THEORIE UND EMPIRIE DER GELD- UND WÄHRUNGSPOLITIK

An introduction to the 'Austrian theory of money'

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Theorie und Empirie der Geld- und Währungspolitik

Master Economics & IWG

An Introduction to the Austrian theory of money

2 - 4 June 2016, University of Bayreuth

Thursday, 2 June 2016			
14:00	14:45	1	The 'Austrians' - an overview
14:45	15:30	2	On the scientific method of economics
15:45	16:30	3	Praxeology
16:30	17:15	4	What money is, and what function(s) it has
17:30	18:15	5	The origin of money, the regression theorem

Friday, 3 June 2016			
9:00	9:45	6	The value of money, inflation and deflation
9:45	10:30	7	Fractional reserve and central banking
10:45	11:30	8	A brief history of money and the gold standard
11:30	12:15	9	On Rothbard's "What Has Government Done to Our Money?"
13:30	14:15	10	Hayek's 'denationalization of money' - a critique
14:45	15:30	11	The quantity theory - a critique
15:45	16:30	12	Time preference and the theory of the interest rate
16:30	17:15	13	The Austrian business cycle theory

Saturday, 4 June 2016			
9:00	9:45	14	Secular stagnation, zero and negative interest rates
9:45	10:30	15	On "QE" and other 'unconventional monetary policies'
10:45	11:30	16	The idea of launching a single world currency
11:30	12:15	17	Q&A

1. The 'Austrians' - an overview

THE PURPOSE OF THIS SESSION:

(1) Informing you about the birth of the 'Austrian School'; (2) making you familiar with the Austrian School's main representatives; (3) touching upon their major contributions to (political) economics.

READINGS:
"15 Great Austrian Economists" (1999), Holcombe, R. G. (ed.), Ludwig von Mises Institute, Auburn, US Alabama.

Carl Menger

IMPORTANT WORKS:
Principles of Economics (1871), *Investigations into the Method of the Social Sciences with Special Reference to Economics* (1883), *The Errors of Historicism in German Economics* (1884).

- Born 28 February 1840, died 26 February 1921.
- In 1871, published Menger his pathbreaking *Grundsätze der Volkswirthschaftslehre* (*Principles of Economics*).
- Together with the Léon Walras (1834 – 1919) and William Stanley Jevons (1835 – 1882), Menger spelled out the *theory of marginal utility* – which has become the cornerstone of value and price theory.
- Menger also put forward a theory of the origin of money: Money emerged spontaneously from free market activities, and out of a commodity.
- In 1872, Menger became a *Privatdozent* in the Faculty of Law and Political Science at the University of Vienna.
- In 1873, he was promoted to the position of a paid, full-time associated professor.
- In 1876, Menger became a tutor for economics to Rudolf von Habsburg (1858 – 1889), the Crown Prince of Austria.
- In 1879, Menger was appointed to the Chair of Political Economy in Vienna's Law Faculty as a professor ordinarius or full professor.
- With his *Investigations* (1883), Menger battled the *German Historical School*, which considered historicism as the appropriate method of economics and rejected any notion of *economic laws*.
- In 1884 Menger published *The Errors of Historicism in German Economics*, thereby kicking off the infamous *Methodenstreit*, which basically established the *Austrian School of Economics*.

Eugen von Böhm-Bawerk

IMPORTANT WORKS:
History and Critique of Interest Theories (1884), *Positive Theory of Capital* (1889) (second volume of *Capital and Interest), Value and Price* (part of the second volume), *Further Essays on Capital and Interest* (1921) (third volume), *Karl Marx and the Close of His System* (1896).

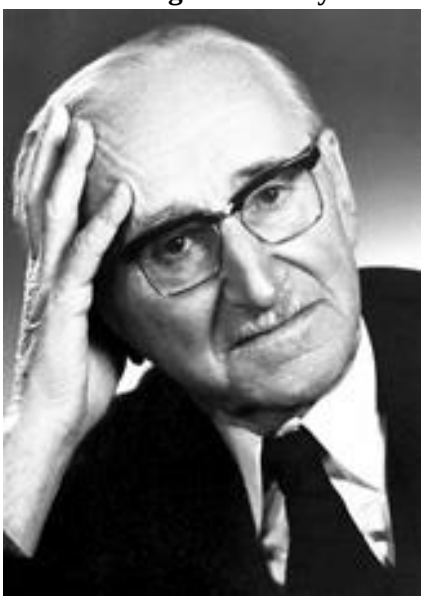
- Born 12 February, 1851, died 27 August 1914.
- From 1881 to 1889, Böhm-Bawerk taught at the University of Innsbruck and became professor in 1884.
- In his *History and Critique of Interest Theories* (1884), Böhm-Bawerk reveals the fallacies in the history of thought concerning the interest rate.
- In *Positive Theory of Capital* (1889), he argues that capital is not homogeneous but an intricate and diverse structure that has a time dimension. A growing economy is not just a consequence of increased capital investment, but also of longer processes of production (*roundaboutness*).
- Böhm-Bawerk argues that the interest rate is determined by three factors: (1) Current needs are typically less well satisfied than future needs; (2) human beings tend to underestimate future needs; (3) a technical factor that determines *time preference*: higher physical productivity of *roundabout* methods of production.
- Böhm-Bawerk engages in an intellectual battle with the Marxists over the exploitation theory of capital (*Karl Marx and the Close of His System* (1896). He refutes the socialist doctrine of capital and wages (actually long before the communists came to power in Russia) by demonstrating that capitalists save money, pay labor, and wait until the final product is sold to receive profit.
- Böhm-Bawerk held a regular seminar that would later become the model for Mises's Vienna *Privatseminar*.
- He was Austrian Minister of Finance in 1895, 1897 – 1898 and 1900 – 1904.

Ludwig von Mises

IMPORTANT WORKS:
The Theory of Money and Credit (1912), *Socialism* (1922), *Liberalism* (1927), *Interventionism* (1940), *Omnipotent Government* (1944), *Bureaucracy* (1944), *Human Action* (1949), *Anti-Capitalistic Mentality* (1956), *Theory of History* (1957), *Ultimate Foundation of Economic Science* (1962).

- Born 29 September 1881, died 10 October 1973.
- In *The Theory of Money and Credit* (1912), Mises extended Austrian marginal utility theory to money, and he developed the *regression theorem*, showing that money must have emerged from a commodity.
- In 1920, Mises proofed, based on economic science, that socialism was impossible and doomed to fail.
- In his magnum opus *Human Action* (originally published as *Nationalökonomie* in 1940), Mises reconstructed the science of economics along the line of the *axiom of action*, logically deducing economic truths from a self-evident *axiom*.
- From 1913 to 1934, he was an unpaid professor at the University of Vienna, working as an economist for the Vienna Chamber of Commerce. In this capacity he served as the principal economic adviser to the Austrian government.
- Fleeing the German National Socialism regime, Mises left for Geneva in 1934, where he was a professor at the Graduate Institute of International Studies until he emigrated to New York City in 1940. He was a visiting professor at New York University as from 1945 until he retired in 1969.

Friedrich August von Hayek



IMPORTANT WORKS:
Monetary Theory and the Trade Cycle (1929), *Prices and Production* (1931), *Pure Theory of Capital* (1941), *The Road to Serfdom* (1944), *The Constitution of Liberty* (1960), *Denationalisation of Money* (1976).

- Born 8 May 1899, died 23 March 23 1992.
- Hayek is perhaps the most widely known representative of the Austrian School of Economics.
- At the University of Vienna, Hayek attended the lectures of Friedrich von Wieser and Othmar Spann and joined Mises's *Privatseminar*.
- The *Hayekian triangles* (*Prices and Production* (1935)) provided a highly stylized way of describing (interest rate induced) changes in the intertemporal pattern of the capital structure. He identified the trade cycle as an intertemporal *discoordination*.
- He provided a sharp and devastating critique of J. M. Keynes' *The Theory of Employment, Interest and Money* (1936).
- In the late 1930s and early 1940s, his research focused on the role of *knowledge and discovery in market processes*, and on the methodological underpinnings of the Austrian tradition, particularly *subjectivism* and *methodological individualism*.
- He received the 1974 *Nobel Memorial Price in Economics* (together with Gunnar Myrdal).
- Hayek became famous with his book *The Road To Serfdom* (1944), in which he warned against the *tyranny* that inevitably results from government control of the economy.
- He argued for a *denationalisation of money* (1976), making a case for free market money.

