

# Business Cycle Basics, Part 5

## Velocity and the Transmission Mechanism

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International Monetary Monitor

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***“Monetary policy is not about interest rates. It is about the rate of growth of the quantity of money.” Milton Friedman, interviewed on NBC’s Meet the Press, October 24, 1976.***

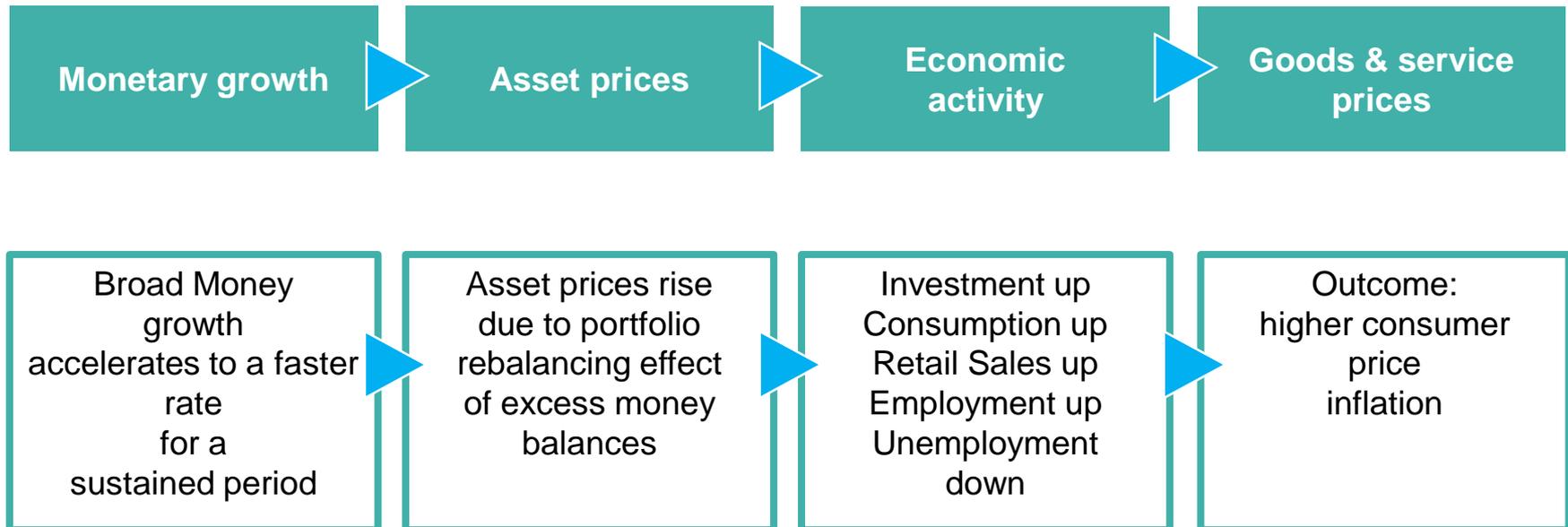
# Outline of the Series



- Part 1: Business Cycle Basics – The Monetary Framework
- Part 2: Business Cycle Basics – Money Drives Asset Prices
- Part 3: Business Cycle Basics – Money Drives (Nominal) Spending
- Part 4: Business Cycle Basics – Money Drives Inflation
- **Part 5: Business Cycle Basics – Velocity and the Transmission Mechanism**
- Part 6: Business Cycle Basics – Money versus Credit
- Financial Bubbles & Busts; Solving Financial Crises with QE
- Counterparts or Drivers of Money Growth -- Exchange Rate Regime, Shadow Banks, Counterparts of Money

