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

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- 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)

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Monetary growth	Asset prices	Economic activity	Goods & service prices
Broad Money growth accelerates to a faster rate for a sustained period	Asset prices rise due to portfolio rebalancing effect of excess money balances	Investment up Consumption up Retail Sales up Employment up Unemployment down	Outcome: higher consumer price inflation

•For illustrative purposes only.

Business Cycle Transmission Mechanism
(Type 2 Expansion: Low Money Growth –> with interest rates remaining low)

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Monetary growth	Asset prices	Economic activity	Goods & service prices
Broad Money growth remains low with low interest rates	Asset prices rise due to capital market effect of low interest rates	Investment up Consumption up Retail sales up Employment up Unemployment down	Outcome: inflation broadly unchanged

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Business Cycle Transmission Mechanism

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CASE STUDY OF THE US MONETARY EXPANSION, 2020-21

Monetary growth	Asset prices	Economic activity	Goods & service prices
Broad Money growth accelerates to a faster rate for a sustained period	Asset prices rise due to portfolio rebalancing effect of excess money balances	Investment up Consumption up Retail Sales up Employment up Unemployment down	Outcome: higher consumer price inflation
Av US M2 growth March 2020 to March 2022: +17.4% p.a.	**S&P500 Mar 23, 2020 to Jan 3 2022: +114%** **CS Home prices Jan 2020-Jun 2022: +43%**	**Av Real GDP 2021-2022: +4.1% yoy**	**Av CPI increase 2021-2022: +6.4% yoy**

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Business Cycle Transmission Mechanism

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CASE STUDY OF THE US MONETARY DOWNTURN, 2022-23

Monetary growth	Asset prices	Economic activity	Goods & service prices
Broad Money growth slows to much lower growth rates	Asset prices decline	Investment down Consumption down Retail sales down Employment down Unemployment up	Outcome: inflation slows or may even decline (deflation)
US M2 growth Mar 2022 to Aug 2023: 1.1% yoy (av), or -2.7% (at annualized rate)	**S&P 500 Jan 3, 2022 to Oct 12, 2022(low): -25% CS Home prices Jun 2022 to Feb 2023: -5%**	**Real GDI in 2023 Q2: -0.5% yoy (c.f. Real GDP in 2023 Q2: +2.5% yoy)**	**CPI increase to Sept 2024: +2.4% yoy**

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The 2020-21 Surge in Money Growth:
"A Rat Passing through a Snake"

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	ΔM2	Δ VELOCITY	ΔREAL GDP	ΔCPI	ΔIPD	ΔM+ΔV	Δy+ΔCPI	Δy+ΔIPD
	ΔM	ΔV	Δy	ΔP	ΔP			
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 <u>and</u> 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, **<u>not</u>** 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.

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