Murray N. Rothbard

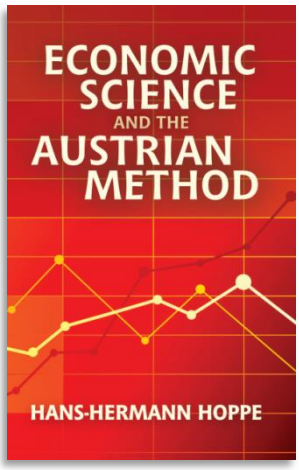
IMPORTANT WORKS:
Man, Economy, and State (1962), *Americas Great Depression* (1963), *What Has Government Done to Our Money?* (1963), *Power and Market* (1970), *For a New Liberty* (1973), *The Ethics of Liberty* (1982), *The Mystery of Banking* (1983), *An Austrian Perspective on the History of Economic Thought* (1995).

- Born 2 March 1926, died 7 January 1995.
- Murray N. Rothbard was an exponent of the *rationalist branch of the Austrian School of Economics*, a critic of all variants of social relativism: historicism, empiricism, positivism, falsificationism, and scepticism.
- As a highly original thinker, Rothbard made important contributions to economics, history, political economy and philosophy; Rothbard is the latest and most comprehensive system-builder within Austrian economics.
- Rothbard developed and extended the Austrian economics of Ludwig von Mises, in whose seminar he had participated for many years.
- In his textbook *Man, Economy, and State* (1962), Rothbard explained Mises's *Human Action* in a fashion suitable for college students.
- In *What Has Government Done to Our Money*, (1963) Rothbard explained, on a praxeological basis, why and how the state replaces commodity with fiat money.
- In *The Ethics of Liberty* (1982), Rothbard (re)integrated economics and ethics, providing the basis for *rationalist ethics*.
- His unique contribution is (i) the rediscovery of property and property rights as the common foundation of both economics and political philosophy, and (ii) the systematic reconstruction and conceptual integration of marginalist economics and natural-law political philosophy into a unified moral science: *libertarianism*.

1. On the scientific method

THE PURPOSE OF THIS SESSION:
You will (1) learn about the *scientific method of mainstream-economics*, (2) critically review empiricism-positivism and (3) become aware of its logical inconsistencies.

READINGS:
Hoppe, H.-H. (2007) Economic Science and the Austrian School; also Mises, L. v. (1957), Theory and History, Ludwig von Mises Institute, Auburn, US Alabama.



- "Action without thinking, practice without theory are unimaginable. The reason may be faulty and the theory incorrect; but thinking and theorizing are not lacking in any action."
  —Mises (1996), Human Action, p. 177.

- *What is the correct economic theory?* The 'Misesian' answer is: *Economics is pure a priori theory*. The correctness of an economic theory must, and can, be proven at the *a priori* theoretical level; it can*not* be tested.

  ▶ Let us assume you make the following observation: From 1900 to 2015, income taxes rose from, say, zero to 40 percent; in the same period, income per capita rose from, say, 10 to 200. The question is: Did income per capita rose *because* or *despite* the rise in income tax?

- On the issue of *methodology* and the *scientific method.*

- *Natural sciences* versus *social science* (or: the *science of human action*).

POSITIVISM

- *Positivism* is closely associated with *Auguste Comte* (1798–1857), who was, at least initially, a follower of Count *Henri de Saint-Simon* (1760–1825).

  ▶ Positivism is a *philosophy of science*. It holds that (1) sense experience is the only (and measurable) source of human knowledge; (2) that knowledge can come only from the affirmation of theories through the *scientific method*; and that (3) the validity of metaphysical speculation must be rejected.

- In the early 20th century, *logical positivism* sprang up in Vienna and grew to become one of the dominant movements in American and British philosophy. It is an absolutist way of looking at statements and labelling them as either *true*, *false* or *meaningless*. A central element of logical positivism is that it rejected statements about *ethics* and *aesthetics* as being unverifiable, and therefore not a part of serious philosophical thinking.

- The positivist view is sometimes referred to as a *scientistic ideology*, and is often shared by *technocrats* who believe in the *necessity of progress through scientific progress*, and by naturalists, who argue that any method for gaining knowledge should be limited to natural, physical, and material approaches.

EMPIRICISM

- *Empiricism* (as applied in the field of *social sciences*) considers *natural sciences* to be its model and, when applied to economics, can be characterised as follows:

  ▸ Empiricism maintains that economic propositions have the same logical status as *laws of nature*, and it states *hypothetical relationships* between two or more events, essentially in the form of *if-then statements*.

  ▸ It maintains that economic propositions require continual testing vis-à-vis experience. They can never be validated once and for all with certainty, as the economic hypothesis is forever subject to the outcome of contingent, future experience.

  ⟶ If data testing *confirms* the hypothesis, empiricism would say that it is *not validated* (once and for all), as there remains the possibility that the relationship(s) under review might be *falsified* by future experience (using new data and/or including explanatory variables which were hitherto "uncontrolled" for).

  ⟶ If, however, data testing suggests a rejection of the hypothesis, it would not prove that the hypothesised relationship could never be observed through future testing, so it is *not falsified* either.

- Empiricism is expressive of *scepticism*, which can be formulated as: *nothing can be known with certainty, and anything might be possible in the realm of economics*; it leads to a philosophy of *social and economic relativism*. Perhaps most prominently, David Hume (1711–1776) rejected the notion of *causality*. He stated that even if we observe one event continually following another, we cannot conclude a *necessary connection* between the two (*post hoc, ergo propter hoc fallacy*).

- There is an even more severe problem with empiricism. Upon closer examination it can be shown that *empiricism* is a *self-contradictory doctrine*:

  ▸ The empiricist proposition that *all economic events are only hypothetically related* is contradicted by the message of the basic empiricist proposition itself.

⟶ If we assume that the empiricist claim is *categorically true*, it would belie its own thesis, namely that empirical knowledge must invariably be hypothetical knowledge – thereby making room for a discipline as economics claiming to produce a priori valid (empirical) knowledge.

⟶ If, however, this proposition is regarded as itself being *hypothetically true*, it would not qualify as an epistemological pronouncement. Empiricism would not provide any justification whatsoever for its claim that economic propositions are not, and cannot be, *categorically* (or *a priori*) true.

▸ Empiricism conceives of economic data as *objective data*, extending in time and space and being subject to quantifiable *measurement*. Note, however, that measuring cannot be observed in the first place. One has to know what measuring is before one can actually do something called measuring.

⟶ One cannot observe someone making an observation or measurement as such in the first place. In fact, one must first *understand* what observations and measurements are, and only *thereafter* one is in a position to interpret these phenomena accordingly.

⟶ As a result, empiricism must acknowledge that there is empirical knowledge which is based on *understanding* – something which does not, and cannot, rest on empiricism itself.

CONSTANCY PRINCIPLE

- There is another important reason why empiricism is a *self-contradictory*, self-defeating, *doctrine*: It tacitly assumes the existence of non-empirical knowledge as *non-hypothetical knowledge about reality*, and that is the *constancy principle*.

	Hypothesis: M↑ ⟶ P↑		
	Obervations:		
Periods	M	P	Results
t_1	↑	↑	confirmed
t_2	↑	↑	confirmed
t_3	↑	↓	falsified
t_4	↑	unchanged	falsified

▸ The *constancy principle* says that observable phenomena are in principle determined by causes which are *constant* and *time-invariant* in the way they operate. It is a prerequisite for being able to falsify or confirm a theory:

"Only if the constancy principle is assumed to be valid does it follow from any failure to reproduce a result that there is anything wrong with the original hypothesis." —Hoppe (2006), Is Research Based on Causal Scientific Principles Possible in the Social Sciences?, p. 298.

▸ Experience only reveals that two or more observations regarding the temporal sequence of events can be classified as "repetition" or as "non-repetition". To either confirm or falsify a hypothesis, one has to assume that there are *constant causes* which operate in *time-invariant*

ways. Without assuming the *constancy principle*, the observations are, and remain, non-repetitive registered experiences, not in any way related events.