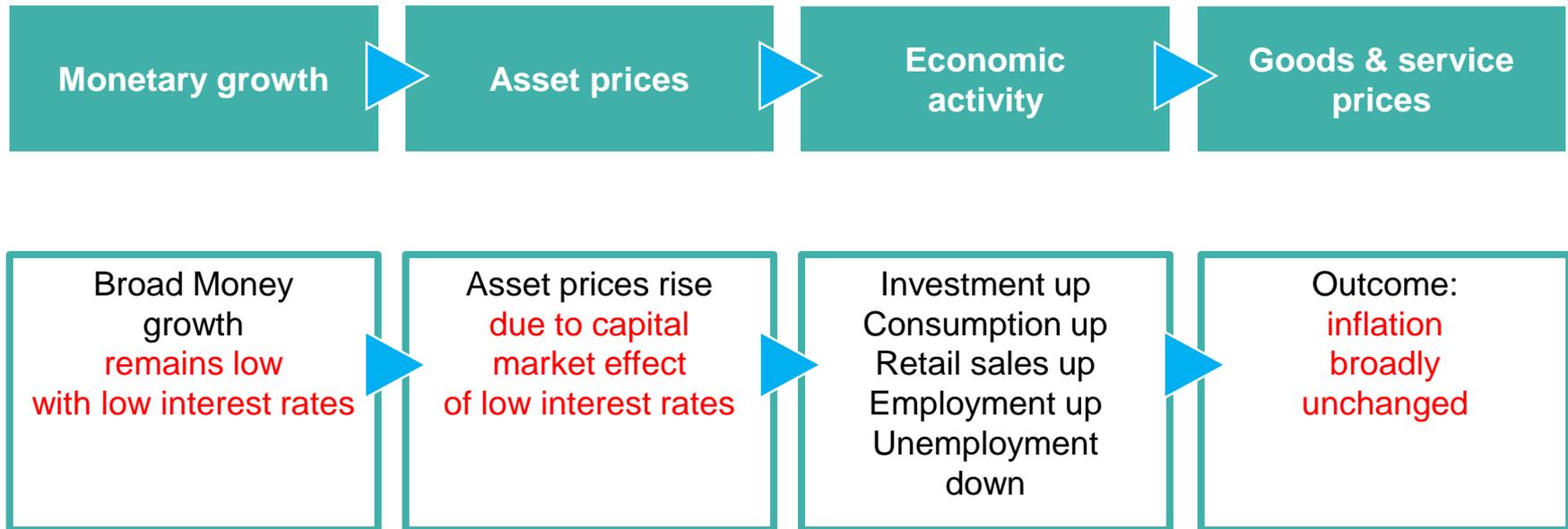
# Business Cycle Transmission Mechanism

(Typical Expansion [Type 1]: Faster money growth → low interest rates initially, followed by rising rates later)



