5. Inflation targeting I.
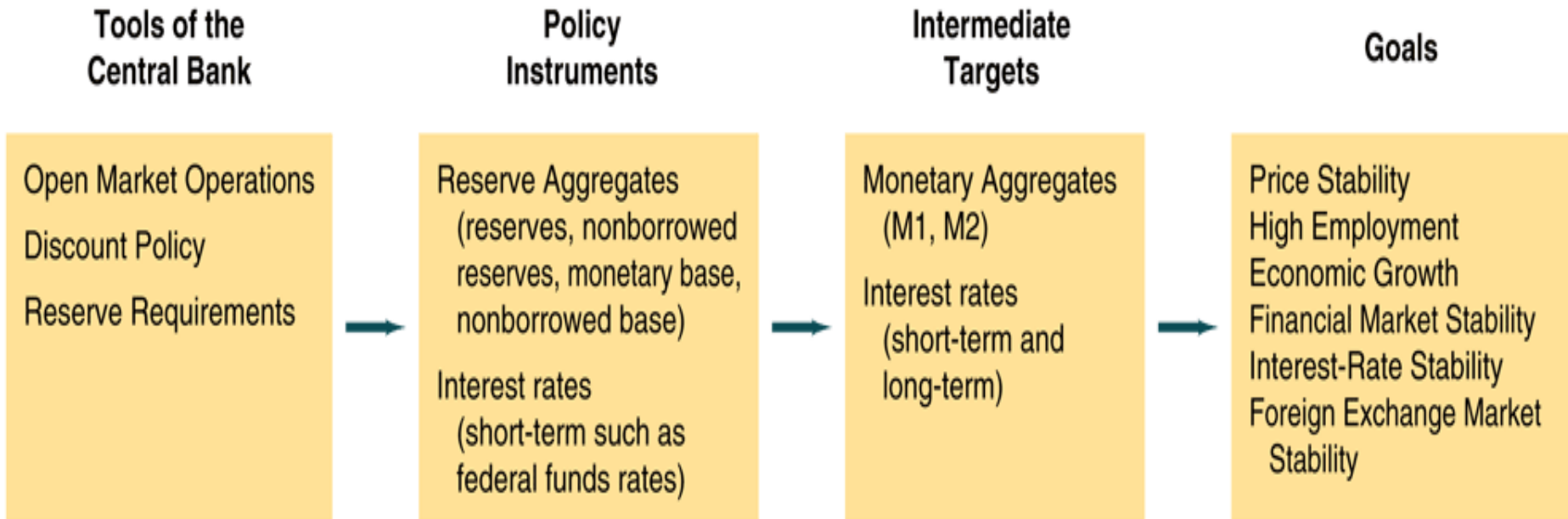
Mojmír Hampl, MSc., PhD.

Tools of the Central Bank	Policy Instruments	Intermediate Targets	Goals
Open Market Operations Discount Policy Reserve Requirements	Reserve Aggregates (reserves, nonborrowed reserves, monetary base, nonborrowed base) Interest rates (short-term such as federal funds rates)	Monetary Aggregates (M1, M2) Interest rates (short-term and long-term)	Price Stability High Employment Economic Growth Financial Market Stability Interest-Rate Stability Foreign Exchange Market Stability

Source: Author

Monetary Policy: Strategies and Tactics

- **Target monetary aggregates**

- **Target inflation**

- **"Just do it"…Whatever works**
  In recent years, the United States has achieved excellent macro-economic performance (including low and stable inflation) until the subprime crisis occurred, without using an explicit monetary anchor.　　　　*Mishkin (2015)*

Milton Friedman and the Monetarists
- Steady money growth → an automatic stabilizer

$$MV = PY$$

- Discretionary policy → *Monetary mischief*

- Lags → *Too much too late*

Monetary goals

- price stability and others

Monetary targeting

- inflation targeting and others

Policy tactics

- choice of policy instruments

Social and economic costs of inflation:

- Uncertainty
- Lowers economic growth
- Strains social fabric

Price stability: low and stable inflation

CPI (headline) = central bank stabilizes consumer prices, not prices of assets or real estate (we will debate this issue at a later stage)

Other goals of monetary policy

- High employment

- Economic growth

- Stability of financial markets

- Interest-rate stability

- Foreign exchange market stability

- <u>Nominal anchor</u>: a nominal variable such as inflation rate or the money supply, which ties down the price level to achieve price stability.

