KEYNES' THEORY OF MONEY

Exploring the macroeconomic implications arising from the roles that money plays in the economy through Keynesian analysis.



THE GREAT DEPRESSION

BROOKLYN DAILY EAGLE

And Complete Long Island News

★ NEW YORK CITY, TUESDAY, OCTOBER 29, 1929. ★

STOCKS SINK DESPITE BANKS; RALL

Warder Defense Demoralized by Tompkins Ruling

JOHN R. STRATON, FOE OF SMITH AND MODERNISM, DIES

SAMUEL ORANGE DISBARRED, FOUR ARE SUSPENDED

PLANES HUNT AIR LINER LOST WITH 5 ABOARD

Thousands at the Tickers Watch Silently and Hope

10 TO 15 PERISH AS VESSEL SINKS; OVER 60 RESCUED

Congress Should Vote Billions For Jobs

Unemployed Citizen

Successor To The Vanguard

Victorious Hunger Army Leaves Capitol

DIRECT HELP DEMANDED BY DEWEY GROUP

The Des Moines Register

The Newspaper Iowa Depends Upon

STOCKS SHRINK 10 BILLIONS

BINGHAM FACES CENSURE FROM HIS COLLEAGUES

OHIO'S BURTON, LONG ADVOCATE OF PEACE, DIES

IOWAN IS NAMED FARM BOARD AID

TRADE SOUND, SAY BANKERS

Today

Quite an Earthquake. Don't Sacrifice your Stocks. Russia Means It. A Million-Year Machine.

By Arthur Brisbane

THE MUNCIE MORNING STAR

First in News, Circulation and Advertising

VOL. 53—NO. 184. MUNCIE, INDIANA, TUESDAY, OCTOBER 29, 1929. PRICE THREE CENTS.

STOCK PRICES COLLAPSE AGAIN

Western Air Liner With Passengers Lost

CARRIED CREW OF THREE AND TWO PATRONS

Eastbound Plane Disappears in Mount Taylor Region Where T. A. T. Crashed.

Ohio Senator Dies

JURY TO PROBE FATAL SHOOTING OF "GAS" THIEF

Judge Guthrie and Prosecutor Davis Order Investigation This Week.

College Student Shot

TOWNSHIPS' USE OF SCHOOL AID BARES SCANDAL

Trustees of Some Units Scatter Money Wantonly in Hope of Reimbursement.

Silent in the Market

MARKET CLOSES WITH $10 TO $60 LOSSES LISTED

Bankers Express New Hopes With Weaklings Weeded Out—Rally Cut Short.

Wage Cuts Impoverish Workers, Organize To Resist

The VANGUARD

SEATTLE, WASHINGTON, NOVEMBER, 1931 PRICE 5 CENTS

WHEN WILL THE DEPRESSION END?

THE RAILBIRD

MOONEY CASE CAUSES ARIZONA LABOR BOYCOTT CALIF. PRODUCTS

Former Head of Seattle Labor College Analyses Business Panic and Says New Social Order Is Around the Corner

WAGE CUTS MEAN RUINING OF INDUSTRY, SAYS EMPLOYER

STOP CHILD LABOR and GIVE MILLION JOBS

BUSICK DRAGGED FROM HALL BY FASCIST ROWDIES

PRICES AGAIN COLLAPSE ON STOCK MARKET

WILKES-BARRE, PA., TUESDAY MORNING, OCTOBER 29, 1929—THIRTY-TWO PAGES.

BINGHAM HITS BACK AT SENATE ACCUSERS

Motion for His Censure May Be the Outcome of a

STORMY DEBATE ON FLOOR OF SENATE

New Englander Declares Lobby Committee Was "Framed" Against Him

She is Engaged

No Opposition Raised To Kahn

President and Senators Satisfied With His Appointment as Treasurer

Senator Burton Dies At Home In Washington

Brilliant Career of Ohio Statesman Comes to End

AFTER LONG ILLNESS

His Passing is Cause of Grief in Official Circles

Reed Predicts Death Of The Tariff Bill

Tells Senate That Measure in Its Present Form Will Be

KILLED BY THE HOUSE

Other Senators Call on Hoover to State His Position

VALUES SUFFER SHARPEST DROP EVER EXPERIENCED IN ONE DAY

GIRL WHO WON SUIT AGAINST THAW DELUGED BY PROPOSALS

Crash Came When Powerful Financial Interests Step Aside

LOWEST LEVEL IN THE YEAR REACHED

Pathetic Scenes Witnessed in Some of the Broker Offices

Bankers Will Enter Market

They Will Be Buyers Today of the Best Grade Stocks

Bond Market Is Irregular

Only Issues of Prime Investment Value Make Progress

Values Break On Curb Market

Nearly 175 Issues Finish at New Lows for the Year

The Gadsden Times

FINAL EDITION

GADSDEN, ALA., THURSDAY, JULY 12, 1934.

