Development of Financial Markets and Institutions

VI. The Great Depression

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VI. THE GREAT DEPRESSION

1. The Roaring 1920s
2. Crisis and Great Depression
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4. The Austrian Theory of the Business Cycle
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1. THE ROARING 1920S

BACKGROUND

The Forgotten Depression of 1920-21

- Wartime inflation, credit expansion caused boom
- Wartime economy heavily regulated
- Regulations repealed – back to "normalcy"
- End of inflationary wartime boom

Federal Reserve System

- The foundation of American banking
- The Federal Reserve Bank of New York dominant
- Financial system/Wall Street closely connected to banking
- Depression over by 1922 – stage is set for growth and boom

REAL ECONOMIC GROWTH

Rapid Economic Change

- Great expansion in many industries
- Automobiles (Ford and General Motors)
- Electronics (RCA)
- Mechanization of agriculture – tractorization
- Utilities (electricity)

Industrial Change

- Large-scale enterprises
- Vertically integrated enterprises became dominant

CHANGING FINANCIAL CONDITIONS

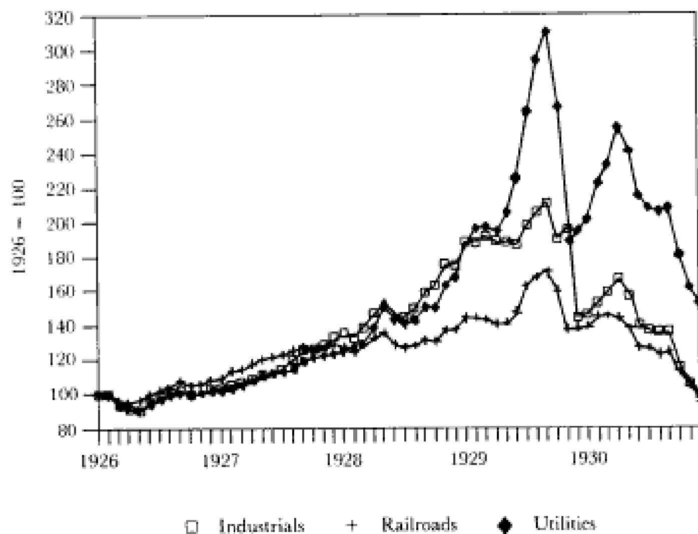
Regulation

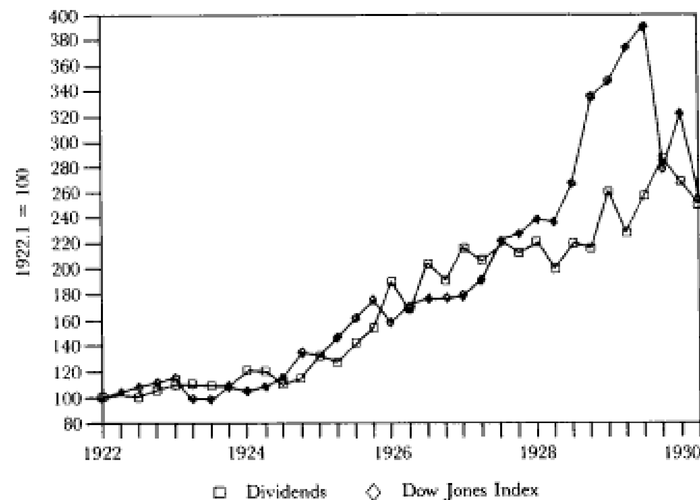
- Commercial banks could not offer large, long-term loans to corporations (White 1990)
- Banks' role as intermediaries greatly reduced, obstacles to investment banking

Financial Markets

- Enterprises sought capital through financial markets, issuing stocks and bonds
- Commercial banks increasingly bought bonds, engaged in insurance, and especially in brokerage services
- Banks also set up affiliates to engage in investment banking
- Banks serviced origination of half of all bonds by 1930
- Investment trusts greatly expanded (mutual funds): from 40 to 750 over 1921-1929
- Margin trading on Wall St common: funded by loans from brokers, secured with stock

STOCK MARKET BOOM (WHITE 1990, 71, 73)





CHANGES TO THE MONEY SUPPLY

Classical Gold Standard, but…

- The US money supply expanded rapidly due to several factors
- Partly from gold inflows (negligible)

Changing Banking Structure

- A change from demand deposits to time deposits enabled credit expansion
- The reserve ratio on time deposits only 3 percent vs. 10 percent on demand deposits

