to Price Stability

Inflation rate and inflation targets  
(1990-2016, annual rate, percent)





# Inflation, Inflation Expectations, and the Key Rate (1990-2016, annual rate, percent)

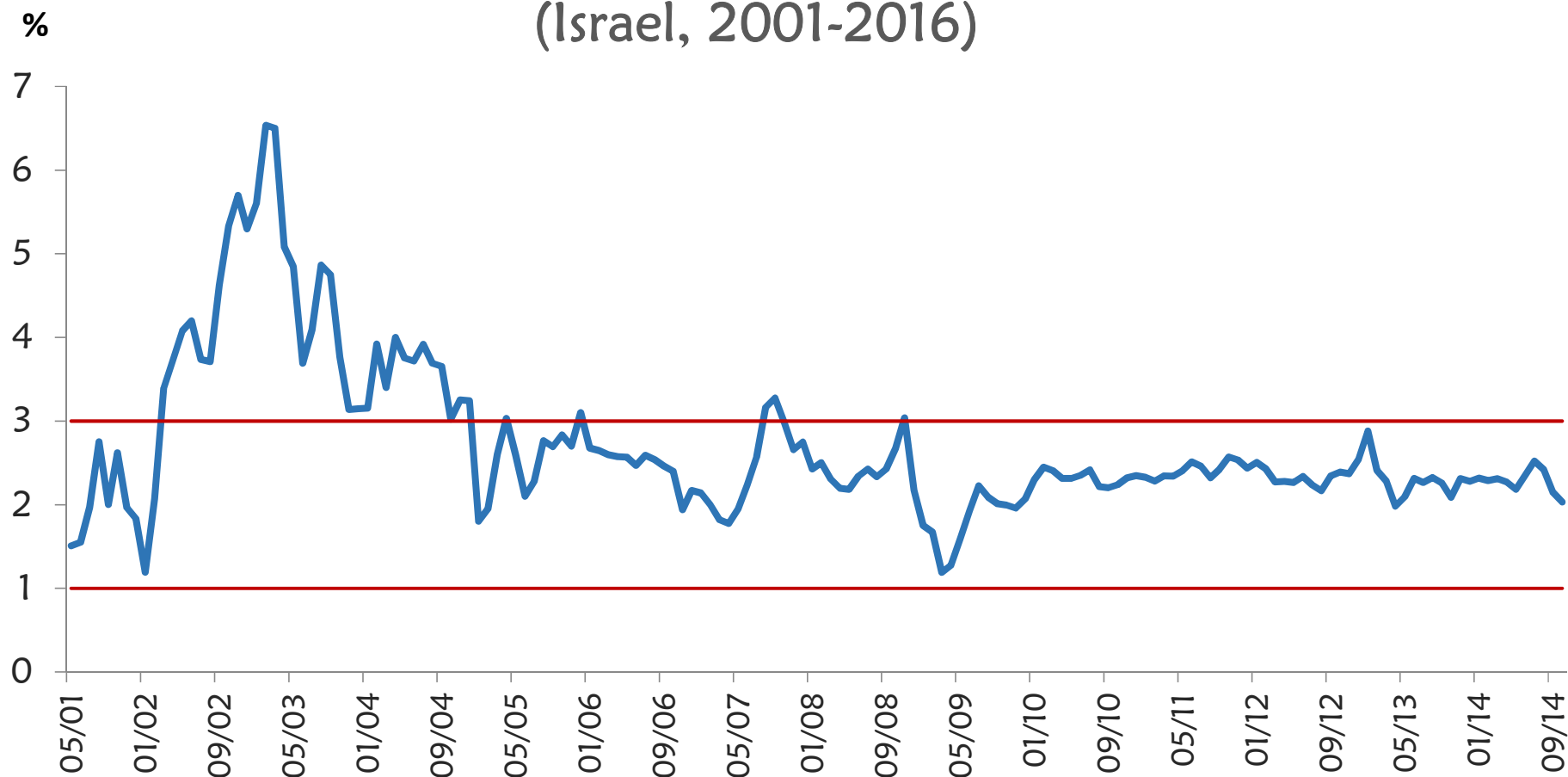




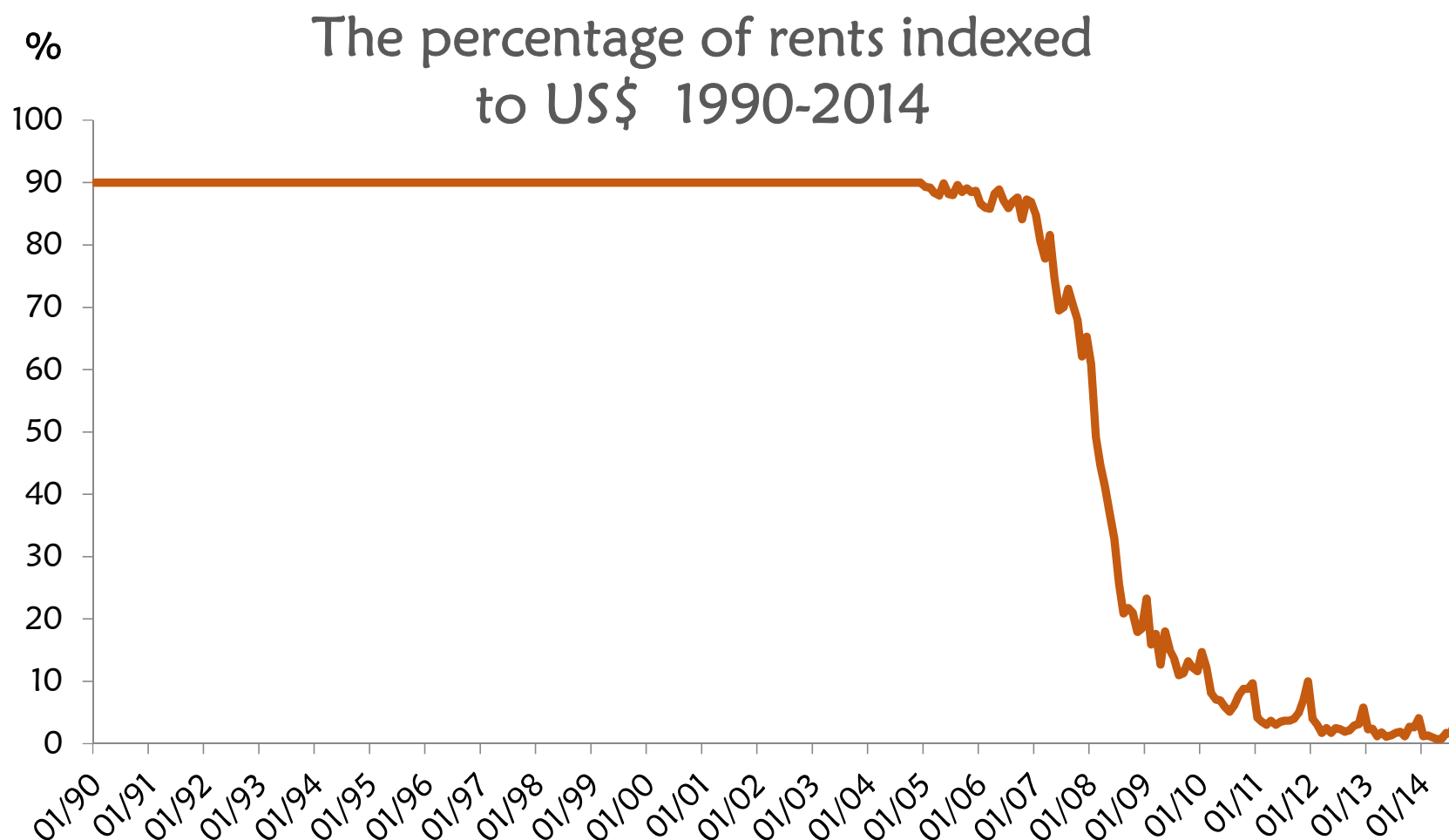


# Credibility of Monetary Policy Achieved by 2005

10-year breakeven inflation expectations  
(Israel, 2001-2016)