DWIGHT COTTON MILL EMPLOYES STRIKE

Paving Of Trunk Roads Recommended

DEKALB COUNTY WORK INCLUDED IN SUGGESTIONS

COUNTRY CLUB GOLF T[OURNEY] IS U[NDER] WAY

"Supreme Court" Of Labor Disputes Goes Into Session

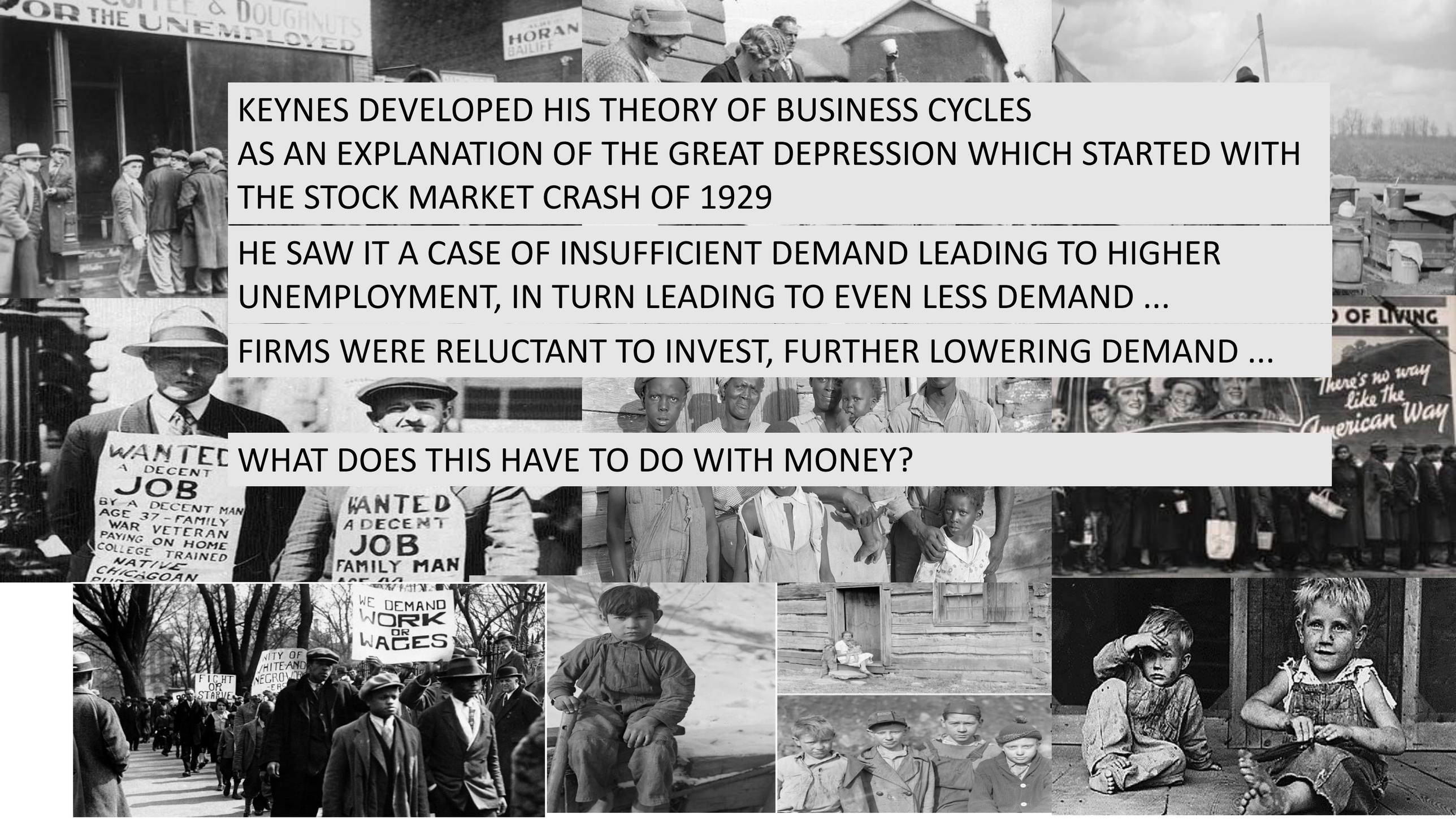
UNION DEMANDS WAGE INCREASE, 30-HOUR WEEK

HITLER FACES CRISIS IN TALK TO REICHSTAG

Flashes Of Life From AP Wires

FREIGHT RATE CASE REPORT GIVEN I. C. C.

PRESIDENT HAS 'A GRAND TIME' IN CANAL ZONE



KEYNES DEVELOPED HIS THEORY OF BUSINESS CYCLES
AS AN EXPLANATION OF THE GREAT DEPRESSION WHICH STARTED WITH THE STOCK MARKET CRASH OF 1929

HE SAW IT A CASE OF INSUFFICIENT DEMAND LEADING TO HIGHER UNEMPLOYMENT, IN TURN LEADING TO EVEN LESS DEMAND ...

FIRMS WERE RELUCTANT TO INVEST, FURTHER LOWERING DEMAND ...

WHAT DOES THIS HAVE TO DO WITH MONEY?

CHAPTER OVERVIEW

JOURNEY THROUGH KEYNESIAN MONETARY THEORY

01

INTRODUCTION

Understanding Keynes' revolutionary perspective on money's role beyond simple transactions.

02

EXCEPTIONAL MONEY MARKET

Examining why the money market behaves differently from other markets.

03

NORMAL EQUILIBRIUM

Exploring standard mechanisms for achieving macroeconomic balance.

04

THE LIQUIDITY TRAP

Investigating scenarios where conventional monetary policy fails.

05

MONEY'S ROLE

Understanding money's influence during normal economic times.

CLASSICAL VS KEYNESIAN: THREE MOTIVES FOR HOLDING MONEY

CLASSICAL VIEW

The classical school emphasised only the **transactions role** of money—holding money purely to facilitate purchases.

