

Monetary Policy Challenges

From Falling Natural Interest Rates



Klaus Adam - ECB Forum on Central Banking 2020

Adverse Macroeconomic Trends

Central Banks in Advanced Economies:

- (1) Declining trend growth rates
- (2) Declining natural rates of interest

While exact levels of trend growth/natural rate uncertain,
wide agreement on the presence of downward trends.

Adverse Macroeconomic Trends



Downward pressure on nominal interest rates

⇒ Many central banks pushed for extended periods towards

Effective Lower Bound (ELB) for nominal rates.

European Central Bank: since July 2012

Federal Reserve: 2008-2015, since Q2:2020

Bank of Japan: since 1999 (w short interruptions)

Adverse Macroeconomic Trends



Effective Lower Bound (ELB) is a real constraint for MP:

- (1) CBs at ELB: persistently undershot their inflation targets despite ample deployment of QE measures

Euro Area HICP July 2012-Oct 2020: 0.8%

- (2) Quantitative easing measures:

Clearly measurable effect on financial markets

Effects on macro economy (inflation) highly uncertain

Adverse Macroeconomic Trends

- (1) Declining long-term growth rates
- (2) Declining natural rates of interest
- (3) Rising asset price volatility
 - large & persistent housing price cycles
 - repeat-cycles in equity prices
- (4) Rising *volatility* of the natural rate

Rising Asset Price Volatility



Asset Price volatility generally hard to measure precisely:

Asset price swings are large & very persistent

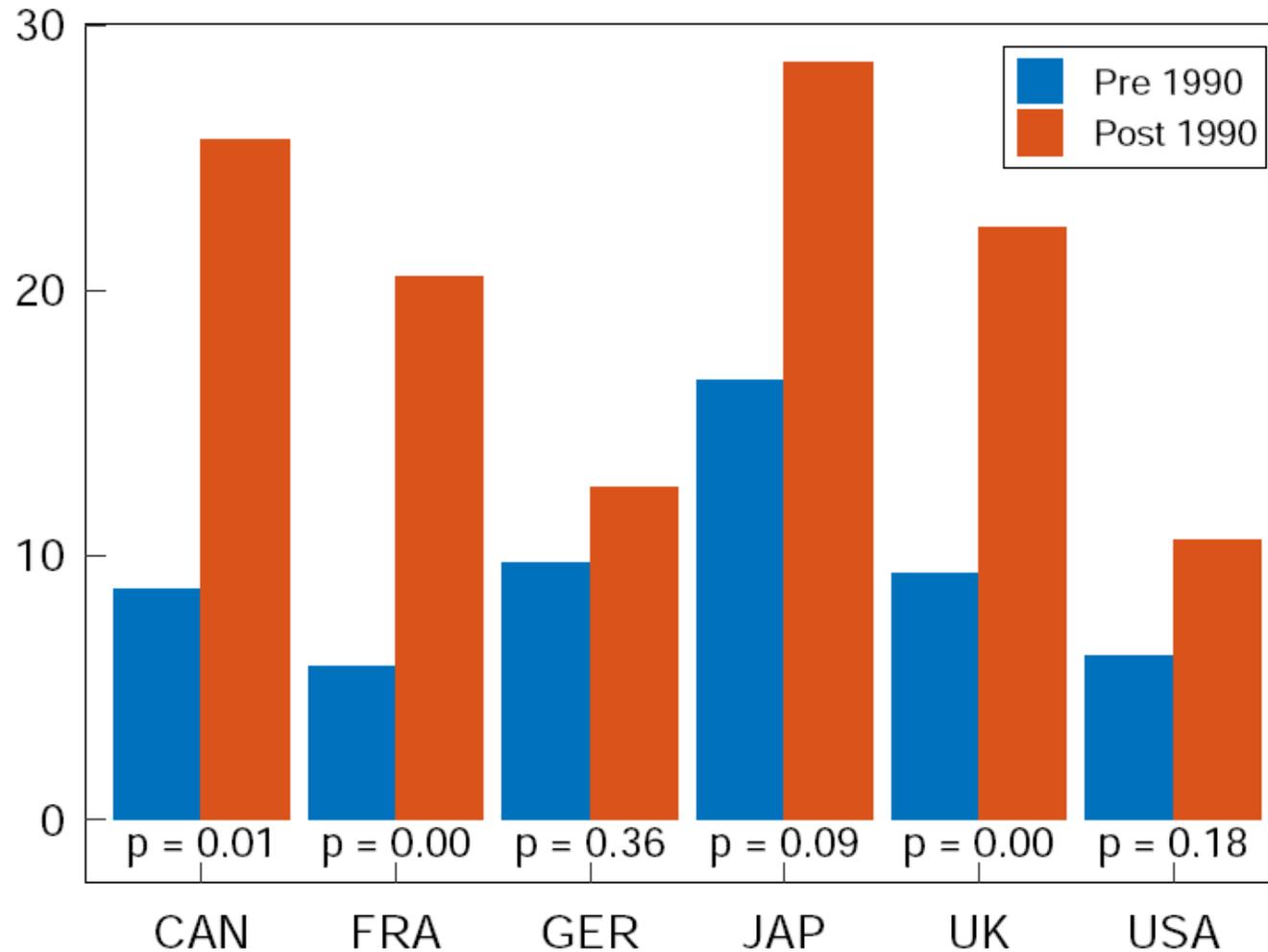
Changes in asset price volatility even harder to diagnose.