- The constancy principle cannot be derived from experience, nor can it be disproved by experience:

  ▸ The *constancy principle* cannot be derived from experience (as empiricism would need to claim). There is simply *no observable link* that would connect events (and this has been known since David Hume). Even if such a *link* were observable, one could not conclude from this whether or not the link was *time-invariant*.

  ▸ The *constancy principle* cannot be disproved by experience. Any event which might appear to disprove it (such as a failure to duplicate some experience) could be interpreted as if experience had shown that merely one *particular* type of event was not the cause of another (otherwise the experience would have been successfully repeated). However, to the extent that experience cannot exclude the possibility that *another* set of events might be found which would turn out to be time-invariant in its way of operating, the validity of the constancy principle cannot be disproved.

A NOTE ON KARL R. POPPER'S *CRITICAL RATIONALISM*

- Karl Raimund Popper (1902 – 1994) rejects *induction* as a scientific method for gaining knowledge. He proposes a continuous process of conjecture and refutation; this is what he calls *critical rationalism.*

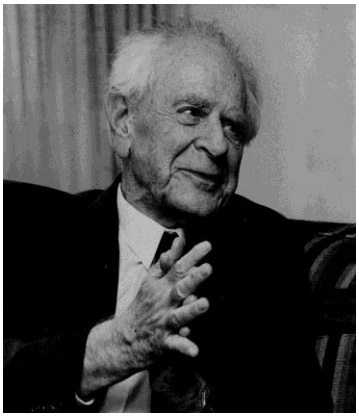
  ▸ Note that the fundamental *problem of induction* is this: For logical reasons, there is no valid inference from particular to general. If your observation is that *all* swans are white, you *cannot* conclude that there are *only* white swans in this world.

  ⟶ Induction cannot be justified *a priori* or *a posteriori*.

- Critical rationalism maintains that *one can never verify a hypothesis, at best one can falsify it*. Scientific progress is achieved by "trial and error", that is replacing falsified theories with non-falsified theories:

  ▸ "The way in which knowledge progresses, and especially our scientific knowledge, is by unjustified (and unjustifiable) anticipations, by guesses, by tentative solutions to our problems, by conjectures. These conjectures are controlled by criticism; that is, by attempting refutations, which include severely critical tests. They may survive these tests; but they can never be positively justified: they can be established neither as certainly true nor even as 'probable' (in the sense of the probability calculus)."

  —Popper, K. R. (2002 [1963]), Conjectures and Refutations, Routledge Classics, London, New, Routledge Classics, London, New York, p. xi.



Karl Raimund Popper
1902 – 1994

- How can the truth claim be justified that one cannot verify a hypothesis but only fail to falsify it? Popper makes use of *modus tollens* (which means: If *p*, then *q*. Not-*q*. Therefore, not-*p*).

- Popper's *falsificationism* claims that (i) knowledge about reality comes from observation; (ii) that the truth claim of theories has to be evaluated on the basis of observation, and (iii) that all knowledge of reality is only hypothetically true (thereby denying *a priori* knowledge of reality).

CRITIQUE

▸ Falsificationism is grounded in *empiricism* – and as such subject to criticism levelled against empiricism (except for the *induction problem*). Such a criticism concerns, for instance, the view that all knowledge comes from sensory experience.

⟶ It is an indisputable insight that there is no "pure" observation, or experience. Any observation is (and must be) *theory dependent*. As theory pre-determines observation, the question arises: *How do (or can) we know that the theory, which (pre-)determines observation, is correct?*

⟶ To make it even more difficult: Given that (correct) *theories change over time* (something falsificationists wouldn't deny), observations must change over time, too. Observations are therefore not time-invariant if and when theories change.

⟶ As far as human action is concerned, (repeatable) experiments (Popper calls them *protocol sentences*) – which are possible to conduct in natural sciences are impossible. There are simply no repeatable (homogeneous) human actions.

▸ Hoppe places Popper(ianism) right in the positivistic-empiricist camp:

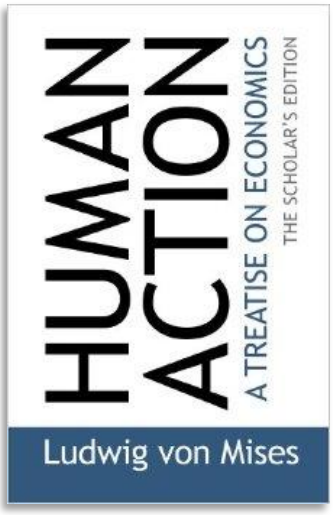
"Popper is in complete agreement with the fundamental assumptions of empiricism (…) and explicitly rejects the traditional claims of rationalism, i.e. of being able to provide us with a priori true empirical knowledge in general and an objectively founded ethic in particular."

"In fact, it is only fair to say that it is Popper who contributed more than anyone else to persuading the scientific community of the modernistic, empiricist-positivist worldview."
—Hoppe, H.-H., In Defence of Extreme Rationalism: Thoughts on Donald McCloskey's *The Rhetoric of Economics*, in: The Review of Austrian Economics, Vol. 3, No. 1, footnote 18, p. 208.

3. Praxeology

THE PURPOSE OF THIS SESSION:
(1) Learning about the difference between natural and social sciences, (2) understanding Mises's call for *methodological dualism*, (3) outlining the logical categories of human action.

READINGS:
Mises, L. v. (1998), Human Action. A Treatise on Economics, The Scholar's Edition, Ludwig von Mises Institute, Auburn, US Alabama, Part One, pp. 11 – 142; Rothbard, M. N. (2009), Man, Economy, and State, Ludwig von Mises Institute, Auburn, US Alabama, Chapter 1, pp. 1 – 77.



- According to Mises, the scientific method of economics must be different from the scientific method of natural sciences (this is what Mises calls *methodological dualism*).

Natural sciences	Science of human action
▪ Deals with unanimated elements (stones, atoms, animals etc.). ▪ It is *possible* to test hypotheses by checking against homogenous bits of events. ▪ The cause of events is *unknown*: We try to find *causal theories* by taking recourse to empirical data. ▪ …	▪ Deals with acting humans (who have preferences, values, and act purposefully). ▪ It is *impossible* to test by checking against homogenous bits of events (for there are no such events). ▪ The cause of events is *known*, namely the primordial fact that human beings have goals and act to attain them; human action is the *ultimate given*. ▪ …

ON POSITIVISM-EMPIRICISM-FALSIFICATIONISM
— *Positivism*: The idea that *scientific knowledge* can only be derived by empiricism.
— *Empiricism*: The idea is that there is no absolute truth, but only hypothetically true sentences.
— *Falsificationism* (as advocated by R. Popper (1902 – 1994)): Science is about testing hypotheses ("if-when" statements), holding the view that you can *falsify*, but never *verify* a hypothesis.

- Mises's scientific method of economics is *praxeology*: the *logic* of human action.

  ▸ Human action means substituting a more satisfactory state of affairs for a less satisfactory state of affairs.

- The starting point of praxeology is an irrefutably true proposition, namely that *humans act*; it is also called *the axiom of human action*.

  ▸ You cannot argue that humans don't act without running into an intellectual contradiction. For if you say "humans don't act", you act, thereby contradicting what you have just said.

Immanuel Kant
1724 – 1804

  ▸ What is the *epistemological status* of the axiom of human action?

	analytical	synthetical
a priori	(1)	(3)
a posteriori	(2)	(4)

HUMAN ACTION AS THE *ULTIMATE GIVEN*
— It is irrefutably true that humans act.
— Human action is driven, or caused, by ideas.
— As long as we cannot establish definite relations between ideas and physical/chemical events that determine ideas, human action must be considered the *ultimate given*.

"Even the most fanatical champions of the "Unified Science" sect shrink from unambiguously espousing this blunt formulation of their fundamental thesis. There are good reasons for this reticence. So long as no definite relation is discovered between ideas and physical or chemical events of which they would occur as the regular sequel, the positivist thesis remains an epistemological postulate derived not from scientifically established experience but from a metaphysical world view. The positivists tell us that one day a new scientific discipline will emerge which will make good their promises and will describe in every detail the physical and chemical processes that produce in the body of man definite ideas. Let us not quarrel today about such issues of the future. But it is evident that such a metaphysical proposition can in no way invalidate the results of the discursive reasoning of the sciences of human action. The positivists for emotional reasons do not like the conclusions that acting man must necessarily draw from the teachings of economics. As they are not in a position to find any flaw either in the reasoning of economics or in the inferences derived from it, they resort to metaphysical schemes in order to discredit the epistemological foundations and the methodological approach of economics."
—Mises (1957), Theory and History, pp. 3–4.