KEYNES' EXPANDED FRAMEWORK

John Maynard Keynes acknowledged transactions but recognised two additional motives:

- **Precautionary**: holding money for unexpected expenditures requiring quick payment
- **Speculative**: choosing money over interest-bearing but illiquid assets based on expected returns



WHEN MONEY BECOMES KING

VERY LOW INTEREST RATES

When interest rates fall close to or below 1%, agents may prefer earning no interest rather than locking wealth into illiquid forms paying little reward.

CRISIS AND UNCERTAINTY

During crises, money appears safer than individual interest-bearing assets. Money is a general store of value whilst individual assets are specific liabilities of firms and banks who might go bust.

In such scenarios, a surge in demand for money creates excess demand in the money market. In a monetary economy, Walras' Law is no longer equivalent to Say's Law, so excess demand for money can co-exist with excess supply of goods.

⚠ CRITICAL INSIGHT

WHY THE MONEY MARKET IS DIFFERENT

With other assets or goods, excess demand closes through price increases, supply increases, or substitution towards close substitutes. But the money market has three special features:

UNRESPONSIVE PRICE

The nominal value or "price" of money is unresponsive to disequilibrium.

FIXED SUPPLY

Supply is unresponsive as the stock of money is exogenously determined.

NO SUBSTITUTES

No close substitutes exist as media of exchange (less true today than in Keynes' era).

Thus, there is a lack of the usual market-clearing features in the market for a pure medium of exchange.



NON-MONETARY ECONOMY: SAY'S LAW LAW HOLDS

1

INCREASED SAVING

Individuals buy durable goods or lend to firms for capital goods.

2

DEMAND SHIFTS

Demand for durables and capital goods ↑, non-durable consumption ↓.

3

PRODUCTION ADJUSTS

Production shifts from non-durables to durables and capital goods.

4

EMPLOYMENT STABLE

Labour demand shifts between sectors but aggregate employment remains constant.

MONETARY ECONOMY: SAY'S LAW BREAKS DOWN

THE PROBLEM

If individuals want to save, they may choose to **hoard money**. Demand for goods as a whole ↓ and for money ↑.

Excess supply of goods and excess demand for money arises. Say's Law need not hold.

THE CONSEQUENCE

As demand for goods falls, so does demand for labour. But increased demand for money does not offset this, since excess demand for money does not call forth greater production.

Overall, demand for labour ↓.

Unemployment is a product of (i) the violation of Say's Law in a monetary economy and (ii) the special nature of disequilibrium in the market for money—the usual equilibrating mechanisms do not work.

CAN OTHER MARKETS HELP?

Changes in prices of other goods and assets might eliminate disequilibrium in the money market:

1

INTEREST RATE ADJUSTMENT

If interest rates on alternative assets ↑, demand for other stores of value ↑, demand for money ↓.

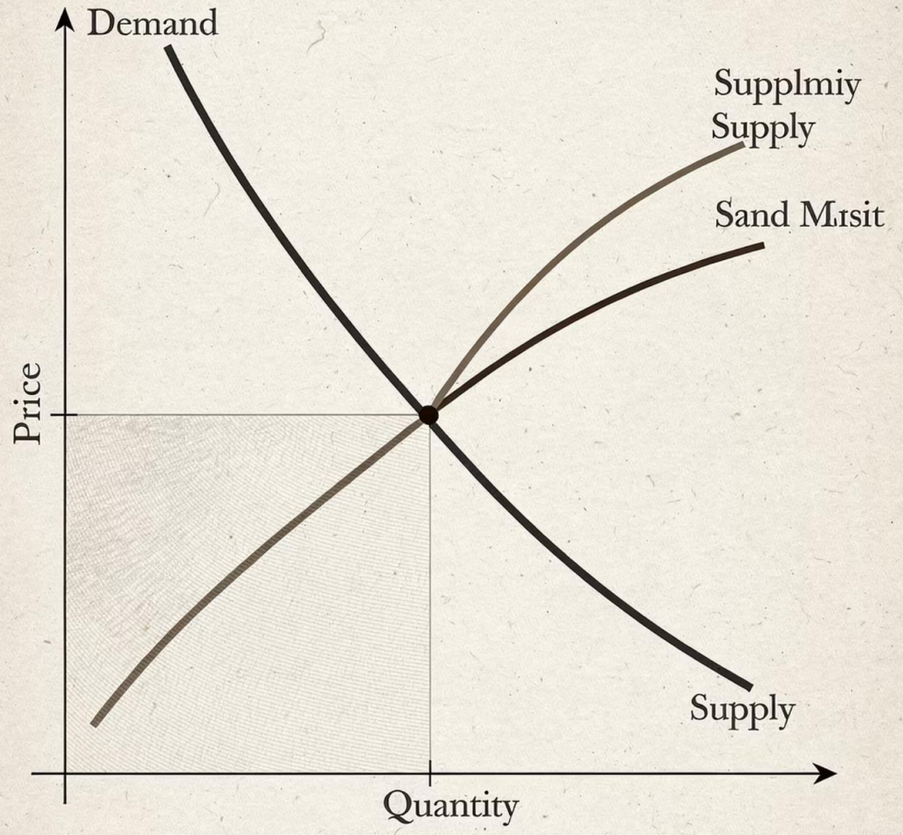
2

PRICE LEVEL ADJUSTMENT

If prices of individual goods ↓, demand for goods ↑, and overall demand for money ↓.