- Adherence to a <u>nominal anchor</u>

- <u>Time-inconsistency problem</u> (Kydland, Prescott 1977)

Should price stability be the primary goal?

- In the long run there is no conflict between other goals

- In the short run it can conflict with the goals of high employment and interest-rate stability

- European central bank: Hierarchical mandates

- The Fed: Dual mandates - two co-equal objectives: price stability and maximum employment

- Price stability as the primary, long-run goal

X

- Riksbank, BoE or CNB – Single inflation mandate

- The first central bank to adopt formally the inflation targeting régime was New Zealand in 1990

Monetary targeting

- Central bank announces that it will achieve a target value of annual growth rate of money supply (M1 or M2).

Inflation targeting

- Inflation rate as the target.

Monetary policy with an implicit nominal anchor

- No explicit target but have an implicit nominal anchor

Flexible, transparent, accountable

Advantages

- Almost immediate signals, help fix inflation expectations and produce less inflation
- Almost immediate accountability

Disadvantages

- Must exist a strong and reliable relationship between the goal variable and the targeted monetary aggregate

- <u>Public announcement of medium-term numerical target</u> for inflation (e.g. 3-5%). (for target debate see next lecture)

- Institutional commitment to price stability as the primary, <u>long-run goal of monetary polic</u>y and a commitment to achieve the inflation goal.

- Information-inclusive approach in which many variables are used in making decisions.

- Increased <u>transparency</u> of the strategy.

- Increased <u>accountability</u> of the central bank.

Comments on inflation targeting

- ## Advantages
  - Does not rely on <u>one variable</u> (such as money supply) to achieve target
  - Easily <u>understood</u>
  - Reduces potential of falling in time-inconsistency trap
  - Stresses <u>transparency and accountability</u>
- ## Disadvantages
  - Delayed signaling
  - Too much rigidity
  - Low economic growth during <u>deflation</u>

(a) New Zealand

(b) Canada

(c) United Kingdom

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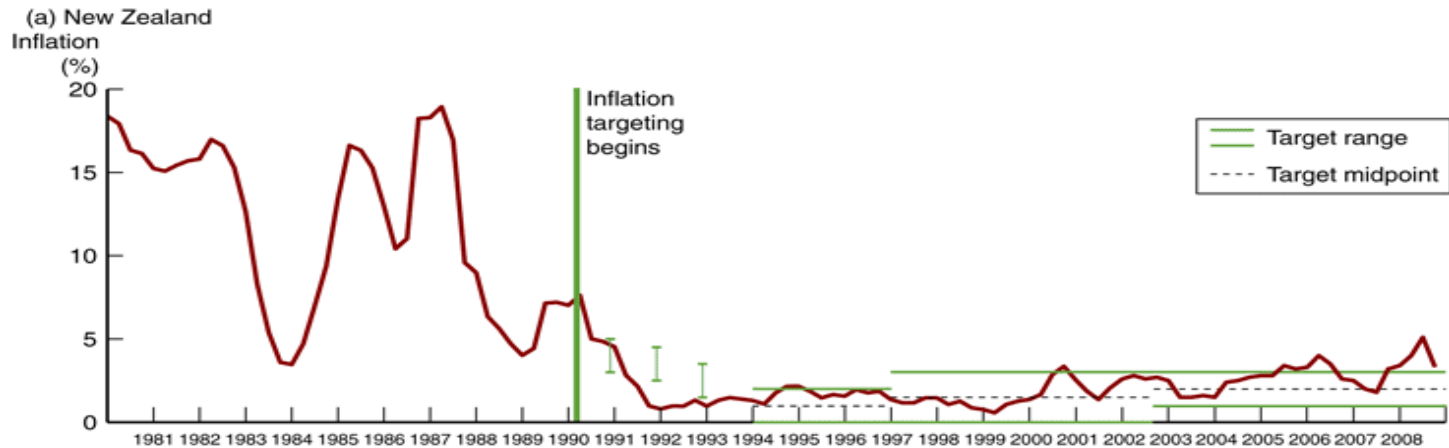
- The Fed uses implicit nominal anchor:
  - Primary goal is to control inflation in the long-run
  - Doesn't have a explicit monetary aggregate or an inflation target, it is a 'just do it' policy
  - Involves forward-looking behavior and preemptive
- Allen Greenspan
  - Low inflation and steady economic growth