- The prerequisites of any human action are: (1) uneasiness, or dissatisfaction, with the current situation; (2) an image of a more satisfactory state of affairs; and (3) the expectation that purposeful behavior has the potential to remove felt uneasiness.

- From the irrefutably true *axiom of human action*, a number of true sentences (categories) can be deduced.

  ▸ Deduction in the form of:
  (1) We assert *A* (the axiom of human action).
  (2) If *A*, then *B*, if *B*, then *C*, if *C*, then *D*, etc. (rule of logic).
  (3) As a result, if *A* is true, we assert the truths of *B*, *C* and *D*.

- Categories of human action

  — Human action is, and can only be done, by *individual actors* (*methodological individualism*)
  ▸ "Group", "state" or "collective" are metaphors. They don't have any reality apart from the acts of various individuals.

  — Human action is purposeful
  ▸ Purposeful (conscious) action versus reflexive (unconscious) action.

  — Means and ends
  ▸ Means must be employed to achieve ends.

  — Scarcity
  ▸ Means are scarce.

  — Causality
  ▸ Human action presupposes the category of *causality* (the categories *means* and *ends* presuppose the category of cause-and-effect).

  — The law of diminishing marginal utility
  ▸ A larger supply of goods is preferred over a smaller supply of goods; and the greater the supply of a good, the lower is its marginal utility.

  — Time
  ▸ Action takes place in time; there is no timeless action.

  — Time preference
  ▸ An earlier satisfaction of wants is preferred over a later satisfaction of wants.

  — The originary interest rate
  ▸ A good available in the future is valued less highly than good available in the present.

  — Uncertainty
  ▸ If we knew the future events completely, we would never act, as acting couldn't change the course of things. Action signifies that the future is uncertain.

  — Private property
  ▸ Human action pre-supposes self-ownership (and the right to sustain one's body).

— …

- Examples (of *a priori* theories):

  (1) Voluntary exchange is mutually beneficial for the parties concerned (other things being equal).

  (2) If the supply of a good increases by one additional unit, the value attached to this unit must decrease. For this additional unit can only be employed as a means for the attainment of a goal that is considered less valuable than the least valued goal satisfied by a unit of such good if the supply were one unit shorter.

  (3) The rise in the quantity of money reduces the purchasing power of each money unit (compared to a situation in which there had been no rise in the quantity of money).

  (4) Whenever a minimum wage is set above the existing market wage, involuntary unemployment will result.

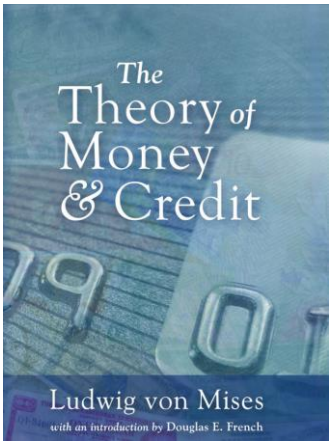
  (5) If banks issue new money via credit expansion (which is not backed by real savings), economic problems ("boom-and-bust") will be the inevitable outcome.

  (6) …

4. What money is, and what function(s) it has

THE PURPOSE OF THIS SESSION:
You will learn that (1) money has *just one* function, (2) that any given quantity of money is 'optimal' and that (3) a rise in the quantity of money leads to redistribution of income and wealth.

READINGS:
Rothbard, M. N. (1990), What Has Government Done to Our Money? Ludwig von Mises Institute, Auburn, US Alabama, II.8, "The "Proper Supply of Money".



FUNCTION(S)

- "Money is a medium of exchange. It is the most marketable good which people acquire because they want to offer it in later acts of interpersonal exchange. (...) This is its only function. All the other functions which people ascribe to money are merely particular aspects of its primary and sole function, that of a medium of exchange."
  —Mises (1996), Human Action, p. 401.

  Money's only function is the means of exchange function. The *unit of account* function of money and the *store of value* function of money are just *sub-functions* of money's exchange function:
  — The unit of account function is expressive of the medium of exchange function.
  — The store of value function denotes the possibility of transferring money's means of exchange function from the present into the future.

- Using money as a means of exchange allows for an overall *increase in productivity*. For instance, assume that there are n goods, so that in a barter economy the individual would have to know $(n^2 - n) / 2$ independent ex-change ratios. Using money as a unit of account, however, an individual would need to know just $n - 1$ exchange ratios.

  To show that using money increases peoples' productivity, assume an economy with 4 goods. Using the formula above, people would have to deal with 6 individual exchange ratios, namely:

  X1 : X2 = 1 : 2 X2 : X3 = 2 : 3
  X1 : X3 = 1 : 3 X2 : X4 = 2 : 4
  X1 : X4 = 1 : 4 X3 : X4 = 3 : 4

Let us use X1 as the unit of account. Then we have:

X2 = 2 X1
X3 = 3/2 X2 = 3 X1
X4 = 4/3 X3 = 4 X1.

Using money as a numéraire reduces the number of exchange ratios to three. If we had 100 goods, people in a barter economy would need to know 4950 individual exchange ratios. Using money as the unit of account, however, this number declines to 99.

- A modern economy – characterized by division of labor and free trade – could *not do without money*:

"[M]oney calculation … provides a guide amid the bewildering throng of economic possibilities. It enables us to extend judgements of value which apply directly only to consumption goods – or at best to production goods of the lowest order – to all goods of higher orders. Without it, all production by lengthy and roundabout processes would be so many steps in the dark."
—Mises (1981), Socialism, p. 100-1.

- On the different types of money

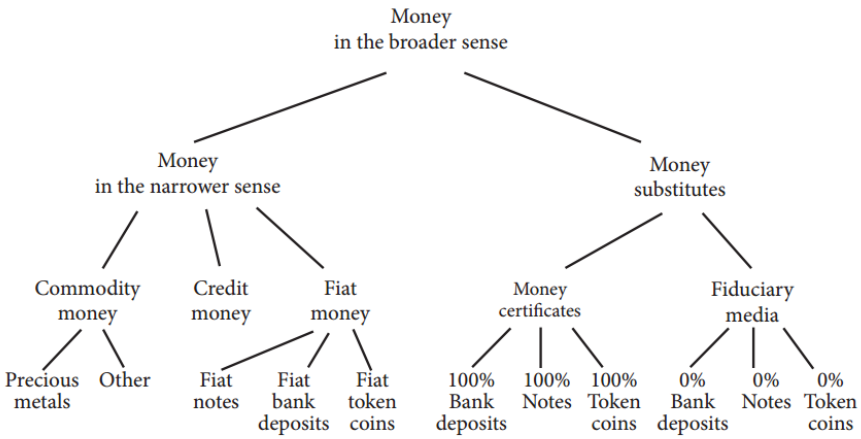


Figure 2
CLASSIFICATION OF MONETARY GOODS ACCORDING TO MISES
(ELABORATED FROM HÜLSMANN 2007, P. 216)

OPTIMUM STOCK OF MONEY

- Is there an optimal stock of money? Should the money supply grow in accordance with, for instance, increases in population and trading activities, or by a rate that keeps the price level stable?

- Other goods have various utilities, so that one can say that an increase in their supply satisfies more consumer wants. This is indeed different with money. Money has only utility for (prospective) exchange*: a rise in the money stock does not confer a social benefit*.

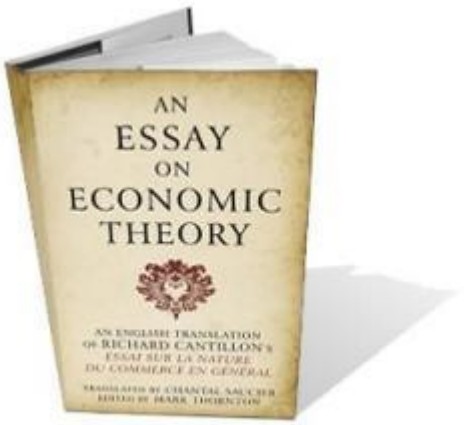
- All an increase in the quantity of money does is lowering the purchasing power of the money unit (compared to a situation in which the quantity of money had remained constant).