To deal with these issues, one must compare long time periods

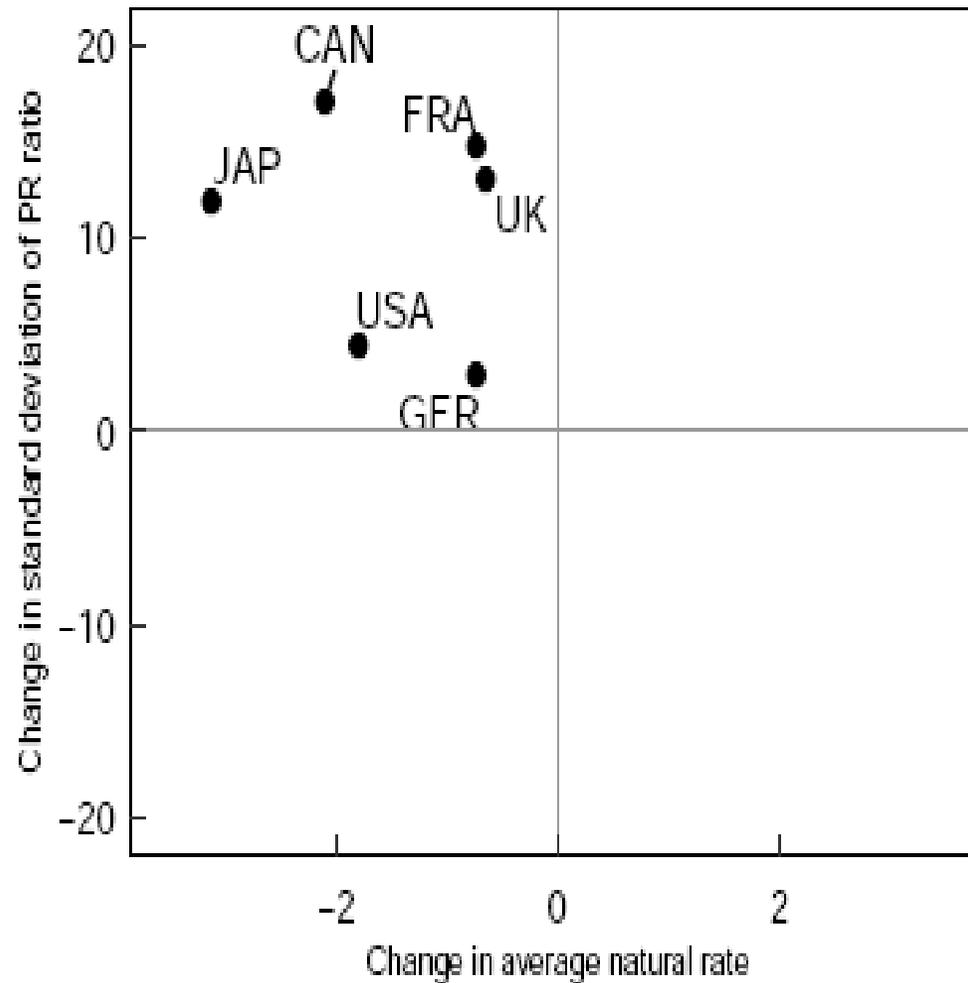
Past 30 years: 1990-2019

Prior 30 years: 1960-1989

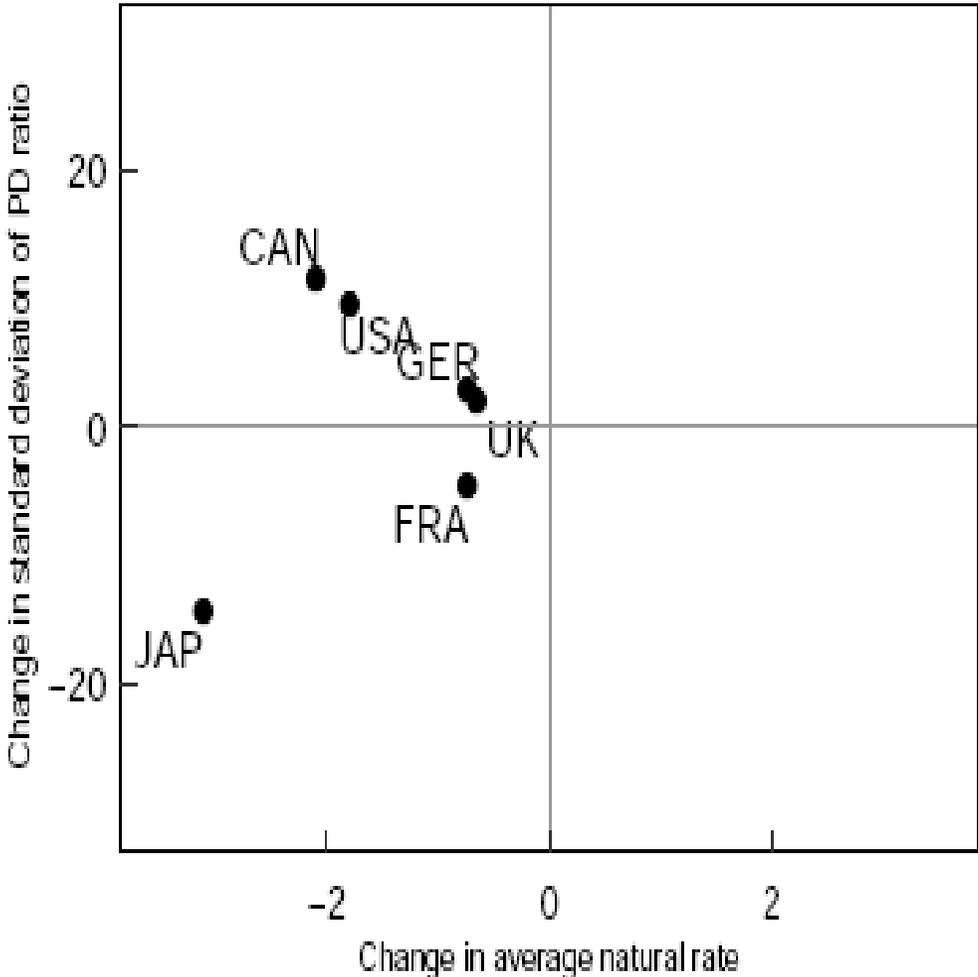
Standard Deviation of the Price-Rent-Ratio (Pre-/Post-1990)



Change in Housing Volatility & Natural Rates (Pre-/Post-1990)



Change in Equity Volatility & Natural Rates (Pre-/Post-1990)



Rising Asset Price Volatility



Could be efficient in world with lower natural/real rates

Mounting evidence that asset price volatility not efficient:

- Investor surveys: clear evidence of investor optimism/pessimism & significant deviations from rational expectations (Adam, Marcet and Beutel (2017))
- Patterns of optimism such that they amplify asset price volatility. (Adam, Marcet & Nicolini (2016))

The Puzzling Behavior of Capital Gain Expectations

Expected vs. Actual Capital Gains (CG) in Housing Markets

$$E_t[CG_{t,t+1}] = a + c \cdot \frac{P_t}{R_t} + u_t \quad (P_t/R_t: \text{price-rent-ratio})$$

$$CG_{t,t+1} = \mathbf{a} + \mathbf{c} \cdot \frac{P_t}{R_t} + \mathbf{u}_t$$

Actual investor forecast are **pro-cyclical**: $c > 0$

Actual capital gains are **counter-cyclical**: $c < 0$

Housing Capital Gain Expectations Michigan Household Survey (2007-20)



	Expected Capital Gains	Actual Capital Gains	p-value for equal coefficients
Coefficient on Price-Rent-Ratio	+0.0607	-0.0462	0.00

If investor forecasts were rational : $c = c$

The Puzzling Behavior of Investor Expectations



- **Phenomenon not confined to housing markets:** Same pattern in stock markets (Adam, Marcet & Beutel (2017)).
- **Additional dimensions of expectations biases** (Adam, Pfaeuti, Reinelt (2020)).
- **Overall:** Survey expectations of stock and housing market investors consistent with investors (weakly) extrapolating past capital gains.