- ## Advantages
  - Uses many sources of information
  - Avoids time-inconsistency problem
  - Demonstrated success
- ## Disadvantages
  - Lack of transparency and accountability
  - Strong dependence on the preferences, skills, and trustworthiness of individuals in charge
  - Inconsistent with democratic principles

$$i_t = i^* + \mathrm{a}(\pi_t - \pi^e) - b(u_t - u_n)$$

- If $\pi_t = \pi^*$, and $u_t = u_n$, then the central bank should set i_t equal to its target value, i^*.

- If inflation is higher than the target $(\pi_t > \pi^*)$, the central bank should increase the nominal interest rate i_t above i^*.

- If unemployment is higher than the natural rate of unemployment $(u > u_n)$, the central bank should decrease the nominal interest rate.

$$I = R* + PI + 0.5(PI - PI*) + 0.5(PI - PI*)$$

Respond to inflation gap *and* output gap

- Stabilizing <u>real output</u> is an important concern
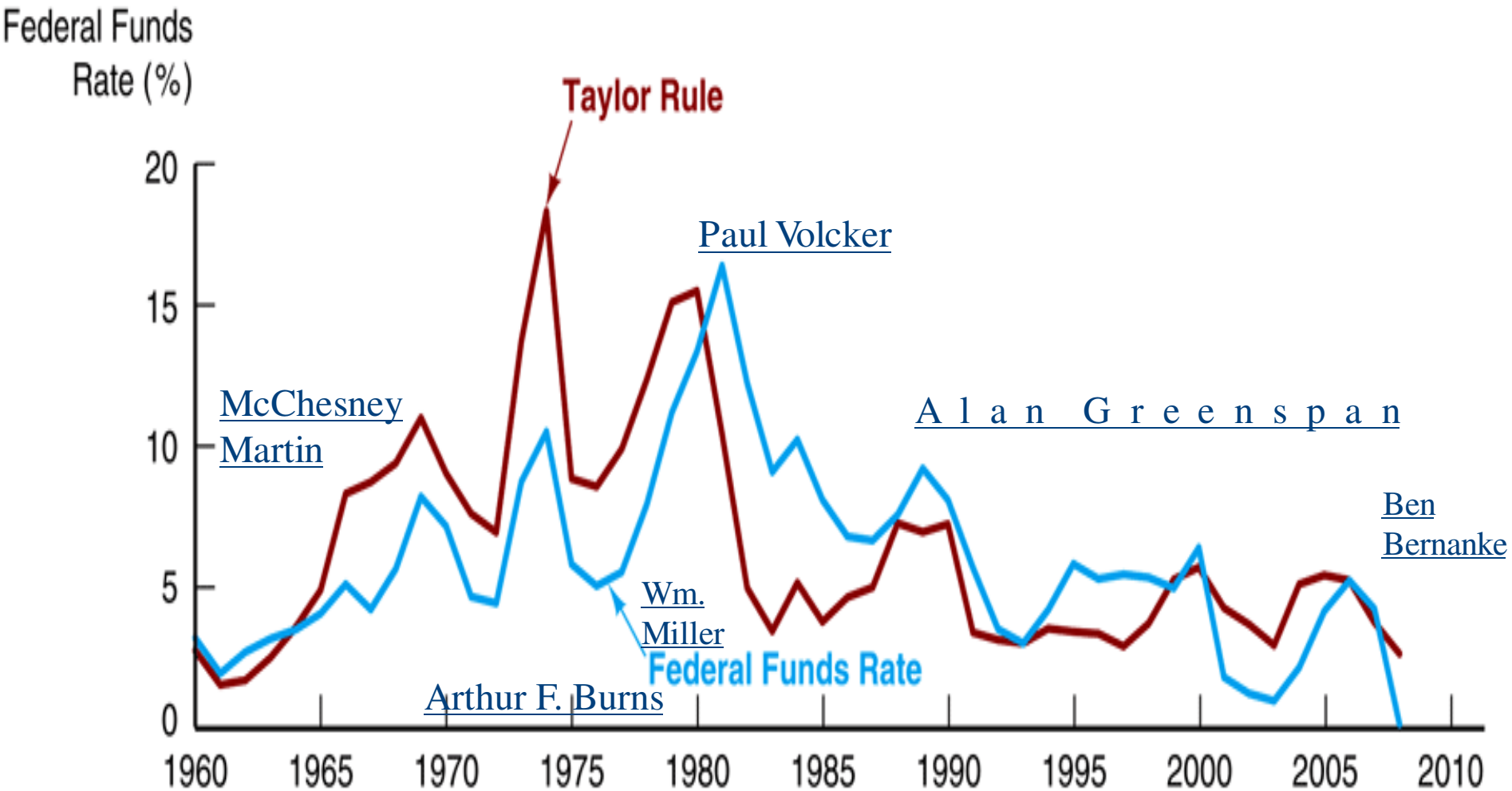- <u>Phillips Curve</u> →Output gap is an indicator of future inflation