So in general, disequilibrium in the money market *might* be eliminated by adjustments in other markets. It is not necessary for adjustments to take place in the money market itself.

But 'might' does not mean 'will'—because of price stickiness there might be significant periods before such equilibrating adjustments work through the economy.



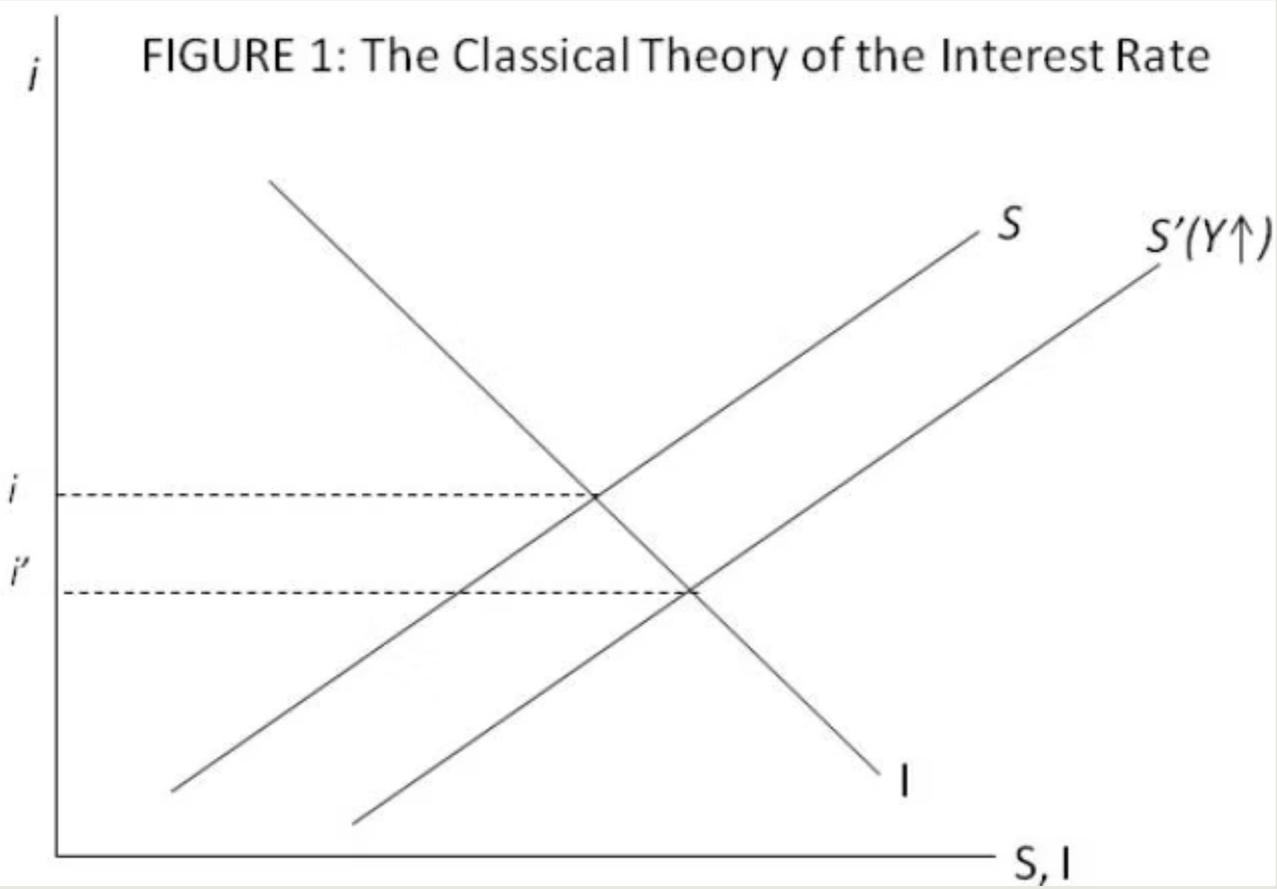
CLASSICAL THEORY

CLASSICAL VIEW: INTEREST AS REWARD FOR SAVING

Classical economists viewed the interest rate (*i*) as the return on savings by households—interest is the reward for holding purchasing power without consuming it.

The interest rate is determined by interaction of supply and demand for loanable funds. "Funds" do not necessarily involve flows of money.

CLASSICAL INTEREST RATE DETERMINATION



EQUILIBRIUM MECHANISM

Via their savings, households leave resources available for firms to use for investment.

In equilibrium, the amount of resources households are willing to save equals the amount firms are willing to invest.

An increase in savings shifts the *S* schedule rightwards and causes a **decrease** in the interest rate.