Federal Reserve

- Intervention expanded the money supply
- Discount rate important
- Acceptance market stimulated

US MONEY SUPPLY 1921-29 (ROTHBARD 2000)

Date	Currency Outside Banks	Demand Deposits Adjusted	Time Deposits	Total Deposits Adjusted and Currency Outside Banks	Savings and Loan Capital	Life Insurance Net Policy Reserves	Total Money Supply	Percent Annual Change From Previous
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1921–June 30	3.68	17.11	16.58	37.79	1.85	5.66	45.30	***
1922–June 30	3.35	18.04	17.44	39.00	2.08	6.08	47.16	4.1
1923–June 30	3.74	18.96	19.72	42.75	2.42	6.62	51.79	9.8
1923–Dec. 31	3.73	19.14	20.38	43.50	2.63	6.93	53.06	4.9
1924–June 30	3.65	19.41	21.26	44.51	2.89	7.27	54.67	6.1
1924–Dec. 31	3.70	20.90	22.23	47.08	3.15	7.62	57.85	11.6
1925–June 30	3.57	21.38	23.19	48.32	3.48	8.06	59.86	7.1
1925–Dec. 31	3.77	22.29	23.92	50.30	3.81	8.48	62.59	9.2
1926–June 30	3.60	22.00	24.74	50.57	4.09	8.96	63.62	3.3
1926–Dec. 31	3.83	21.72	25.33	51.12	4.38	9.46	64.96	4.2
1927–June 30	3.56	21.98	26.46	52.23	4.70	9.98	66.91	6.0
1927–Dec. 31	3.70	22.73	27.37	54.08	5.03	10.50	69.61	8.1
1928–June 30	3.62	22.26	28.53	54.68	5.39	11.05	71.12	4.4
1928–Dec. 31	3.59	23.08	28.68	55.64	5.76	11.60	73.00	5.2
1929–June 30	3.64	22.54	28.61	55.17	6.00	12.09	73.26	0.7

*Column 1, *currency outside the banks*, includes gold coins, Treasury currency, Federal Reserve Notes, and various minor currencies; currency held by the banks is, as usual, excluded because it is used as a *reserve* against part of the outstanding money supply. Column 3, *time deposits*, includes accounts at the commercial and savings banks and at the Postal Savings System. Column 4 totals the above three plus the negligible amount of U.S. Government deposits, to give total deposits and outside currency. Column 5 is the share capital of savings-and-loan associations. Column 6 is the policy reserves less policy loans of life insurance companies. Column 7 is the *total money supply*, adding Columns 4, 5, and 6. Column 8 gives the percentage annual change of Column 7 from the preceding date. Currency and deposit statistics can be found in Board of Governors of Federal Reserve System, *Banking and Monetary Statistics* (Washington, D.C.: Federal Reserve Board, 1943), pp. 34 and *passim*. Savings-and-loan data are available in *Historical Statistics of the U.S., 1789–1945* (Washington, D.C.: U.S. Deptartment of Commerce, 1949), p. 175, and life insurance data in the *Life Insurance Year Book*.

GROWTH IN GOLD RESERVES AND DOLLAR CLAIMS

- From Rothbard (2000, 94)
- Gold stock increases 15 percent
- But the total stock of dollars increases 60 percent
- Inflow of gold is dwarfed by a multiple expansion of credit

TOTAL DOLLARS AND TOTAL GOLD RESERVES*
(billions of dollars)

	Total Dollar Claims	*Total Gold Reserve*	*Total Uncovered Dollars*
June, 1921	44.7	2.6	42.1
June, 1929	71.8	3.0	68.8

GROWTH IN BANK RESERVES

The Primary Cause of the Growth of the Money Supply

- An increase in total bank reserves
- Reserves increased from $1.60 billion in 1921 to $2.17 in 1925 and $2.36 billion in 1929
- A 47.5 percent increase generated most of the 62 percent increase in the money supply

Fractional Reserve Banking

- Fractional reserves greatly multiplied the expansion of dollars
- A fall in reserve requirements part of the explanation
- An increase of $0.76 billion in reserves led to a $28 billion increase in the money supply

US RESERVES

MEMBER BANK RESERVES AND DEPOSITS*

Date	*Reserves Member Bank*	*Member Bank Deposits*	*Reserve Ratio*
June 30, 1921	1.60	18.6	11.6 : 1
June 30, 1925	2.17	25.5	11.7 : 1
June 29, 1929	2.36	29.4	12.5 : 1

*Column 1 is the total legal member bank reserves at the Fed, excluding vault cash (which remained steady at about $500 million throughout). Column 2 is member bank deposits, demand and time. Column 3 is the ratio of deposits to reserves.