Rising Asset Price Volatility



Investor optimism/pessimism more relevant with low real interest rates:

- Sensitivity of asset prices to optimism/pessimism is higher when real interest rates are low
- Increases likelihood of belief-driven boom-bust cycles

(Adam & Merkel (2019))

Monetary Policy Implications of Inefficient Asset Price Volatility

Lower natural rates/real interest rates:

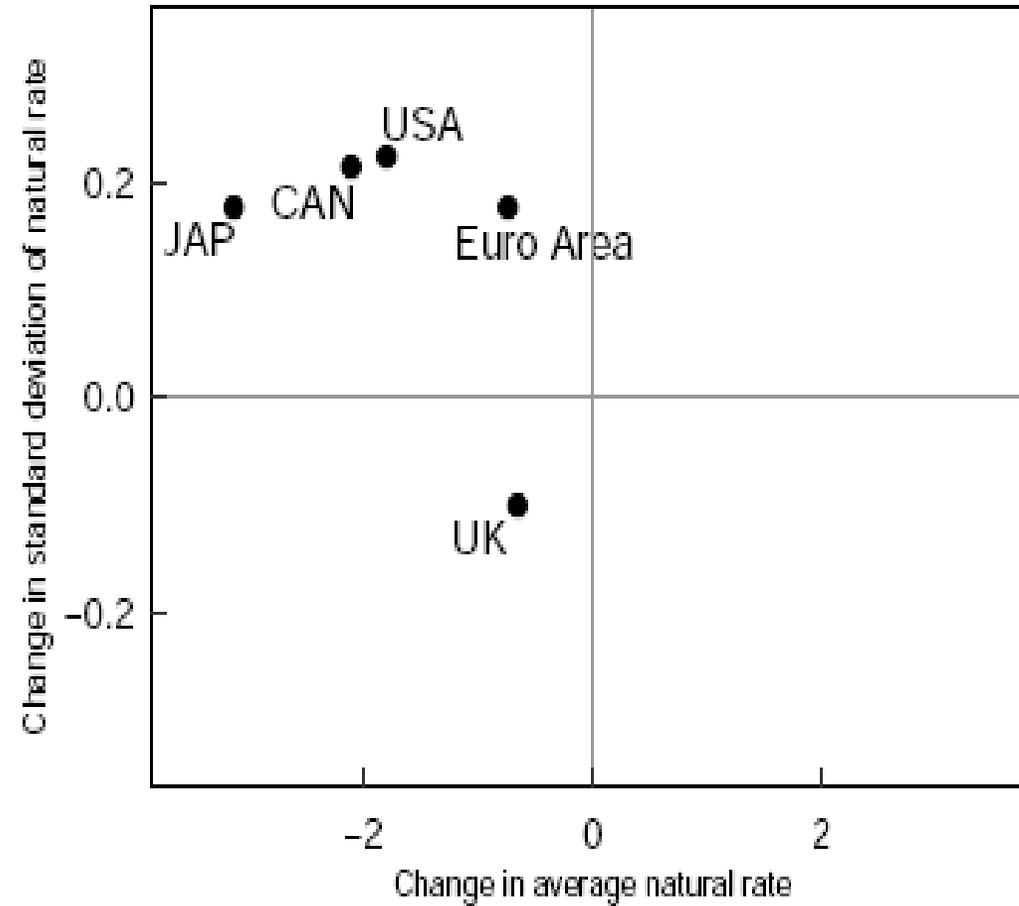
⇒ increase inefficient asset price volatility
resource & credit misallocation

⇒ increases volatility of the natural rate
(Adam, Pfaeuti, Reinelt (2020))

Lower *levels* of the natural rate & higher *volatility*

Effective Lower Bound more stringent!

Volatility of the Natural Rate (Pre-/Post-1990)



Natural rate estimates of Holsten, Laubach, Williams (2020)

Optimal Monetary Policy Response to More Stringent Effective Lower Bound?



Regain some room for conventional interest rate policy by increasing the inflation target/average inflation.