KEYNESIAN THEORY

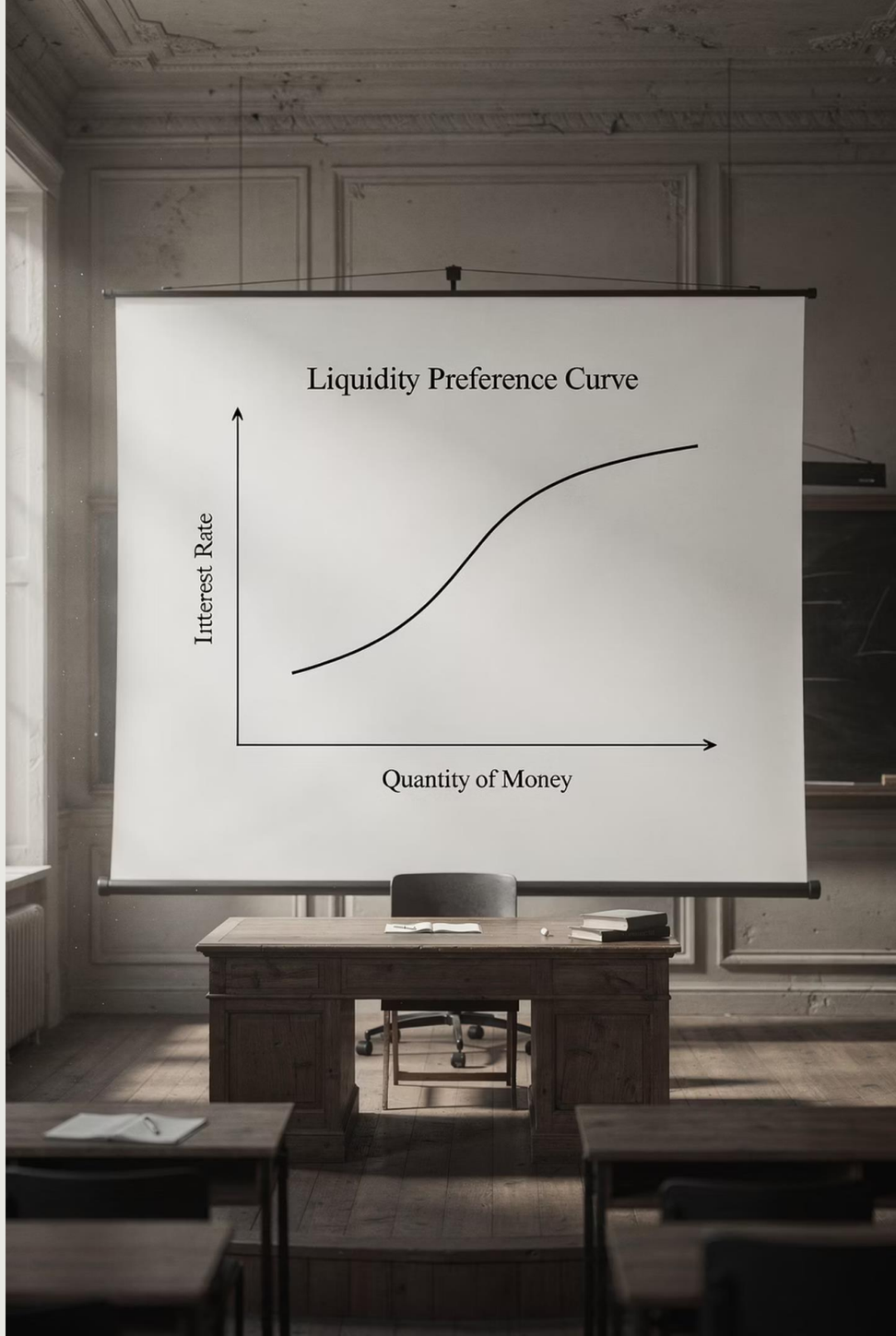
KEYNES' LIQUIDITY PREFERENCE PREFERENCE THEORY

Keynes' theory assumes household savings are determined by the marginal propensity to consume out of disposable income and are not that sensitive to the interest rate.

Instead, *i* is the reward for holding a given level of savings in **illiquid** (as opposed to liquid) form.

KEY INSIGHT

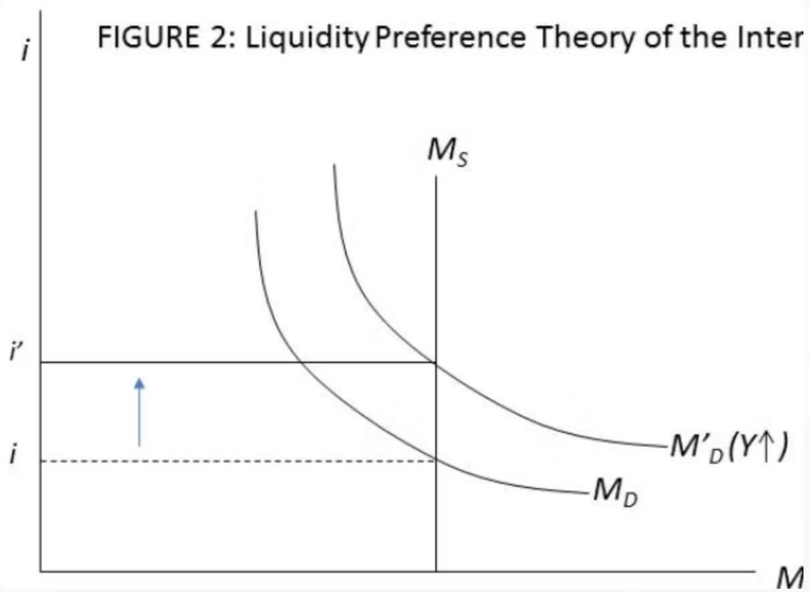
All else equal, a decrease in *i* leads to an increase in the demand for money. This traces out the liquidity preference schedule.



LIQUIDITY PREFERENCE IN ACTION

Under Keynes' general theory, an increase in income causes the demand for money to shift rightwards (as transactions increase). This causes the interest rate to **increase**.