# Indexation of Rent Contracts in US\$



\*Data until 2004— assumes 90%

indexation



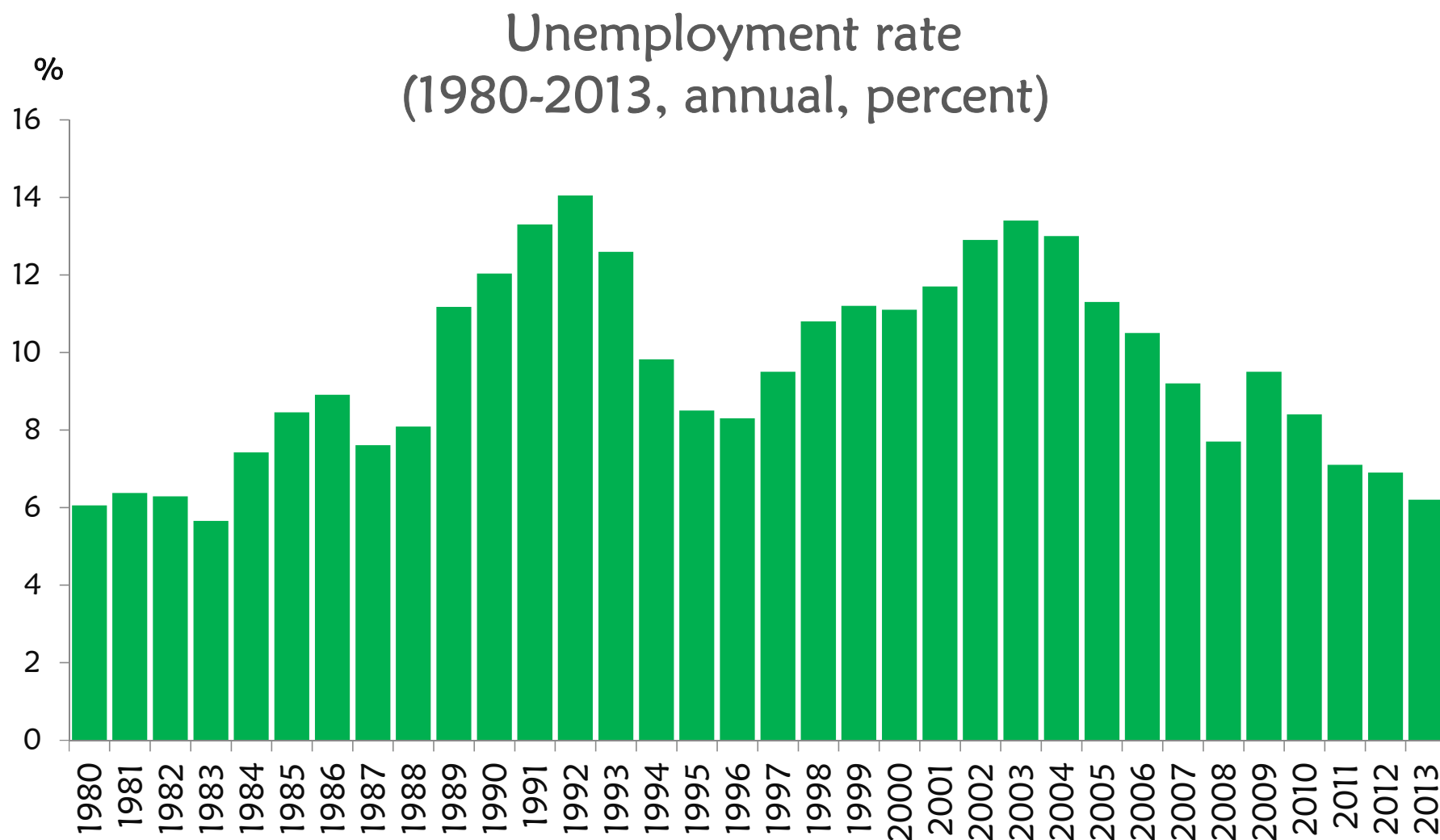
# Lessons From Israel's Experience

## During Disinflation:

- ❑ Focus on inflation (rather than output gap):  
React aggressively to upward deviations from target
- ❑ Real interest rate is very effective in achieving the inflation target
- ❑ Institutional arrangements of indexation prolong the disinflation process



# Unemployment Increased During Sharp Disinflation Periods





# Implementing Monetary Policy

- ❑ Use of interest rate policy is dependent on the ability of the central bank rate to affect monetary aggregates
- ❑ In countries with underdeveloped banking systems – use of repo is limited
- ❑ Central bank can issue central bank bonds
- ❑ Central bank can operate by offering deposit facilities to banks