- Any given quantity of money is sufficient to financing the turnover of goods and services. A large quantity of money leads to (other things being equal) to high prices (a high price level), a small quantity to low prices.

- The finding is, as Rothbard noted, that "(…) it doesn't matter what the supply of money is. *Any supply will do as well as any other supply*. The free market will simply adjust by changing the purchasing power, of effectiveness of the gold-unit. There is no need to tamper with the market in order to alter the money supply that it determines."
  —Rothbard (2010), What Has Government Done to Our Money?, p. 25.

THE CANTILLON EFFECT

- An increase in the quantity of money can never be "neutral", it always affects the interpersonal distribution of income and wealth in the economy: some benefit from an increase in the quantity of money, others suffer losses. This insight is called the "Cantillon effect".



- The first (early) receivers of the new money benefit. They can exchange their new money balances against vendible items at *unchanged prices*. As the new money is passed on, the prices of goods start to rise (that is, they will be higher compared with a situation in which the quantity of money had remained unchanged).

- The late receivers of the newly created money (or those who do not get their hands on the new money) suffer losses: They can buy goods and services only at *elevated prices*. – The fact that an increase in the quantity of money can *never be neutral* can be explained by integrating money into the marginal value theory.

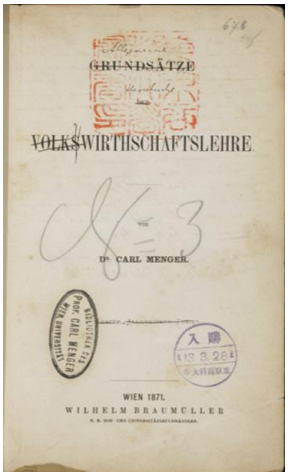
5. The origin of money, and the regression theorem

THE PURPOSE OF THIS SESSION:

You will learn (1) that money emerged spontaneously out of the free market and from a commodity and (2) why this must be *logically* so.

READINGS:

Mises, L. v. (1996), Human Action, 4th ed., Fox & Wilkes, pp. 408 – 410; Rothbard, M. N. (2009 [1962]), Man, Economy, and State, 2nd ed., Ludwig von Mises Institute, Auburn, US Alabama, pp. 268 – 276.



ORIGIN OF MONEY

- In his book *Principles of Economics*, published in 1871, Carl Menger (1840–1921) laid out a theory of the origin of money. The starting point for Menger's historic-evolutionary theory of the origin of money is the notion that people in a *free market economy* – characterized by private property, division of labor and free trade – would recognize the benefits of using a universally accepted medium of exchange.

- In a barter economy, self-interested individuals would be reluctant to surrender real goods and services in exchange for intrinsically worthless goods (such as pieces of paper).

- In an original state of barter, goods would have different degrees of marketability or saleability. The more saleable a good, the more easily its owner could exchange it for other goods at an economic price. Over time, Menger argued, the most saleable goods were desired by more and more traders because of this advantage. But as more people accepted these goods in exchange, the more saleable they became.

- Eventually, certain goods outstripped all others in terms of their marketability, and became universally accepted in the exchange of all other goods. At this point, money had emerged on the market. Money emerged *spontaneously* through the self-interested actions of individuals.

- No single person conceived of a universal medium of exchange, no government compulsion was necessary to transform a barter economy into a money economy. Money as a universally accepted means of exchange must have naturally emerged from a *commodity*:

> "The origin of money … is, as we have seen, entirely natural and thus displays legislative influence only in the rarest instances. Money is not an invention of the state. It is not the product of a legislative act. Even the sanction of political authority is not necessary for its existence. Certain commodities came to be money quite naturally, as the result of economic relationships that were independent of the power of the state."
> —Menger (2007 [1871], Principles of Economics, pp. 261-2.

THE REGRESSION THEOREM

- In 1912, Mises logically explained why money could only originate in this way – that is by free market forces and out of a commodity –, by putting forward his *regression theorem*, which also allowed applying the marginal utility theory to money.

- The values individuals assign to non-money consumption and investment goods are, as a rule, independent and prior to market prices. This is different with money.

- Money is held not for direct use but for exchanging it against other goods. It is not useful in itself but because it has been, and therefore is expected to remain, exchangeable against other goods. In that sense, money is demanded because it has a *pre-existing purchasing power*: People demand money because it has already had an exchange value in the past.

- According to this viewpoint, the value of money on, say, day *t*, depends on the interplay between the supply of and demand for money on that very day. However, with people demanding money because it has already functioned as money in the past, today's value of money must depend on the exchange value of money on the previous day, *t*–1.

- Such an explanation seems to run into an *infinite regress*: the value of money on any day would have to be explained by its purchasing power on the previous day. But how can this price be explained? Mises broke out of the *circularity problem* by bringing the argument back to the point in time when today's money commodity served only as a non-money commodity in a barter system.

- As we *regress backwards in time*, one eventually arrives at the point in time when people first began to use gold as a medium of exchange. Let's consider the *first day* on which people passed from the system of pure barter and began to use a commodity (gold) as a medium of exchange:

  — On that *first day*, the gold price had a *time component*: namely gold's marginal utility as determined on the previous day, established through barter.

  — If we regress to the *last day of barter*, the gold price had *no time components*. It was determined solely by the marginal utility of gold on that day; and the marginal utility of gold was determined by its non-monetary purposes.

- As a result, the demand for money can be pushed back to the last day of barter, at which point the temporal element in the demand for commodity money disappears, and the causal forces in the today's demand and purchasing power of money are fully explained.

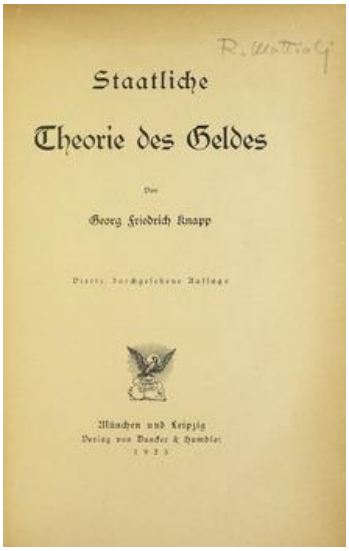
- Mises's regression theorem logically explains why money must have originated on the market. No money could have originated by government decree (or *social contract*, for that matter). This is because money could not have a pre-existing purchasing power, driving individuals' demands for it.

- What is more, the regression theorem allows explaining why, in peoples' daily transactions, money proper (such as, for instance, gold), once established through the free market proc1ess, can be easily replaced by circulating paper certificates, book entries, etc., because the historical connection to a previous day's valuation would be preserved.

- Mises's regression theorem corresponds to Menger's theory on the spontaneous emergence and evolution of money. As such, the regression theorem is of utmost importance in any project for reforming the monetary system. It explains why in this field there can be no "leaps in the dark," attempts to introduce ex novo monetary systems which are not the result of evolution and which would inevitably be condemned to failure.

THE 'STATE THEORY OF MONEY'

- It is fair to say that in today's economics *Knapp's state theory of money* dominates over the theory as put forward by Menger and Mises.

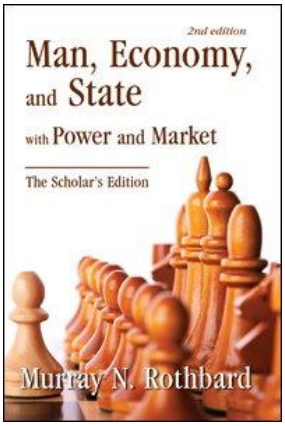


Georg Friedrich Knapp (1905)
1842 – 1926

6. The value of money, and on inflation and deflation

THE PURPOSE OF THIS SESSION:
You will learn that (1) money is a good like any other, (2) that it is subject to the law of diminishing marginal utility, and (3) that the terms *inflation* and *deflation* run counter to praxeological thinking.

READINGS:
Rothbard (2009), Man, Economy, and State, The Scholar's Edition, pp. 21 – 33: Rothbard, M. N. (2008), The Mystery of Banking, pp. 15 – 41; Mises, L. v. (1998), Human Action, pp. 220 – 229, and pp. 419 – 421.