- The classical and Keynesian views can be reconciled by appropriate study of interactions between various markets: goods, money and bonds. The IS-LM system does this.



⚠ CRITICAL CONCEPT

THE LIQUIDITY TRAP EMERGES

An important source of speculative demand is **expectations** about the future behaviour of interest rates.

AT VERY LOW INTEREST RATES

At very low values of *i*, such as *iL*, agents find holding interest-bearing assets not worthwhile because:

- The return is not high enough to offset the inconvenience of frequent trips to the bank
- They expect the interest rate cannot go any lower and do not wish to lock their value into an asset at such a low rate



INFINITE ELASTICITY IN THE THE LIQUIDITY TRAP

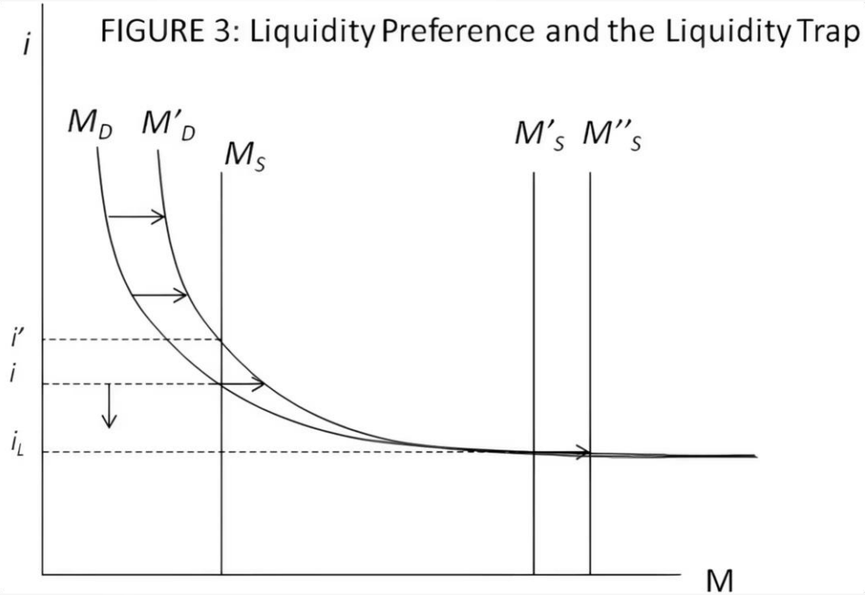
The liquidity preference schedule becomes **horizontal** because agents are willing to hold (almost) all their wealth in the form of money.

In other words, the demand for money is infinitely interest-elastic in the liquidity trap.

VISUALISING THE LIQUIDITY LIQUIDITY TRAP

A small ↑ or ↓ in money demand shifts the liquidity preference schedule upwards and causes the interest rate to increase, but **this does not happen along its horizontal portion**.

Similarly, an increase in money supply causes the interest rate to go down when the liquidity preference schedule is downward sloping but **not along its horizontal segment**.





THE TRAP SPRINGS SHUT

NORMAL TIMES

An increase in demand for money can lead to an increase in *i* and substitution towards interest-bearing assets.

LIQUIDITY TRAP

Changes in *i* cannot occur. This rules out one channel for the economy to adjust back to equilibrium.

NORMAL ADJUSTMENT: PRICE LEVEL FALLS

The LM curve is normally upward sloping. The intersection of IS-LM indicates the level of aggregate demand currently existing in the economy.

Outside a liquidity trap, if IS and LM intersect below the **full employment** value of output ($\bar{Y}$), then aggregate demand in the goods market is below potential supply. This causes the price level *P* to fall.

1

Decreases in price level shift LM curve rightwards and downwards

2

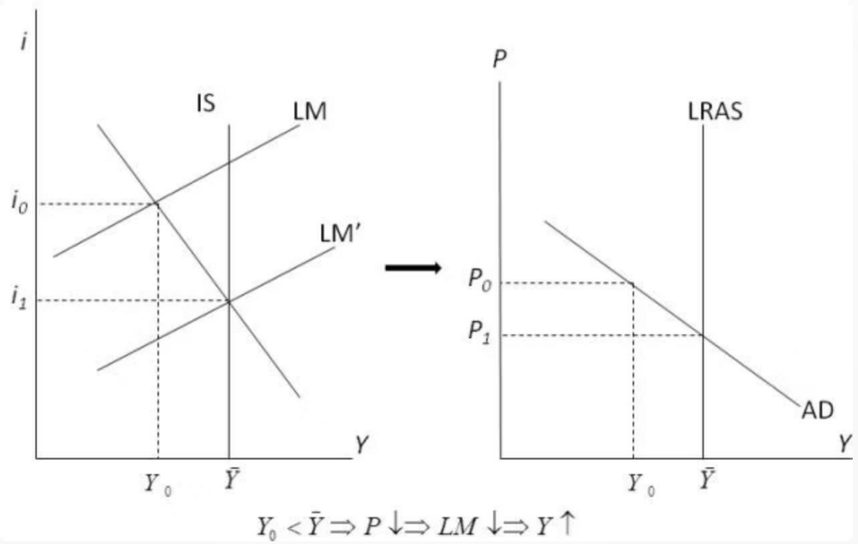
Equilibrium is restored at $\bar{Y}$

Thus outside a liquidity trap, a falling price level will restore equilibrium in the goods market.