WHAT CAUSED THE EXPANSION OF RESERVES?

- Rothbard (2000) analyzes the Fed's balance sheet and impact on the money supply in terms of *controlled* and *uncontrolled* factors

The main Uncontrolled Factors

- Currency in circulation outside banks – an increase reduces reserves
- Gold stock – an increase increases reserves
- Repayment of bills by banks (reduction in bills discounted) – reduces reserves

Causes Behind Uncontrolled Factors

- Currency in circulation is determined by the public's demand for physical cash
- Gold stock is determined by in/outflow of gold and demand for gold by public
  - Fed required to accept all deposits of gold
- Repayment of bills is determined by banks' desire to consolidate

WHAT CAUSED THE EXPANSION OF RESERVES?

The Main Controlled Factors

- Open market operations – i.e., asset purchases and sales
- Discounting of bills

Main Assets Bought by the Fed

- US government securities
- Bills, i.e., private paper, especially so-called acceptances
- Discounting of bills: advancing funds to banks against collateral, rediscount of bills

Role of the Discount Rate

- A low discount rate stimulates borrowing by banks
- A high discount rate discourages borrowing by banks

WHAT CAUSED THE EXPANSION OF RESERVES?

Breakdown of Changes in Reserves

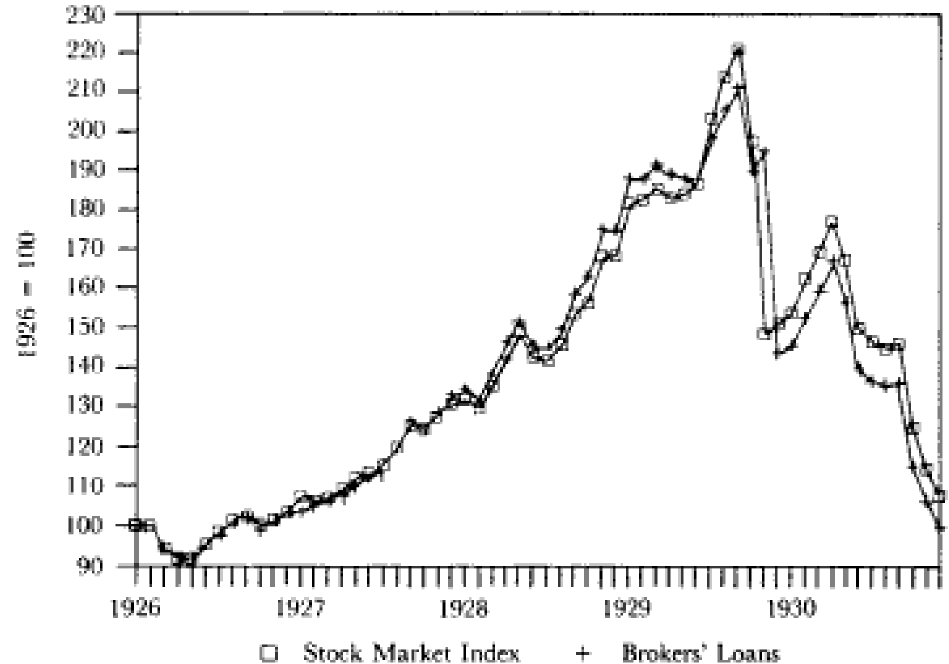
- Uncontrolled reserves declined by $1.04 billion
- Controlled reserves increased by $1.79 billion
- Inflation, the increase in the money supply, therefore a deliberate policy
  - Not simply the passive outcome of gold flows

Motives for the Inflation

- Help to Great Britain, prevention of gold outflows from the BoE
- Stimulation of the stock market
- Price stability – stabilization a popular cause, among economists and broadly

THE STOCK MARKET AND CREDIT (WHITE 1990)

- From White (1990)
- Indexed to 1926
- Amount of money lent (+)
- Index of stock market prices (□)



2. CRISIS AND GREAT DEPRESSION

BUST

Stock Market Crash

- Crash end of October 1929 – the accepted beginning of the depression
- All-time-high in September: Dow Jones Industrial Average (DJIA) reaches 381
- A slow decline begins into October