The diminishing marginal utility

- As far as the concept of *marginal utility* is concerned, the important consideration is the relation between the unit to be acquired, or given up, and the quantity of supply (stock) *already available* to the actor:

  — If no units of a good (whatever that good may be) are available, the first unit will satisfy the *most urgent wants* that such a good is capable of satisfying.
  — If to the supply of one unit a second unit is added, it will fulfil the *most urgent want remaining* (which is less urgent than the one satisfied with the first unit).

  — The value of the second unit to the actor will be less than the value of the first unit.

- We know that human action implies that means a scarce. Form this insight it follows that a greater supply of means is preferred over a smaller supply of means; or that an earlier satisfaction of wants is preferred over a later satisfaction of wants – because time is a means and thus scarce.

- "There are, then, two laws of utility, both following from the apodictic conditions of human action: first, that *given the size of a unit of a good, the (marginal) utility of each unit decreases as the supply of units increases; second, that the (marginal) utility of a larger-sized unit is greater than the (marginal) utility of a smaller sized unit*. The first is the law of diminishing marginal utility. The second has been called the law of increasing total utility. The relationship between the two laws and between the items considered in both is purely one of rank, i.e., ordinal."
  —Rothbard (2009), Man, Economy, and State, p. 314.

- Let us look at an individual's *value scale*, which may look like this:

3 eggs
2 eggs
1 egg
2nd egg
3rd egg

The higher the ranking on the value scale, the higher the value. By the *second law*, 3 eggs are valued more highly than 2 eggs, and 2 eggs are valued more highly than 1 egg. By the first law, 2nd egg is ranked below the first egg, and the 3rd egg below the 2nd egg.

- The *law of diminishing marginal utility can be logically derived from the axiom of human action*, it is *irrefutably true*; and it is *not* related the *psychology*, it is a (praxeo-)logical law:

"In treating marginal utility we deal neither with sensuous enjoyment nor with saturation and satiety. We do not transcend the sphere of praxeological reasoning in establishing the following definition: We call that employment of a unit of a homogeneous supply which a man makes if his supply is n units, but would not make if, other things being equal, his supply were only n–1 units, the least urgent employment or the marginal employment, and the utility derived from it marginal utility. In order to attain this knowledge we do not need any physiological or psychological experience, knowledge, or reasoning. It follows necessarily from our assumptions that people act (choose) and that in the first case acting man has n units of a homogeneous supply and in the second case n–1 units. Under these conditions no other result is thinkable. Our statement is formal and aprioristic and does not depend on any experience."
—Mises (1996), Human Action, p. 124.

The diminishing marginal utility of money

- Money is a good like any other good, and it is the most marketable, the most liquid good. As such, it is subject to the law a diminishing marginal utility.

- As a means of exchange, money's value is its *purchasing power*: The number of goods and services which can be acquired by surrendering a money unit.

- As the quantity of money an individual actor holds *increases* (other things being equal), the marginal utility of the received money unit *decreases*: The additional money units can only be exchanged against goods which are valued less highly than the goods that are to be obtained had the quantity of money *n* amounted to just *n* – 1 units.

- Consider the following *value scale* of Mr Jones:

3.4 grains of gold
3.3 " " "
(1st suit)
3.2 " " "
3.1 " " "
(2nd suit)
3.0 " " "
2.9 " " "
2.8 " " "
(3rd suit)
2.7 " " "

The market price of a suit is 2.9 grains of gold per suit. Mr Jones *will*

buy up to the last unit at which the diminishing marginal utility that the suit has for him exceeds the increasing marginal utility of money. The rank of the second suit is still considerably above the rank of the 2.9 grains.
—Rothbard (2001), Man, Economy, and State, p. 260-8.

- An increase in the quantity of money leads to prices that a higher compared with a situation in which the quantity of money had remained unchanged:

  "An increase in a community's stock of money always means an increase in the amount of money held by a number of economic agents … . For these persons, the ratio between the demand for money and the stock of it is altered; they have a relative superfluity of money and a relative shortage of other economic goods. The immediate consequence of both circumstances is that the marginal utility to them of the monetary unit diminishes. This necessarily influences their behaviour in the market. They are in a stronger position as buyers. They will now express in the market their demand for the objects they desire more intensively than before; they are able to offer more money for the commodities that they wish to acquire. It will be the obvious result of this that the prices of the goods concerned will rise, and that the objective exchange-value of money will fall in comparison."
  —Mises (1953), Theory of Money and Credit, p. 139.

  "Since the increased quantity of money is received in the first place by a limited number of economic agents only and not by all, the increase of prices at first embraces only those goods that are demanded by these persons; further, it affects these goods more than it afterwards affects any others. When the increase of prices spreads farther, if the increase in the quantity of money is only a single transient phenomenon, it will not be possible for the differential increase of prices of these goods to be completely maintained; a certain degree of adjustment will take place. But there will not be such a complete adjustment of the increases that all prices increase in the same proportion. The prices of commodities after the rise of prices will not bear the same relation to each other as before its commencement; the decrease in the purchasing power of money will not be uniform with regard to different economic goods."
  —Mises (1953), Theory of Money and Credit, p. 140.

On the value of money

- Mises distinguishes between: (i) *objective use value* (objektiver Tauschwert), (ii) *subjective use value* (subjektiver Gebrauchtswert) and (iii) *subjective exchange value* (subjektiver Tauschwert).

  „Subjektiver Gebrauchswert und subjektiver Tauschwert, bei den Waren zwei verschiedene Begriffe, fallen beim Gelde zusammen. Beide führen auf seinen objektiven Tauschwert zurück. Denn der Nutzen des Geldgebrauches ist durch die Möglichkeit, im Austausche für das Geld andere wirtschaftliche Güter zu erlangen, völlig erschöpft. Keine Funktion des Geldes als Geld ist denkbar, die von der Tatsache seines objektiven Tauschwertes losgelöst werden konnte. Für den Gebrauchswert der Ware ist es belanglos, ob sie auch Tauschwert hat oder nicht; für den Gebrauchswert des Geldes ist das Vorhandensein des Tauschwertes unumgängliche Voraussetzung. Diese Besonderheit der Geldwertgestaltung kann man auch in der Weise ausdrücken, daß man dem Gelde den subjektiven Gebrauchswert in der Einzelwirtschaft überhaupt abspricht und ihm bloß subjektiven Tauschwert zugesteht."
  —Mises (1924), Theorie des Geldes und der Umlaufsmittel, p. 93-4.

MONEY DOES NOT MEASURE VALUE

- It is impossible to measure value:

  "It is important to realize that there is never any possibility of measuring increases or decreases in happiness or satisfaction. Not only is it impossible to measure or compare changes in the happiness of any given person. In order for any measurement to be possible, there must be an eternally fixed and objectively given unit with which other units may be compared. There is no such objective unit in the field of human valuation. The individual must determine subjectively for himself whether he is better or worse off as a result of any change. His preference can only be expressed in terms of simple choice, or rank. Thus, he can say, "I am better off" or "I am happier" because he went to a concert instead of playing bridge (or "I will be better off" for going to the concert), but it would be completely meaningless for him to try to assign units to his preference and say, "I am two and a half times happier because of this choice than I would have been playing bridge." Two and a half times what? There is no possible unit of happiness that can be used for purposes of comparison and, hence, of addition or multiplication. Thus, values cannot be measured; values or utilities cannot be added, subtracted, or multiplied. They can only be ranked as better or worse. A man may know that he is or will be happier or less happy, but not by "how much," not by a measurable quantity."
  —Rothbard (2009), Man, Economy, and State, p. 19.