IS-LM AND PRICE ADJUSTMENT

The same process is captured by the LRAS-AD diagram: as *P* falls, AD increases along a given AD curve.

$$Y_0 < \bar{Y} \Rightarrow P \downarrow \Rightarrow LM \downarrow \Rightarrow Y \uparrow$$



TRAPPED ECONOMY

THE LIQUIDITY TRAP: ADJUSTMENT FAILS

A liquidity trap is associated with very low levels of *i* and *Y*.

1

PRICE FALLS

A fall in the price index stretches the LM curve rightwards but **does not shift it downwards**.

2

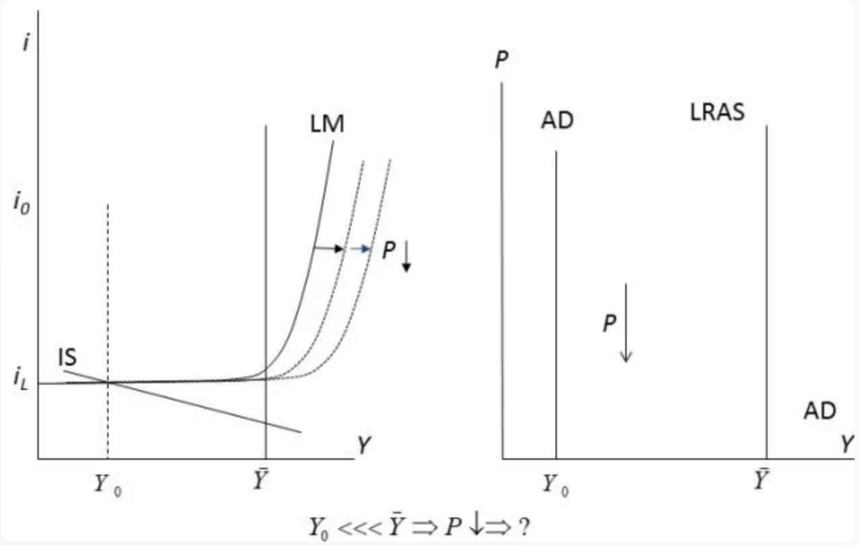
LM CANNOT SHIFT DOWN

Even though downward pressure is put on price level *P*, the LM cannot shift downwards.

3

EQUILIBRIUM UNREACHABLE

Thus it cannot intersect IS at $\bar{Y}$!



VERTICAL AGGREGATE DEMAND

Price changes have no effect on aggregate demand for goods. Therefore, the **AD curve is vertical** in a liquidity trap.

$$Y_0 \quad \bar{Y} \Rightarrow \; P \quad \bar{P}$$



MONETARY POLICY BECOMES POWERLESS

THE IMPLICATION

Monetary policy cannot affect the level of aggregate demand. Any increase in money supply shifts the LM curve rightwards but not downwards, so does not move the economy to where IS cuts $\bar{Y}$.

HISTORICAL EXAMPLES

- The Great Depression
- Japan during the 1990s
- The post-financial crisis years

Nobel Prize winner Paul Krugman has written extensively on both Japan's liquidity trap and the global liquidity trap following the 2008 crisis.

PATINKIN'S CRITIQUE

REAL MONEY BALANCES MATTER

One criticism of the liquidity trap argument follows from a critique originally directed at classical theory by US-Israeli economist Don Patinkin.

> Patinkin argued that classical theory neglected that although money does not necessarily have intrinsic usefulness, it does provide 'utility' to traders as it makes trades more convenient. Thus he argued for including money in utility functions, similarly to actual goods.

In classical spirit, he was careful to distinguish between nominal money M and real money M/P. It was the latter through its purchasing power that should be treated as a quasi-good.

THE PIGOU EFFECT

Patinkin's critique was employed by A.C. Pigou, a contemporary of Keynes, as a criticism of Keynes' liquidity trap argument.

If demand for goods depends positively on the value of real balances, then falling price levels can make IS shift rightwards and upwards, thus closing the gap between aggregate supply and aggregate demand.

This is known as the **Pigou effect**, which means that a liquidity trap can be overcome by market forces alone.



NORMAL TIMES

MONEY'S ROLE BEYOND THE THE LIQUIDITY TRAP

Whilst the theory of the liquidity trap reflects a disequilibrium that might arise under severe economic downturn, Keynes' view of the macroeconomic role of money also differed from Classical theory around situations of macroeconomic equilibrium—*normal times*.



CLASSICAL DICHOTOMY AND NEUTRALITY

In a monetary economy, dichotomy requires that, following a shock that disturbs equilibrium, all nominal prices adjust quickly so that the set of relative prices that lead to general equilibrium are achieved.

The Classical theory of a monetary economy assumes this.



QUICK ADJUSTMENT

All nominal prices adjust rapidly



RELATIVE PRICES

Achieve equilibrium values



MONEY NEUTRAL

Real variables unaffected

KEYNES DISPUTES THE ASSUMPTION

UNEVEN ADJUSTMENT

Keynes disputed this assumption, especially in the case of the labour market. He argued there is **unevenness** in the process by which nominal prices adjust.

Nominal prices in some markets adjust slower than in others.

CONSEQUENCES

There can be significant intervals of time following a disturbance to equilibrium in which relative prices are not at their 'market clearing' values.





THE ROLE OF MONEY IN NORMAL TIMES

While the liquidity trap reflects disequilibrium during severe economic downturns, Keynes' view of money's macroeconomic role also differed from Classical theory during normal times—situations of macroeconomic equilibrium.