# Business Cycle Transmission Mechanism

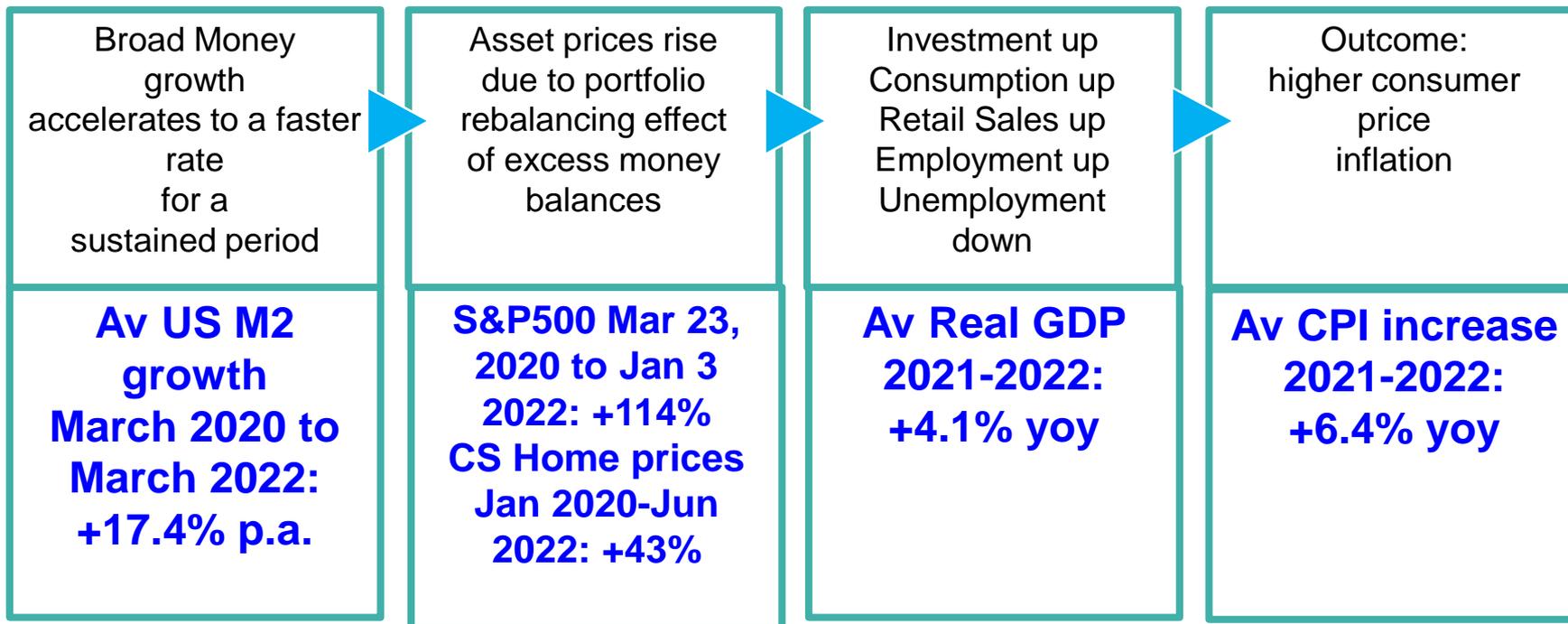
(Type 2 Expansion: Low Money Growth → with interest rates remaining low)