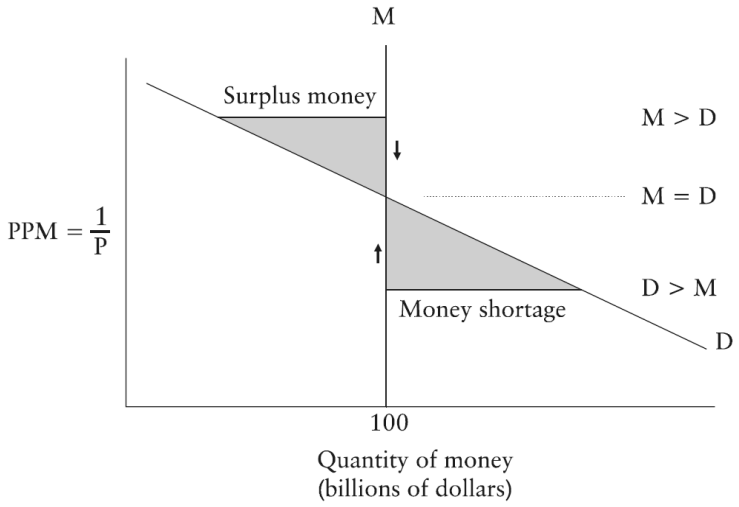
- Money prices (say, 1 US$ for an apple) represent an *objective exchange ratio* between money and a vendible item. However, *money prices do not represent values* the individuals assign to the goods bought and sold.

- On the purchasing power of money (PPM): Conceptually speaking, the *PPM* is the inverse of whatever we can construct as the (imaginary) price level:

  $PPM = 1/P$,

  where P is the price level of a good.

- The higher (lower) P is, the lower (higher) is the *PPM*, and there should be a falling demand curve for money in relation to hypothetical *PPM*s (just as there is one in relation to hypothetical individual prices).

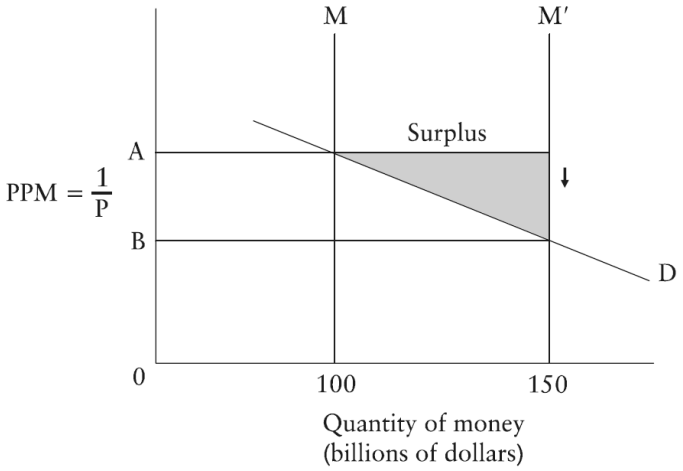


— If money demand (*D*) is smaller than money supply (*M*), so that $D < M$, the difference is *surplus cash balances*. People realise that their cash balances are greater than the level they need at that prevailing prices. They start spending money on goods and services.

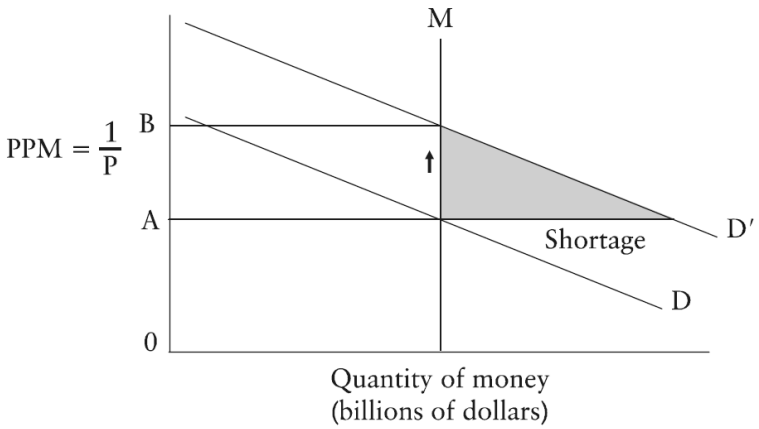
— While people can get rid of *excess* money *individually* by buying things with it, *they can't get rid of money in the aggregate*. As people spend, the demand for goods and services rises, and prices go up. But as overall prices rise further and further, *PPM* begins to fall, until a new equilibrium is reached where $D = M$.

— Suppose that prices were suddenly much higher and the *PPM* therefore much lower. People would need more cash balances to finance their daily lives, and there would be a shortage of cash balances compared to the supply of money available ($D > M$). They would then try to add to their cash balances, and they can only do so by spending less of their income and adding the remainder to their cash balance. Prices will fall, and the *PPM* will rise, with the equilibrium is $D = M$.

— Now consider the case in which there is an increase in *M* (from *M* to *M'*), so that $M' > D$, brings about a process of rising prices, thereby lowering the *PPM*. This, in turn, increases the demand for money, bringing it into line with the increased stock of money.



— An increase in the demand for money (so that $D > M$), brings about a shortage of cash balances. People will start selling goods and services, which, in turn, will lower prices. As the *PPM* rises, money demand declines. In the new equilibrium, *PPM* is higher than it was before the demand for money increased.



ON INFLATION (AND DEFLATION)

- In *mainstream economics*, inflation is usually defined as an ongoing *rise* in a (consumer) price index (of no more than, say, 2 or 3 percent per annum). Such a concept is based on the *price index regime* as put forward by Irving Fisher (1867–1947).

- "The notions of inflation and deflation are not praxeological concepts. They were not created by economists, but by the mundane speech of the public and of politicians. The implied the popular fallacy that there is such a thing as neutral money or money of stable purchasing power and that should money should be neutral and stable in purchasing power. (…) However, those applying these terms are not aware of the fact that purchasing power never remains unchanged and that consequently there is always inflation or deflation."
  —Mises (1996), Human Action, p. 422.

- From a praxeological viewpoint, any increase (decrease) in the money stock must necessarily decrease (increase) the value of the money unit (that is its marginal utility) from the individual viewpoint.

  ⟶ Money is a good, and as such money falls under the law of diminishing marginal utility. As the quantity of money in the hands of Mr X changes, he would attach a different rank-value to the money unit. Thus, the idea of stable-valued money must be considered a praxeological impossibility.

- Nowadays, deflation is much more feared than inflation. Hayek (in The Constitution of Liberty, 1960, p. 330) gives an explanation of why this is the case:

  "The difference between inflation and deflation is that, with the former, the pleasant surprise comes first and the reaction later, while, with the latter, the first effect on business is depressing." As a result, "[T]he chief source of the existing inflationary bias is the general belief that deflation, the op-

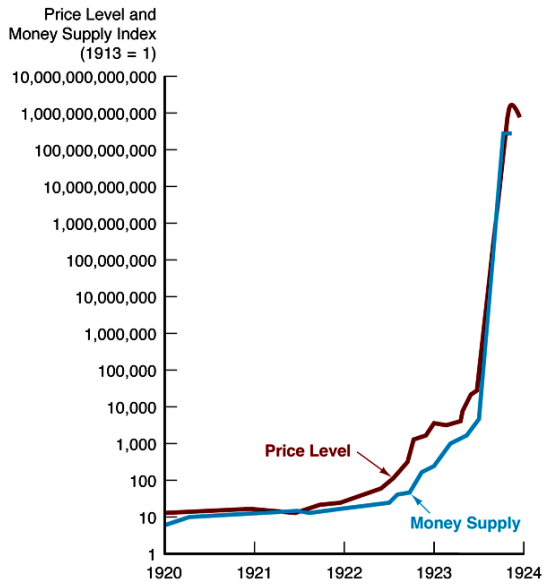
posite of inflation, is so much more to be feared that, in order to keep on the safe side, a persistent error in the direction of inflation is preferable." "[T]he determination to avoid deflation at any cost must result in cumulative inflation."

- Rothbard explains the *inflation bias* by pointing towards influential special interest groups:

  "The commercial banks live and profit by expanding credit and creating a new money supply; so they are naturally inclined to do so, "to monetize credit", if they can. The government also wishes to inflate, both to expand its own revenue (either by printing money or so that the banking system can finance government deficits) and to subsidize favoured economic and political groups through a boom and cheap credit."
  —Rothbard (2006), For A New Liberty, p. 232.

DIGRESSION: GERMAN HYPERINFLATION 1920 – 1923

SUGGESTED READINGS: Tables taken from: Graham, F. D. (1967 [1930]), Exchange, Prices, and Production in Hyper-Inflation Germany, 1920 - 1923, Princeton University Press.