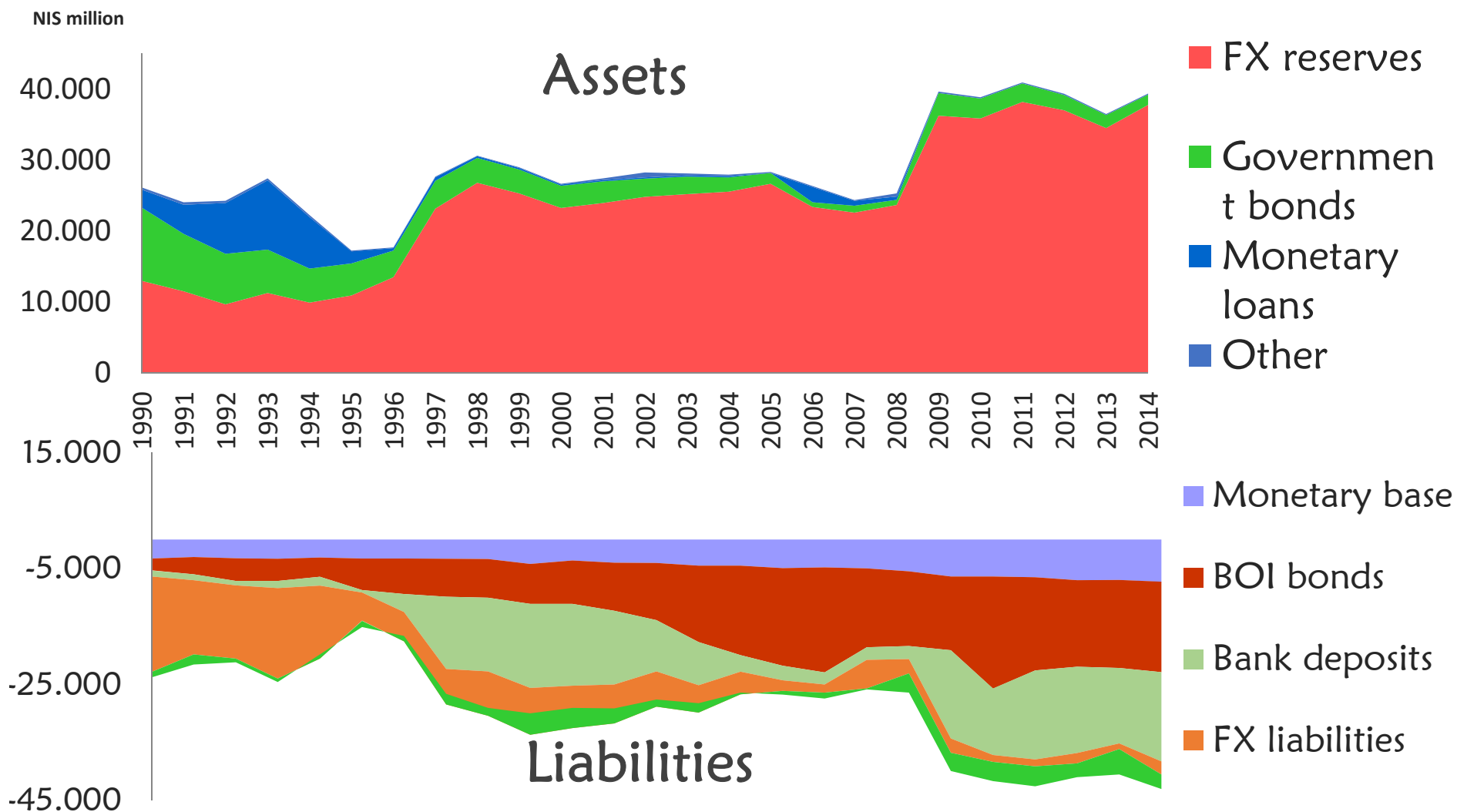
## Implementing Monetary Policy (continued)

- ❑ In disinflation stage – fear of floating, as risk of sharp exchange rate depreciation is significant
- ❑ Instead of Taylor rule, provide the central bank with an exchange rate target (band) that is consistent with the inflation target and requires the use of interest rate policy
- ❑ Therefore, managed floats are used – leading to buildup of FX reserves and the need for sterilization