# Business Cycle Transmission Mechanism



## CASE STUDY OF THE US MONETARY EXPANSION, 2020-21

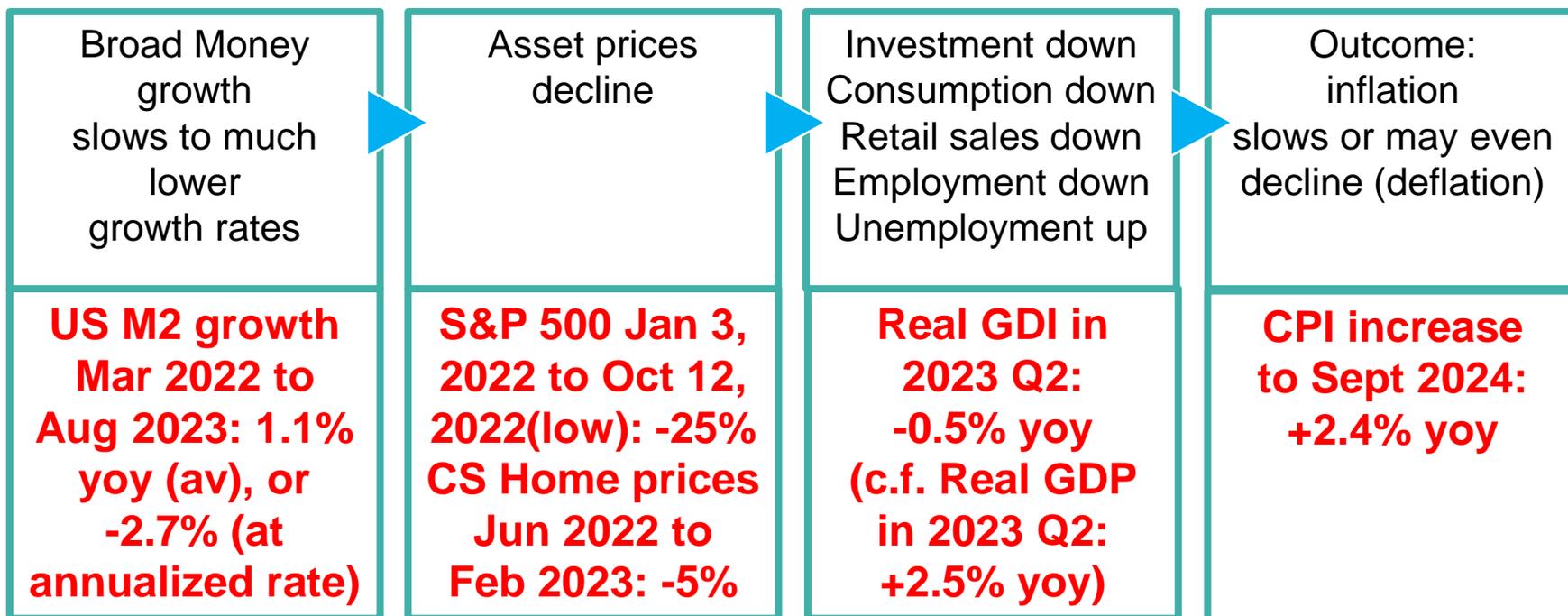


•For illustrative purposes only.

# Business Cycle Transmission Mechanism



## CASE STUDY OF THE US MONETARY DOWNTURN, 2022-23



•For illustrative purposes only.

# The 2020-21 Surge in Money Growth: “A Rat Passing through a Snake”



	Δ REAL					Δ M+Δ V		
	Δ M2	Δ VELOCITY	Δ REAL GDP	Δ CPI	Δ IPD	Δ M+Δ V	Δ y+Δ CPI	Δ y+Δ IPD
	Δ M	Δ V	Δ y	Δ P	Δ P			
2015	5.8	-1.9	2.7	0.1	1.0	3.8	2.8	3.7
2016	6.8	-3.8	1.7	1.3	1.0	2.9	2.9	2.7
2017	5.7	-1.4	2.2	2.1	1.9	4.3	4.4	4.1
2018	3.8	1.6	2.9	2.4	2.4	5.4	5.4	5.4
2019	5.1	-0.9	2.3	1.8	1.8	4.2	4.1	4.1
2020	19.1	-17.3	-2.8	1.2	1.3	1.8	-1.5	-1.5
2021	16.3	-4.8	5.9	4.7	4.5	11.5	10.6	10.4
2022	5.1	3.9	2.1	8.0	7.0	9.6	10.5	9.6
2023	-3.4%	10.4	2.9	4.1	3.6	7.0	7.0	6.5
2024	2.0	1.0	3	3	3	3.0	6.0	6.0
2025	5.7	-1.3	2	0	0	4.4	2.0	2.0

# Relation Between Money, Asset Prices & Spending: Quantity Theory of Money (or QTM)



- **Traditional form:**  $MV = PT$
- **Modern (Cambridge) form:**  $MV = Py$
- **In rate of change form:**  $\dot{M} + \dot{V} = \dot{P} + \dot{y}$
  
- **Applied to asset markets and spending in rate of change form:**  
$$\dot{M} + \dot{V} = (\dot{P}' + \dot{a}) + (\dot{P}'' + \dot{y})$$

## Money Growth : Exogenous or endogenous?

NB In the formulation above Money is exogenous, **not** endogenous.

This is because (1) central banks and banks together create money and their activity can be managed, and (2) velocity is a behavioural variable – that is, Individuals and firms choose the amount of (real) money balances they wish to hold, and this varies in a systematic way that can be modelled and predicted.

# Trend of Velocity is Downward-Sloping in most Developed Economies, close to -2% p.a.



## INCOME VELOCITY FOR US, JAPAN, EUROZONE & UK USING US M2, UK M4x, JP M2, & EZ M3.