MONEY'S NON-NEUTRALITY IN NORMAL TIMES

UNEVEN PRICE ADJUSTMENT

Keynes argued there is unevenness in the process by which nominal prices adjust. Nominal prices in some markets adjust slower than in others.

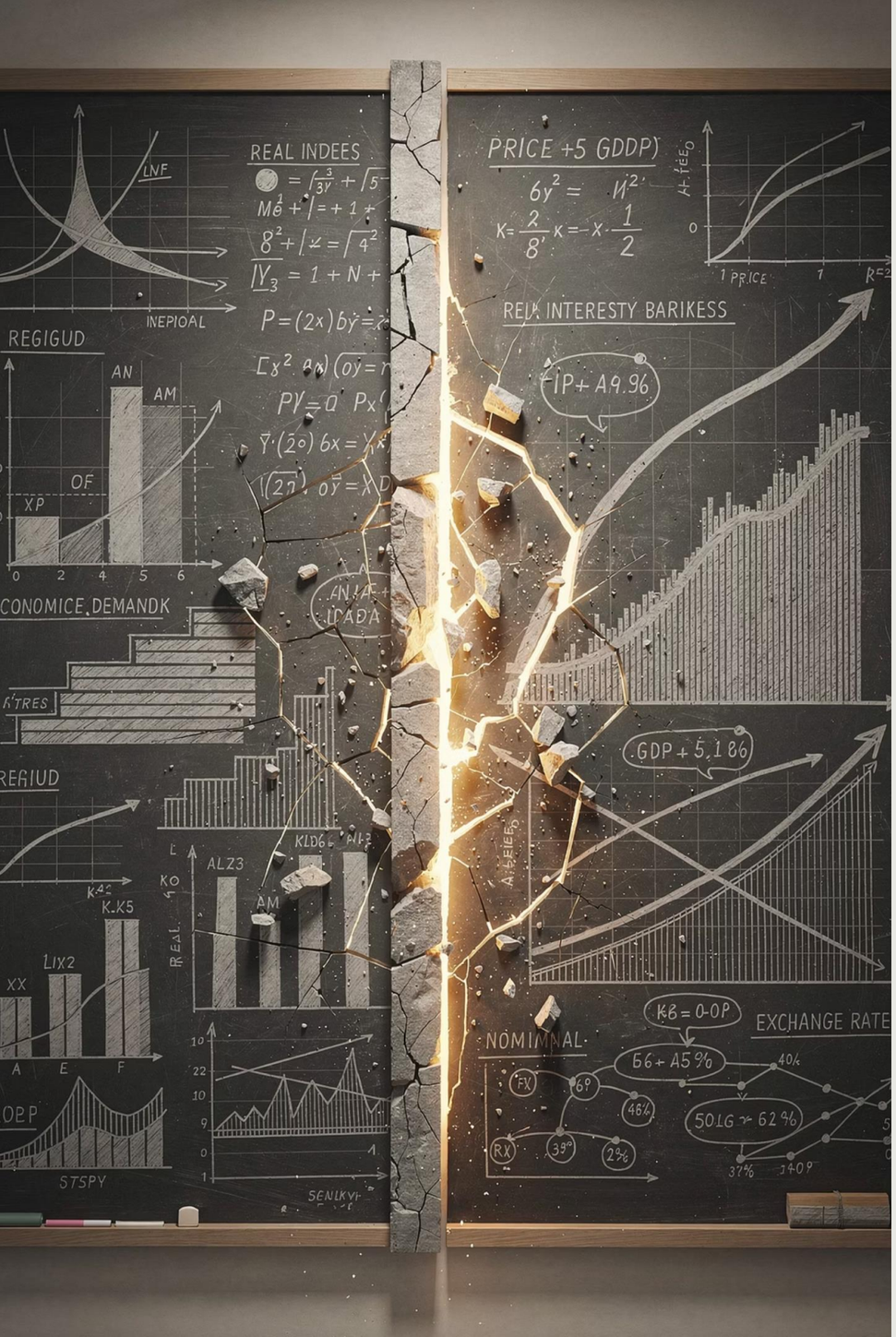
Thus there can be significant intervals of time following a disturbance to equilibrium in which relative prices are not at their 'market clearing' values.

IMPLICATIONS

Money is not neutral in Keynes' view. An increase in the quantity of money creates inflationary pressures, but the subsequent inflation is not uniform across different markets.

Thus relative prices do change and overall market clearing can be violated. This had particular implications for the labour market and unemployment.





DICHOTOMY BREAKS DOWN

Because money is not neutral, this also means that dichotomy does not hold in Keynes' view.

The quantity of money can affect 'real' variables such as relative prices and unemployment—not just nominal variables.

CLASSICAL VIEW

Money is neutral; dichotomy holds; real and nominal variables are independent

KEYNESIAN VIEW

Money is not neutral; dichotomy fails; money affects real variables

KEY DIFFERENCE

Uneven price adjustment means money has real economic effects

SUMMARY

KEY TAKEAWAYS

SAY'S LAW FAILS

In a monetary economy, excess demand for money can coexist with excess supply of goods

LIQUIDITY TRAP

When demand for money is infinitely elastic, normal equilibrating mechanisms fail

MONETARY POLICY LIMITS

In the liquidity trap, changes in money supply have no effect on real variables

MONEY NOT NEUTRAL

Outside the trap, money affects real variables through uneven price adjustment