# BOI Balance Sheet: Assets and Liabilities

(NIS million, annual, 1990-2014)







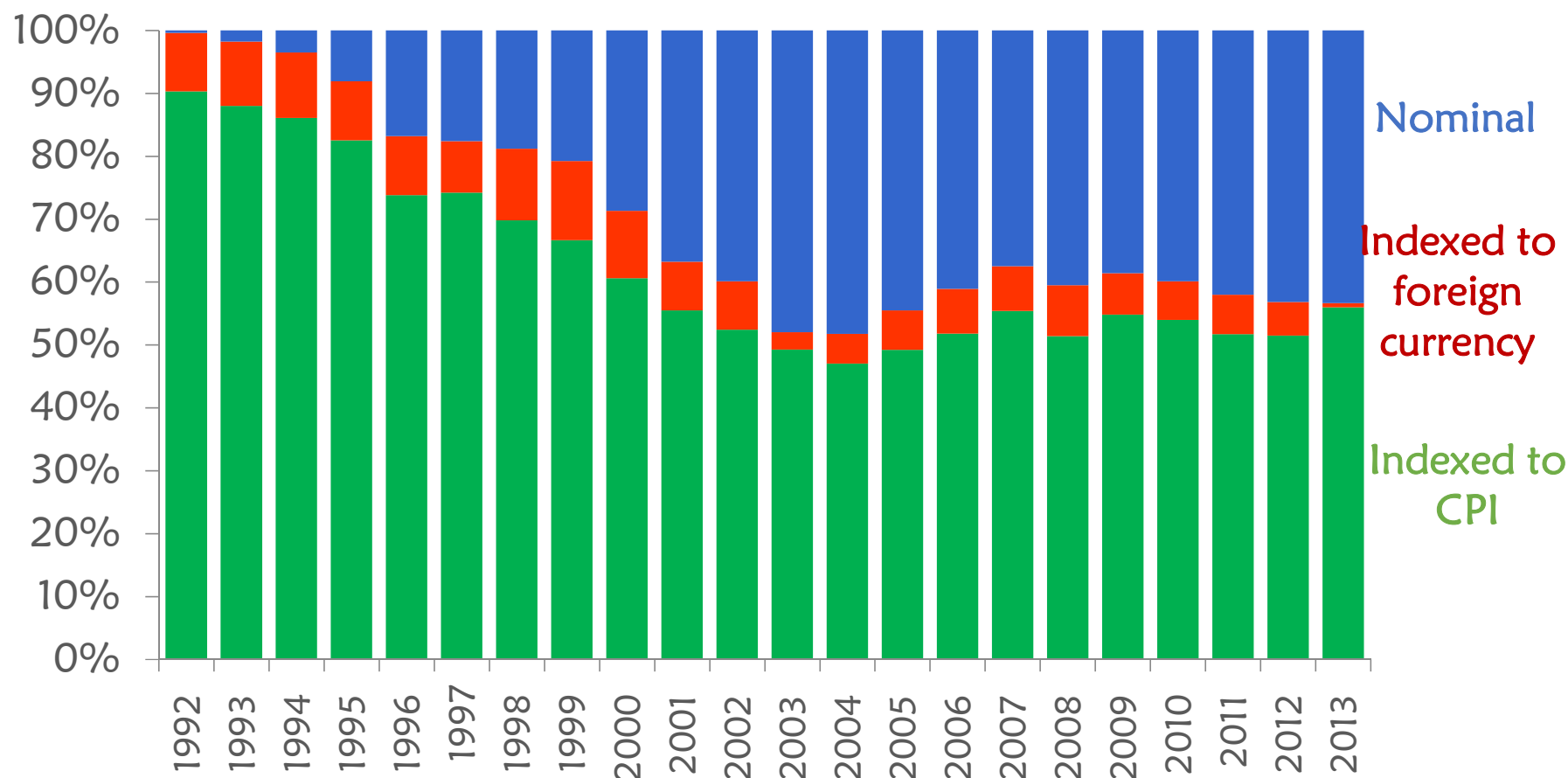
## The Final Stage of Inflation Targeting – Anchoring Long-Term Inflation Expectations