Manage expectations

- When CB raises federal funds rate target, people understand it intends to bring down future inflation
- Expectation of reduced future inflation raises long-term real interest rate → slows economy and reduces inflation

NAIRU

- Rate of unemployment at which there is no tendency for inflation to change

Taylor Rule for Federal Funds Rate:1970–2008

Source: Federal Reserve

	Monetary Targeting	Inflation Targeting	Implicit Nominal Anchor
Advantages	Immediate signal on achievement of target	Simplicity and clarity of target	Does not rely on stable money–inflation relationship
		Does not rely on stable money-inflation relationship	Demonstrated success in United States
		Increased accountability of central bank	
		Reduced effects of inflationary shocks	
Disadvantages	Relies on stable money-inflation relationship	Delayed signal about achievement of target	Lack of transparency
		Could impose rigid rule (though has not in practice)	Success depends on individuals in charge
		Larger output fluctuations if sole focus on inflation (though not in practice)	Low accountability

Source: Mishkin, 2015

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IT achievements empirically confirmed

Real GDP, 2003=0, medians
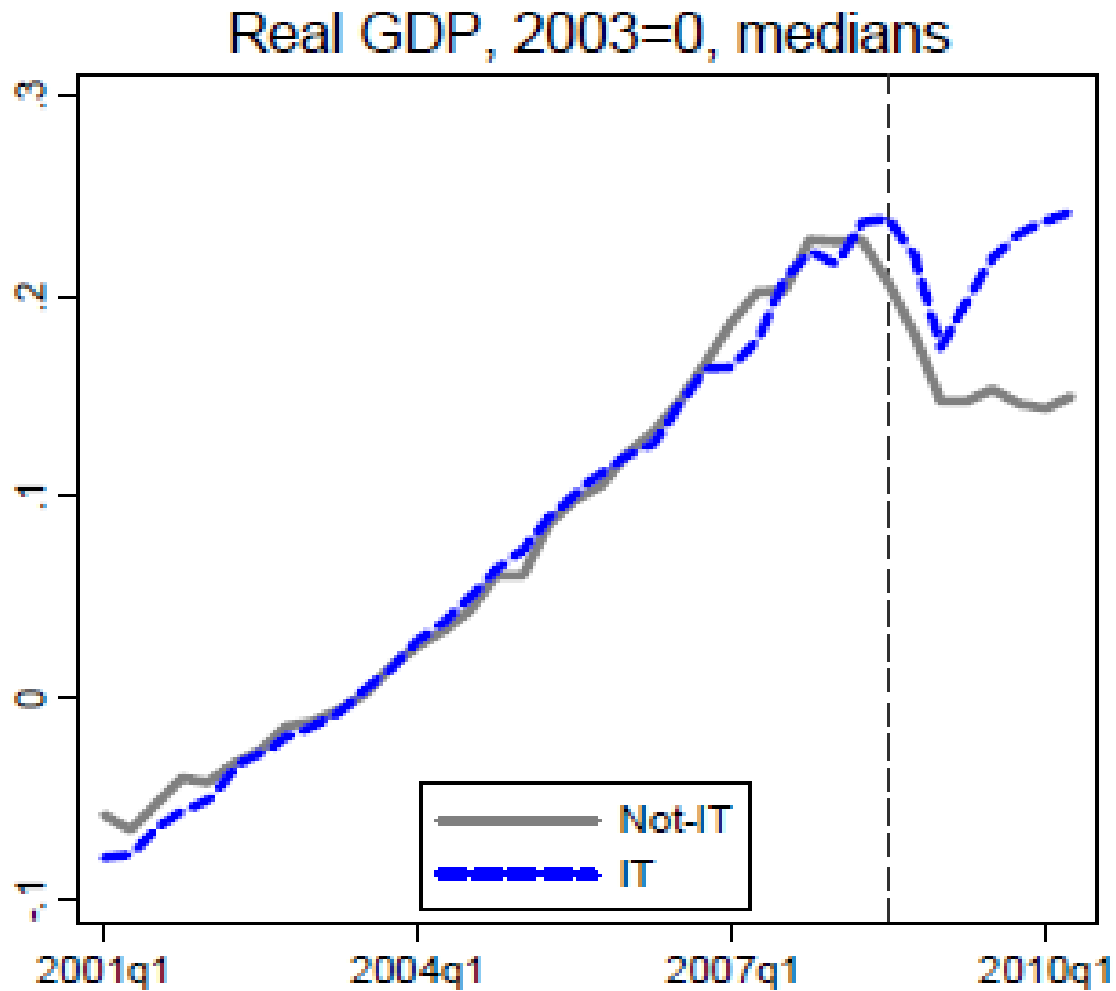
Source: Author

