it may be flying high (an expansion with high real output $Y$) or flying low (a recession with low real output $Y$), as pictured below.

A. Classical economics: Classical Quantity Theory (CQT) asserts velocity $V$ is a constant, hence the LM curve is vertical, and disturbances on the money wing are the only cause of recessions (a monetary theory of business cycles)

B. Mr. Keynes’s revolt against classical economics: According to Mr. Keynes, disturbances on the real wing ⇒ agents’ Liquidity Preference will go up ⇒ $V$ will go down ⇒ real shocks can cause recessions too.

C. Textbook Keynesian explanation why $V \downarrow$ after a real shock: $r \downarrow$ ⇒ opportunity cost of holding money $\downarrow$ ⇒ Short-Term Cash Management (STCM) $\downarrow$ ⇒ $V \downarrow$ ⇒ the LM curve is upward sloping.

D. Criticism of standard textbook explanation: STCM by households and firms may not be very interest sensitive because (a) for households there is not much to gain from STCM. On the other hand, (b) for firms there is a lot to gain, so their short-term cash may already be managed to the hilt—regardless of small changes in $r$. This suggests the LM is almost vertical. So we will have to find some other, more interesting reasons why $V \downarrow$ during recessions, that is, some other ways to escape from classical straitjacket.

Readings:
- IS-LM review using your intermediate macro textbook
III. Mr. Keynes’s escape from CQT

A. Mr. Keynes’s story of recessions: Mr. Keynes’s story begins with a shock on the real wing: Investment opportunities decline ⇒ \( r_{LT} \downarrow \) because there is less demand for long-term borrowing (an excess supply of money available for long-term lending). But lenders do not let \( r_{LT} \) fall nearly enough to offset the fall in the investment function because lenders have inelastic interest rate expectations. The bottom line is that \( I \downarrow \), leading to \( C \downarrow \) because of the multiplier effects, both leading to \( Y \downarrow \) on the real wing.

On the money wing: Because investors as unwilling to lend long term below \( r_{min} \), they hold idle speculative balances in the short run, speculating on \( r_{LT} \) rising again in the future. So, on the money wing, idle speculative balances \( \uparrow \Rightarrow V \downarrow \Rightarrow Y \downarrow \) on the money wing also.

B. When are inelastic interest rate expectations rational?

The idea of uncertainty.

Readings:
- “Portfolio Choice and Mr. Keynes’s Speculative Demand for Money”
- “Uncertainty and Liquidity Preference”

IV. Fast Money in IS-LM

Motivation: Can there be real recessions with \( r_{ST} > 0 \)? Mr. Keynes’s story of real recessions requires \( r_{ST} = 0 \), otherwise any speculative balances will be lent short-term rather than being held as idle speculative balances. That is, unless \( r_{ST} = 0 \), \( V \) will not \( \downarrow \). Indeed Mr. Keynes’s story, \( r_{ST} = 0 \) during recessions is natural, otherwise there would be a big excess supply of money available for short-term lending. We feel that inelastic interest rate expectations (on the real wing) can lead to recessions even with \( r_{ST} > 0 \). So, we want to modify Mr. Keynes’s money-wing story why \( V \downarrow \) to make room for this possibility.

The first step is to decrease the excess supply of money available for short-term lending if \( r_{ST} > 0 \) from a “large pool” to a “small puddle.” The hope is that a small excess supply of money can somehow be mopped up, but a very large excess supply will inevitably lead to \( r_{ST} = 0 \). We use fast money to do the trick. Note: Even in his revolt against CQT, Mr. Keynes continued to hold to the classical view that \((M/P)_t = kY\) rather than \((M/P)_t = kC\). So, in Mr. Keynes’s story, Investment expenditures require holding money just like Consumption expenditures. This is the reason for the big excess supply of money when \( I \downarrow \) a lot.

Reading:
- “Fast Money in IS-LM”

V. Cash flow problems and precautionary balances

Cash flow problems are an important element of the “character” or “personality” of recessions. Cash flow problems can be contagious, so firms will want to hold some precautionary balances as a protection against this contagion. In an economy with fast money, these precautionary balances can account for, that is “mop up,” the small excess supply of money still available for short-term lending after a real shock. Thus, in an economy with fast money and precautionary balances, a Keynes-type recession with \( r_{ST} > 0 \) can occur after a real shock.

A. Cash flow problems and precautionary balances

B. Default risk and the risk premium

C. Application: Was credit “cheap” during the Great Depression? Why did severe deflation make the Great Depression even greater?

Reading:
- “Cash Flow Problems and Precautionary Balances”