Black Thursday and Black Tuesday

- Black Thursday, October 24: DJIA opened 11 percent down, recovered, heavy trading volume, closed at 301
- Black Tuesday, October 29: Panic in the market, DJIA down to 230 at end of day, a 12 percent loss
- The stock market decline continued for years: bottom first reached in July 1932 – at 41

DEPRESSION, DEFLATION AND EASY MONEY

Two Opposing Monetary Forces

- Depression hit in 1930, two processes began
- Banks contracted loans, reducing the money supply
- Federal Reserve tried to stimulate the economy, increase lending and the money supply

Effects

- Money supply stable, as weak banks contracted credit, despite Fed policies
- Rediscount rate fell, from 4½ percent down to 2 percent at the end of 1930
- Federal Reserve increased purchases of US securities
- Gold inflows increased

DEPRESSION, DEFLATION AND EASY MONEY

Pattern in 1931

- Reserves increased by Fed, by buying and discounting bills
- Huge increase in currency in circulation
- Credit contraction by banks, especially in the final quarter of the year

European Troubles

- BoE going off gold in September 1931, gold outflows from US a consequence
- Gold stock fell from $4.7 billion to $4.2, continued fall to $3.6 billion in July 1932
- Cause: BoE devaluation and loss of confidence in dollar

Money supply Decline despite Fed Action

- Outflow of gold and an increase of money in circulation the main factors
- Aggregate money supply down by $5 billion over 1931

BANK RUNS

Bank Runs Across the US 1931-33

- Depositors no longer trusted their money was safe in the banks
- Bank holidays declared by governors exacerbated problem
- Run on Fed, gold reserve developed

End of the Bank Runs

- Roosevelt declared general bank holiday March 1933, suspended gold redemption
- A general deflation – fall in both the money supply and price level of about 30 percent – followed
- The "Great Contraction" (Friedman and Schwartz 1963)
- One third of banks failed – contraction of credit as well as money

THE END OF THE GOLD STANDARD IN THE USA

Abolition April-June 1933

- It became illegal to own gold, gold certificates for private persons
- A period of cajoling “hoarders”, forcing citizens to deposit gold in the banks
- Confiscation and large fine the penalty
- Banks prohibited from paying out gold, exporting it
- Gold clauses abrogated June 1933
- All gold centralized in banks → Federal Reserve → US Treasury

Devaluation and Inflation

- Price of gold changed 1934: from $20 per ounce to $35 – 40 percent devaluation
- Gold inflows then cause of inflation in the 30s (Salerno 1999)

UNEMPLOYMENT

Persistent Unemployment

- Worst in 1932-33 – above 20 percent
- Above 10 percent throughout the 1930s
- Real wage rates stable or increasing

Causes of Unemployment

- Large corporations resisted wage cuts
  - Widespread belief that reduction of labour income would deepen the depression
- Political pressure: President Hoover wanted to keep wages high
  - Pressured business to do this "voluntarily"
- Work sharing agreement: wages kept stable, but hours per worker reduced
  - A hidden increase in unemployment

UNEMPLOYMENT (MARGO 1993, 43)

Unemployment and Real Wages in the 1930s

	Unemployment Rate		*Real Wage Index*
	Lebergott	*Darby*	*(1940 = 100)*
1929	3.2%	3.2%	69.4
1930	8.7	8.7	75.7
1931	15.9	15.3	83.2
1932	23.6	22.9	80.8
1933	24.9	20.6	79.5
1934	21.7	16.0	84.3
1935	20.1	14.2	80.4
1936	16.9	9.9	81.1
1937	14.3	9.1	85.5
1938	19.0	12.5	93.9
1939	17.2	11.3	97.3
1940	14.6	9.5	100.0

Sources: Unemployment rates: Smiley (1983, p. 488). Real wage index: average hourly earnings of production workers in manufacturing divided by the wholesale price index; hourly earnings is from U.S. Bureau of the Census (1976, series D-802, pp. 169–170; wholesale price index is from U.S. Bureau of the Census (1976, series E-40, p. 200).

THE SMOOT-HAWLEY TARIFF

Return of Protectionism

- 1931 Smoot-Hawley tariff enacted
- Led to retaliatory tariffs in other countries
- Significantly hindered trade: US imports declined about 66 percent 1929-33 – although not all due to the tariff

A Balance-of-Payments Argument

- They reduce imports, preventing current account deficits, thereby protecting gold reserves
- However, tariffs also reduce exports – trading partners become less able to buy
- The result was an overall reduction in trade

THE END OF THE DEPRESSION(?)