Thus, the lessons to draw from the empirical evidence are what might be described as **"non-negative."**

The contribution of inflation targeting to low and stable inflation among industrial countries is weak, but it also has not had negative effects on real activity. It does seem to have anchored inflation expectations. For the developing economies, inflation targeting has been associated with lower and more stable inflation and real activity.

(C. Walsh, 2009), http://people.ucsc.edu/~walshc/MyPapers/Kuszczak_Lecture_20090131.pdf

Table 1. Publication Selection Bias and Genuine Effect Tests

	[1]	[2]	[3]	[4]	[5]	[6]
	Price and Output Stability				State of the Real Economy	
	Whole group	Level of inflation	Volatility of inflation	Volatility of GDP growth	Whole group	Level of GDP growth
Genuine effect						
1/(standard error)	9.49e-04**	-0.079***	-1.35e-04	-0.008***	-1.30e-05	4.96e-05
	(4.64e-04)	(0.005)	(1.33e-04)	(0.002)	(2.73e-05)	(3.66e-05)
Publication bias						
Constant	3.562***	1.590	-0.878*	0.252	3.294***	0.967***
	(1.144)	(2.789)	(0.511)	(0.270)	(0.890)	(0.368)
Observations	3,344	1,887	920	346	2,066	1,537
Studies	75	58	38	23	53	34

Notes: The Table presents results of publication selection bias and genuine effect tests for the *Price and Output Stability*, and *State of the Real Economy* meta-groups. Columns [1] and [5] report the results for each group, using the absolute value of the t-statistic of the collected IT estimate as dependent variable. Columns [2], [3], [4], and [6] present the MRA results for more homogeneous groups (level of inflation, volatility of inflation, volatility of real GDP growth, and level of real GDP growth, respectively), using the t-statistic of the estimate of IT as dependent variable. All estimates are obtained using a multilevel mixed-effects model. Standard errors are reported in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Source: IMF

Final conclusions on IT

- Monetary policy must **be independent** of the government

- **Accountability, responsibility** and rules to balance the independent mandate

- Inflation targeting **serves as an anchor and guidance for the economy**

- IT is **forward looking**

- IT applied in most **of developed countries in the world**

- Applicable also in **emerging markets and can be used also for disinflation** (as the case of the Czech National Bank shows)

References:

1. **Kydland, F., Prescott, E., 1977.** „Rules Rather than Discretion: The Inconsistency of Optimal Plans", Journal of Political Economy, Vol. 85, No. 3, pp. 473-492.

2. **Mishkin, F. S., 2015**. "The Economics of Money, Banking and Financial Markets", 11th Edition, New York, Pearson.

3. **Walsh, C., 2009.** „Inflation targeting: What have we learned?", International Finance, Volume 12, Issue 2. pp. 195-233.

Thank you for your attention!

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