Increase in the inflation target optimally trades-off:

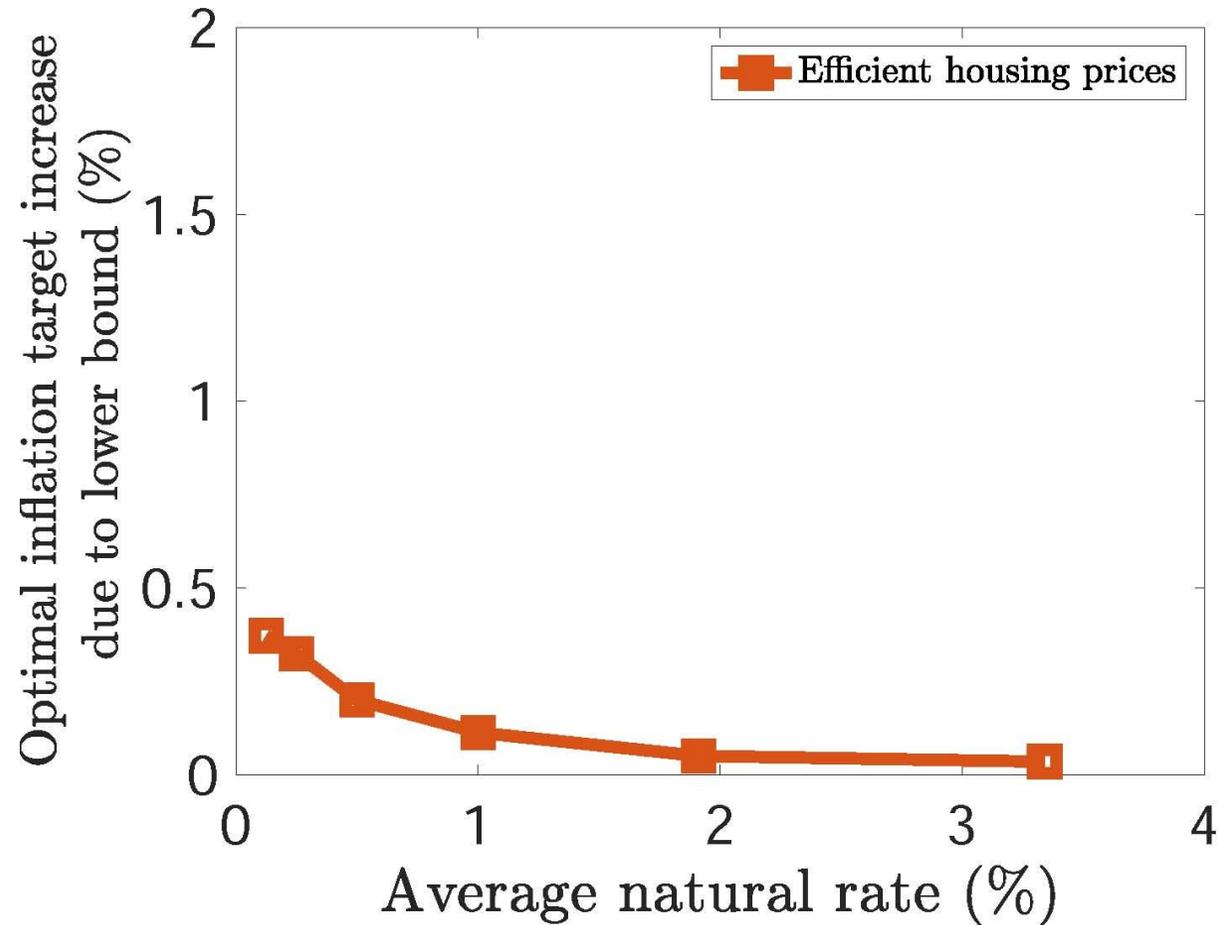
welfare costs of higher inflation (-)

versus

increased ability to stabilize economy (+)