- ☐ Ability to issue long term nominal government bonds
- ☐ Anchoring is achieved when long-term inflation expectations are anchored around the target
- ☐ Expectations derived from breakeven inflation when nominal government bonds are introduced in conjunction with existing indexed bonds
- ☐ Free float is possible as short terms fluctuations in exchange rate do not undermine price stability



# Disinflation Allowed Government to Issue Nominal Debt and Longer Maturities

Market share of government bonds  
by indexation type – 1992-2013

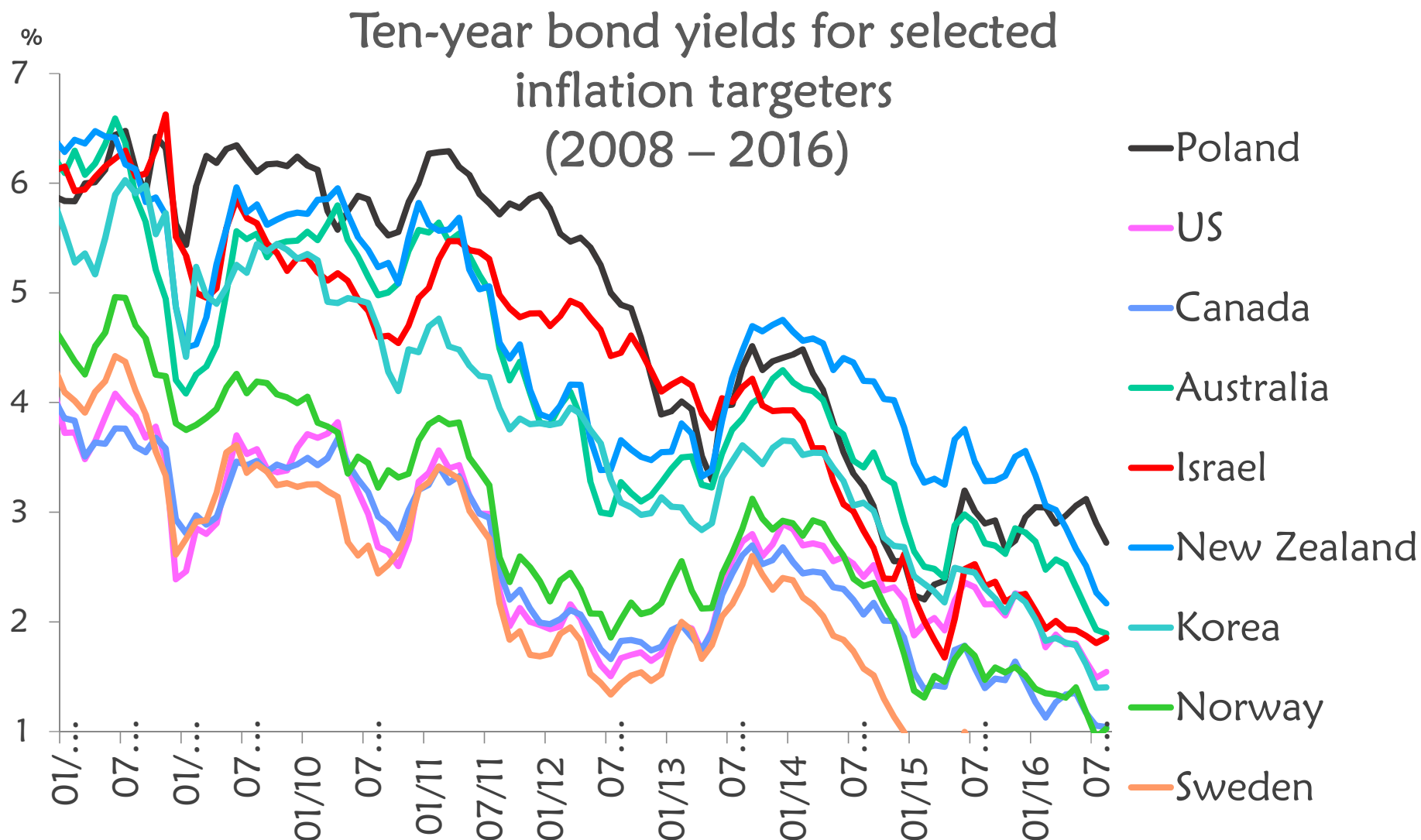




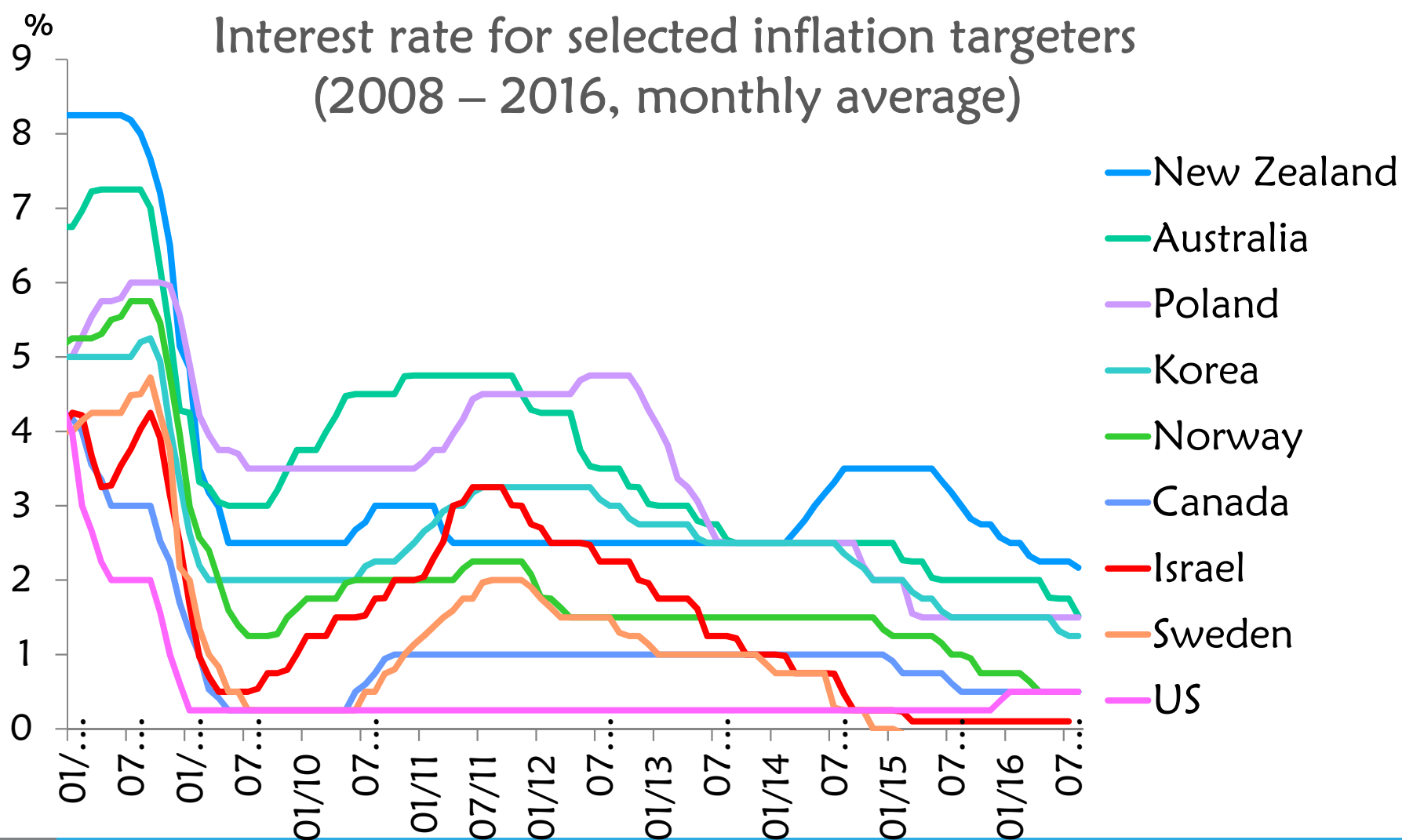
## The Final Stage of Inflation Targeting – Anchoring of Long Term Inflation Expectations

- ❑ Flexible inflation targeting – allows for temporary deviations from IT and targeting output gap
- ❑ Use forward looking policy – “ahead of the curve”
- ❑ Incorporating expectations about activity abroad