A Widespread Claim

- The American depression ended in 1940, as the US started the build-up to war
- If we look at some aggregates, this is true
- Nominal spending (GDP) increased
- Unemployment disappeared

An Alternative View

- Robert Higgs (1997) showed that the depression persisted through the war
- Living standards continued to fall
- Only with the return to free(er) markets in 1945-6 did real incomes start to rise again
- The partial rollback of the New Deal is what led to prosperity

3. THEORIES EXPLAINING THE GREAT DEPRESSION

NON-EXPLANATIONS

Psychological Theories

- Investors suffer from irrational overoptimism, speculation is detached from reality
  - Animal spirits
- Investors are led by psychological impulses, not reason
  - Greed: An increase in "greediness" among capitalists lead to bubbles

Common Errors Behind These Explanations

- Why should any investor behave like this?
- Even if they do, why should the whole market, at the same time, be affected?
- Why should the same irrationality or psychological change determine all men?

THE MONETARIST EXPLANATION

The most Widespread Interpretation of the Great Depression

- The one pioneered by Friedman and Schwartz (1963)
- Banking crises after the crash led to contraction, deflation
- Businesses could not get loans to finance their activity

Deflation, Tight Money, the Problem

- It prevented the resumption of economic activity. New York Fed especially to blame
- The gold standard was also to blame
- Outflows of gold necessitates contraction, so the Fed exacerbated the problem by following the "rules of the game"
- FDR's policies prevented recovery, despite his suspension of the gold standard

THE KEYNESIAN EXPLANATION

The Other Popular Interpretation

- Aggregate demand is key to the Keynesian interpretation
- Aggregate demand collapsed in the bust (for whatever reason – animal spirits)
- A new, below-full-employment equilibrium established
- Government expenditure and inflation were therefore necessary to boost aggregate demand, return to full employment

The Great Depression a problem of too little government spending

- The Depression was only overcome by the World War
- A key challenge here is the absence of any discussion of relative prices
- The role of artificially high prices in bringing such a below-full-employment "equilibrium" about is forgotten

SCHUMPETER'S CYCLE THEORY

An Endogenous Cycle

- Joseph Schumpeter saw business cycles and periodic crises as a necessary consequence of expanding economies
- Entrepreneurs introduce innovations in management and production, a disequilibrating force
- Profit opportunities emerge as new technologies etc. are introduced in new sectors of the economy
- Profits gradually disappear as the economic system returns to equilibrium
- The crisis comes as profits dry up and equilibrium is again reached

THE ROLE OF MONEY

Money Is Key

- All these theories are, implicitly or explicitly, monetary theories
- The monetarist theory explicitly so: the key cause of crisis is monetary contraction
- Keynesianism is at least implicitly also focused on money: a decline of nominal spending needs to be cured through inflationary policies
- Schumpeter's theory tacitly introduces the monetary element
    - Credit expansion is necessary to fund the entrepreneurial process
    - The banker is the partner of the entrepreneur

4. THE AUSTRIAN THEORY OF THE BUSINESS CYCLE

MONEY IS KEY

A General Factor Is Needed

- Since the Great Depressions – and all similar crises – was a general downturn
- Money is such a general factor: money enters into all markets
- The use of money unites the whole economy

The Whole Cycle Is Important

- We need to look at what came before the crash – not every expansion of economic activity is sound and sustainable
- Money and real factors need to be integrated
- There are changes in nominal variables and in real activity
- The Austrian theory, or Mises-Hayek theory, achieves this

SOUND INVESTMENT

Causes

- The amount of investment is determined by the amount of savings available
- Savings in turn depends on individuals' willingness to postpone consumption

Effects

- An increase in savings means more capital becomes available for investment
- More and longer production processes can be undertaken
- Factors of production are freed up in consumption industries, can be employed in producing inputs for future goods
- Individual entrepreneurs can make mistakes and misallocate resources – punished by losses
- Overall, the result is sound and sustainable economic growth

THE STRUCTURE OF PRODUCTION

FROM ROTHBARD (2009).