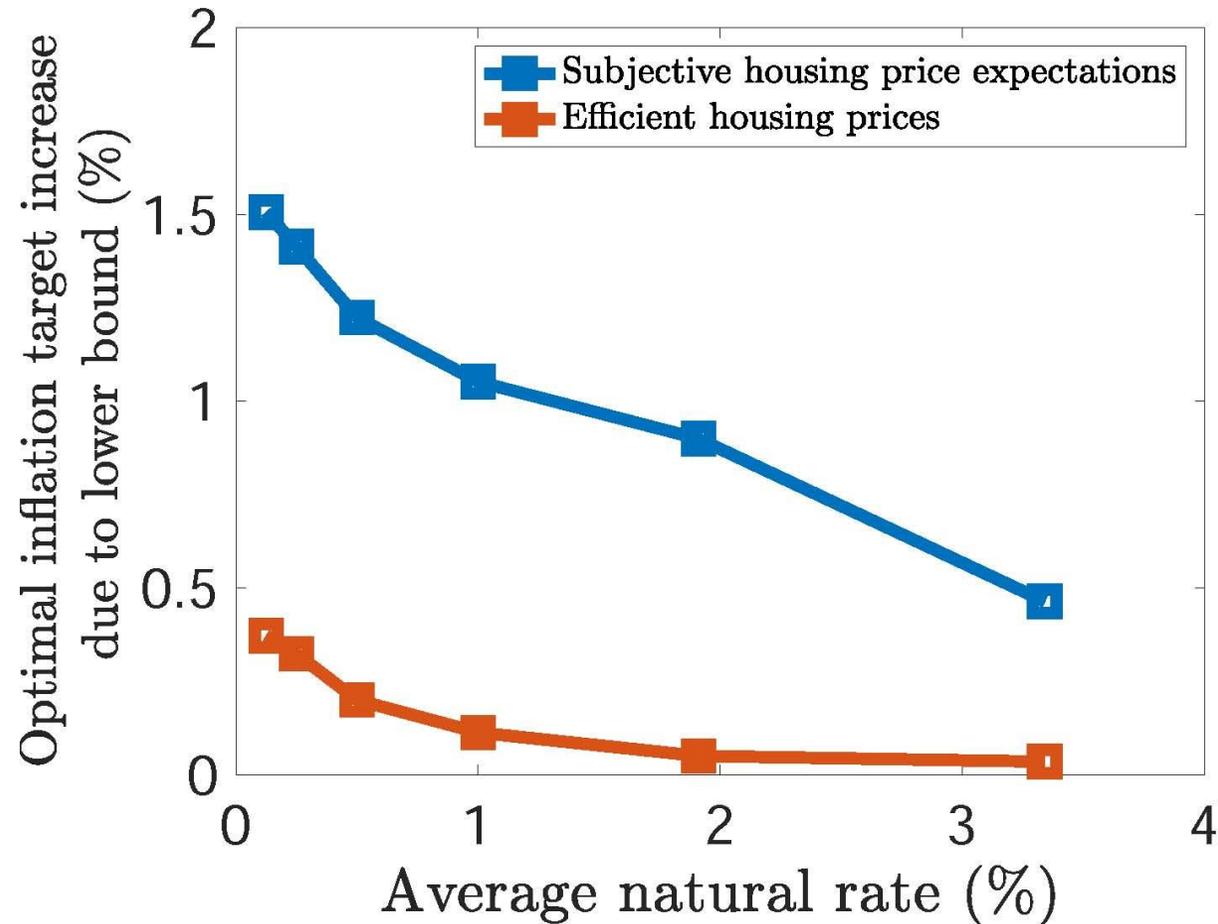
Quantitative effect depends on how one interprets increased asset price volatility: efficient vs. inefficient

Optimal Target Increase Due to ELB Constraint



Source: Adam, Pfaeuti, Reinelt (2020)

Optimal Target Increase Due to ELB Constraint



The Transition to a Higher Target



- Undershooting of current target: Sensible to raise target?
- **Optimistic view:** Rising target raises inflation expectations
- **Pessimistic view:** Rising target only raises the size of the target shortfall => reputational damage
- **Alternative approaches to deal with pessimistic concerns:**
 - Opportunistic target increase, once existing target reached
 - Pre-announcement that target is revisited once existing target is reached

Monetary Policy and Asset Prices



- Faced with *inefficient* asset price movements:

Optimal for monetary policy to “lean-against” asset prices

Adam and Woodford (2019)

Adam, Pfaeuti and Reinelt(2020)

Caines and Winkler (2020)

- No need for the CB to diagnose asset price misalignments

Summary



- Central banks confronted with
 - lower average levels of the natural rate
 - higher volatility of asset prices & natural rateshould rethink their inflation targets.
- Welfare costs of higher inflation versus increased ability to stabilize in the presence of an Effective Lower Bound constraint
- Quantitatively, trade-off depends (inter alia) on how one interprets increased asset price volatility.