# Anchoring of the Long Term Nominal Yields



# Short Term Interest Rate Policy Flexibility





## Conclusions:

- ☐ Initial stages of inflation targeting
  - ☐ Focus on inflation
  - ☐ Be aggressive
- ☐ If necessary, enhance tools by issuing central bank bonds
- ☐ If managed float is chosen – sterilize
- ☐ Loosen stance only after long term expectations are anchored
- ☐ Use forward looking and outward looking Taylor rule



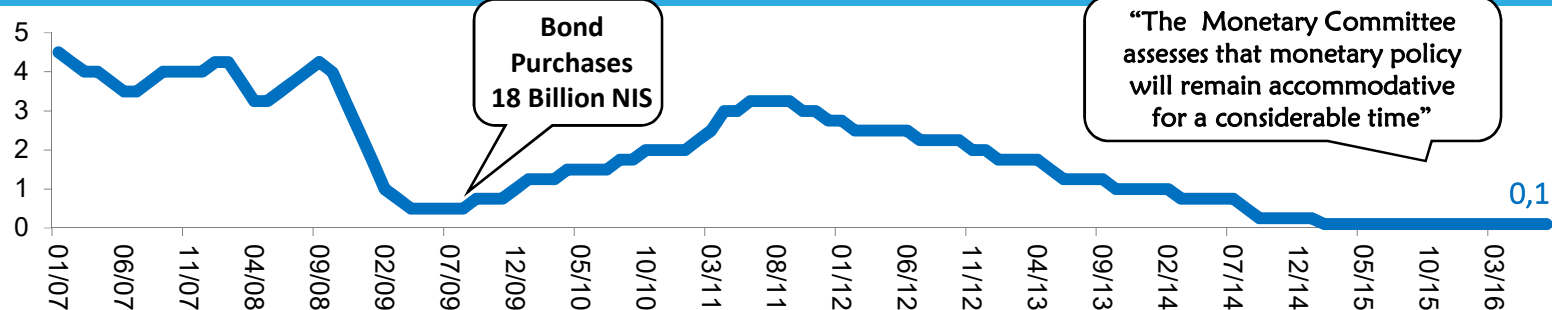
Thank You



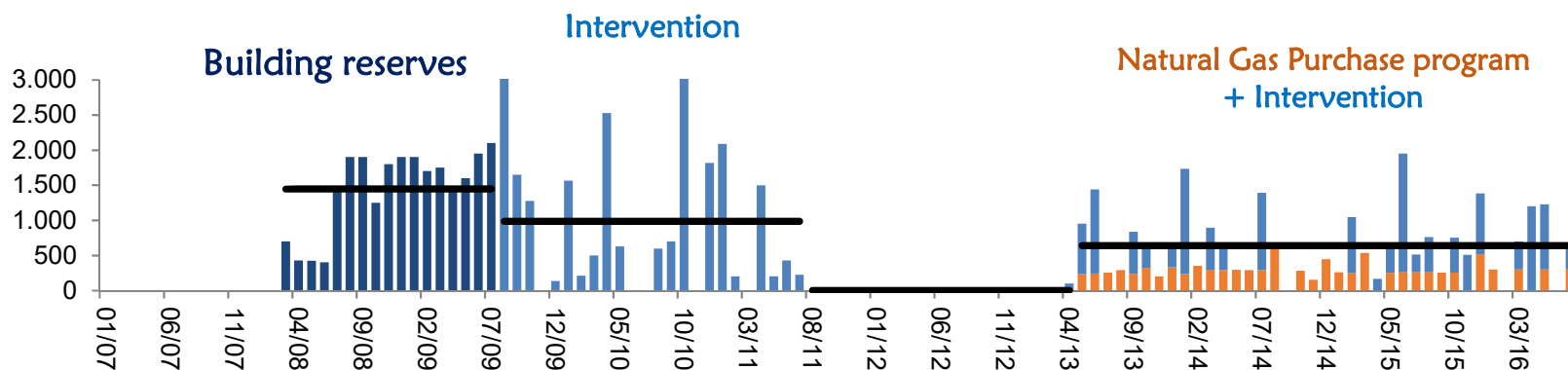


# Bank of Israel Policy Tools 2007-2016

Interest  
Rate  
(%)



FX  
Intervention  
(US\$)



Macroprudential  
Measures