Interest Income

Consumer Expenditure

D = Demand for Present Goods by Future Goods

S = Supply of Present Goods for Future Goods

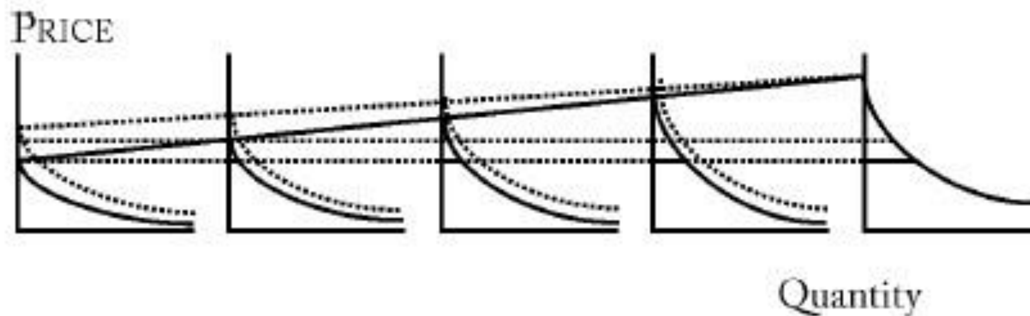
Price

Higher Lower

Stages of Production

ALLOCATION OF A FACTOR ACROSS STAGES

- The diagram shows demand for a factor
- Lowest stage to the right
- Discount line determined by rate of interest
- Increase in investment:
- Demand falls in lowest stage
- Discount line flattens



Hayek (1931, 262) figure 7

CREDIT EXPANSION

Credit Expansion and Investment

- New money enters financial markets or are lent to businesses
- The rate of interest declines, investment increases
- Production in the higher stages expands

Unsustainable Growth

- No restriction of consumption has taken place
    - ➢ There is no change in the social savings-consumption proportion
- Once the new money reaches factor owners (labourers), they will spend it according to their old preference
- Production in capital goods sectors expands without a restriction of consumption

CRISIS AND DEPRESSION

Unsustainable Production

- When money flows to consumers, demand will shift back to lower stages
- Higher-order production processes must be abandoned
- The complementary factors (labour) needed are more highly valued elsewhere

Crisis and Depression

- Once factor prices rise, firms must restrict activity, may go bankrupt
- Then, prices of higher-order factors fall, absolutely and relatively to lower-order prices
- This speeds up adjustment: factors move to more highly-valued employment
- Transitory unemployment emerges as labourers must shift from higher to lower orders

End of Depression

- Once prices have fully adjusted and the malinvestments have been purged
- Some fixed capital may be inconvertible and permanently lost – "idle capacity"

CAN CREDIT EXPANSION KEEP GOING?

Ongoing Credit Expansion

- Can the crisis be averted?
- For a time, yes – banks can continue to expand credit
- But since factor prices increase, the ***rate*** of credit expansion must rise to prevent bust

Inherent Limits to Credit Expansion

- The extra complementary factors simply don't exist, prices *will* eventually accelerate
- On a gold standard, the internal and external gold drain also imposes limits
- Confidence in the expanding banks may evaporate, leading to bank runs
- Legal tender privileges for fiduciary media solves this – then the final limit on credit expansion is hyperinflation

SECONDARY DEFLATION

Definition

- The deflation of the money supply that may occur in a depression
- Secondary since there is a primary deflation, fall in prices, as the economy adjusts
- It emerges when people remove funds from banks, banks contract credit

Cause

- One core cause is an increase in the demand for money
- Partly speculative, expecting lower prices
- Partly precautionary, since the future is more uncertain now

Consequences

- The flow of credit to business is restricted
- The demand for factors in the higher orders of the production structure falls, the interest rate increases
- This contributes to speeding up the adjustment of the production structure

THE AUSTRIAN THEORY AND THE AMERICAN BOOM

The Boom in the 1920s

- An increase in the money supply leads to an expansion of business activity
- Evident in loans through brokers, the expansion of commercial bank bond holdings

The Austrian Theory and the Bust

- Money supply stopped increasing end of 1928
- The downturn had already begun by the time of the 1929 stock market crash
- What about the persistent depression?

THE AUSTRIAN THEORY AND THE DEPRESSION

The Problem of the Long Depression

- A period of readjustment is necessary– but it should be over quickly
- Fixed wages a key problem – through trade union power, legal wage minima, or mistaken, quasi-mandatory doctrines
- This was true in the US as well as most European countries
- When wages are fixed there is no possibility of finding better job opportunities

Adjustment and Calculation Hampered

- There is no reason to change occupations
- Entrepreneurs cannot reduce costs
- When real wages rise, nominal wages must fall for the businessman
    - When this is not possible, marginal workers are fired, unemployment results

5. LITERATURE

LITERATURE

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