- The cause of *hyperinflation* is ever higher growth rates of the money stock, or: money growth rates spinning out of control. The *symptoms* of hyperinflation are ever higher increases in prices.

- "Inflationist policy is never the necessary consequence of a specific economic situation. It is always the product of human action—of man-made policy. For whatever the reason, the quantity of money in circulation is increased."
  —Mises (2006), Stabilization of the Monetary Unit—From the Viewpoint of Theory, p. 38.

- Mises had a clear understanding of the very *forces that led to German hyperinflation*: namely political-economic considerations. Mises saw that, at some stage, the *printing up ever greater amounts of new money* can be, politically speaking, the most attractive funding strategy for the government:

"We have seen that if a government is not in a position to negotiate loans and does not dare levy additional taxation for fear that the financial and general economic effects will be revealed too clearly too soon, so that it will lose support for its program, it always considers it necessary to undertake inflationary measures. Thus inflation becomes one of the most important psychological aids to an economic policy which tries to camouflage its effects. In this sense, it may be described as a tool of antidemocratic policy. By deceiving public opinion, it permits a system of government to continue which would have no hope of receiving the approval of the people if conditions were frankly explained to them."
—Mises (2006), Stabilization of the Monetary Unit—From the Viewpoint of Theory, p. 38.

TABLE I

EXPENDITURES, REVENUES OTHER THAN FROM SHORT-TERM BORROWING, AND DEFICITS OF THE REICH: 1914–1919

(*Billions of marks*)

FISCAL YEAR (APRIL 1–MARCH 31)	EXPENDITURES	REVENUES OTHER THAN FROM SHORT-TERM BORROWING	DEFICITS (COVERED BY SHORT-TERM BORROWING)
1914–1915	9.6	8.2	1.4
1915–1916	26.7	24.0	2.7
1916–1917	28.8	24.6	4.2
1917–1918	53.3	37.1	16.2
1918–1919	45.5	34.2	11.3
Totals	163.9	128.1[12]	35.8

[12] Of this amount approximately 97 billion marks had been obtained through long-term loans.

Sources of data: (1) *Statistisches Jahrbuch* 1919, Verlag von Puttkamer und Mühlbrecht, Berlin, 1919, *passim*. (2) *Verwaltungsbericht der Reichsbank* 1918, Reichsdruckerei, Berlin, 1919, p. 11.

TABLE II

NATIONAL DEBT OF GERMANY, ISSUES OF PAPER CURRENCY, INDEX OF WHOLESALE PRICES, AND INDEX OF DOLLAR EXCHANGE RATES AGAINST PAPER MARKS; 1914–1918

(*Value figures in millions of marks*)

YEAR	TOTAL DEBT (END OF MARCH OF THE SUCCEEDING YEAR)	TOTAL ISSUES OF PAPER CURRENCY (EXCEPT EMERGENCY MONEY) (END OF YEAR)	INDEX OF WHOLESALE PRICES 1913=1 (END OF YEAR)	INDEX OF DOLLAR EXCHANGE RATES IN BERLIN 1913=1 (END OF YEAR)
1914	5,158	5,862	1.25	1.07
1915	16,955	8,360	1.48	1.23
1916	39,856	11,438	1.51	1.36
1917	69,211	18,245	2.03	1.35
1918	105,304	32,937	2.45	1.97

Sources of data: (1) *European Currency and Finance*, Vol. I, pp. 533-5, 540. (2) *Zahlen zur Geldentwertung in Deutschland* 1914 *bis* 1923, pp. 6, 45.

- In *Age of Inflation* (1979), reviewing Germany's hyperinflation from a political-economic viewpoint, Hans F. Sennholz asked (p. 80): "Who would inflict on a great nation such evil which had ominous economic, social, and political ramifications not only for Germany but for the whole world?"

- Sennholz's sobering answer was (1979, p. 80): "[E]very mark was printed by Germans and issued by a central bank that was governed by Germans under a government that was purely German. It was German political parties, such as the Socialists, the Catholic Centre Party, and the Democrats, forming various coalition governments that were solely responsible for the policies they conducted. Of course, admission of responsibility for any calamity cannot be expected from any political party."

TREASURY BILLS DISCOUNTED BY THE REICH, ISSUES OF PAPER CURRENCY, INDEX OF WHOLESALE PRICES, AND INDEX OF DOLLAR EXCHANGE RATES AGAINST PAPER MARKS; 1919-1923

(Value figures in millions of marks)

END OF MONTH	TOTAL AMOUNT OF TREASURY BILLS DISCOUNTED BY THE REICH[19]	TOTAL ISSUES OF PAPER CURRENCY (EXCEPT EMERGENCY CURRENCY)	INDEX OF WHOLESALE PRICES[20] 1913=1	INDEX OF DOLLAR EXCHANGE RATES IN BERLIN[21] 1913=1
1919 Dec.	86,400	50,065	8.03	11.14
1920 June	113,200	68,154	13.82	9.17
Dec.	152,800	81,387	14.40	17.48
1921 June	185,100	84,556	13.66	17.90
Dec.	247,100	122,497	34.87	43.83
1922 June	295,200	180,169	70.30	89.21
July	308,000	202,626	100.59	159.60
Aug.	331,600	252,212	192.00	410.91
Sept.	451,100	331,876	287.00	393.04
Oct.	603,800	484,685	566.00	1,071.94
Nov.	839,100	769,500	1,154.00	1,822.30
Dec.	1,495,200	1,295,228	1,475.00	1,750.83
1923 Jan.	2,081,800	1,999,600	3,286.00	11,672.00
Feb.	3,588,000	3,536,300	5,257.00	5,407.00
Mar.	6,601,300	5,542,900	4,827.00	4,996.00
April	8,442,300	6,581,200	5,738.00	7,099.00
May	10,275,000	8,609,700	9,034.00	16,556.00
June	22,019,800	17,340,500	24,618.00	36,803.00
July	57,848,900	43,813,500	183,510.00	262,030.00
Aug.	1,196,294,700	668,702,600	1,695,109.00	2,454,000.00
Sept.	46,716,616,400	28,244,405,800	36,223,771.00	38,113,000.00
Oct.	6,907,511,102,800	2,504,955,700,000	18,700,000,000.00	17,270,129,000.00
Nov.	191,580,465,422,100[19]	400,338,326,400,000	1,422,900,000,000.00	1,000,000,000,000.00
Dec.	1,232,679,853,100	496,585,345,900,000	1,200,400,000,000.00	1,000,000,000,000.00

[19] Practically all government borrowing after 1919 was in the form of discounted Treasury bills. The figure for November 1923 is as of the 15th of that month.

[20] In the index number of wholesale prices from December 1919 to December 1922 inclusive, the figures represent monthly averages. From January to June, 1923, statistics are available for specific days three times a month, and from July to December, 1923, weekly. The figures in the table are for the latest available date in each month.

[21] The December 1919 figure for the index number of exchange rates is a monthly average. All other figures for this index are end-of-month quotations.

Sources of data: (1) *Zahlen zur Geldentwertung in Deutschland* 1914 *bis* 1923; Statistisches Reichsamt, Verlag von Reimar Hobbing, Berlin, 1925, pp. 6-10, 16-18, 46-7. (2) *Germany's Economy, Currency and Finance*, Zentral-Verlag G.m.b.H., Berlin, 1924, p. 63.

Source: Graham, F. D. (1967 [1930]), Exchange, Prices, and Production in Hyper-Inflation Germany, 1920 - 1923, Princeton University Press, p. 7 and 13.

7. Fractional reserve and central banking

THE PURPOSE OF THIS SESSION:
You will (1) learn about the kind of contracts people strike with their bank, (2) analyze how 'free banking' works, and (3) understand what 'fractional reserve banking' really means.

READINGS:
Huerta de Soto, J. (2006), Money, Bank Credit, and Economic Cycles, Ludwig von Mises Institute, Auburn, US Alabama, pp. 1 – 36.

HOLDING MONEY WITH A BANK

ESSENTIAL DIFFERENCES BETWEEN TWO RADICALLY DIFFERENT DISTINCT CONTRACTS

Monetary Irregular Deposit	*Monetary Loan*
Economic Differences	
1. Present goods are not exchanged for future goods.	1. Present goods are exchanged for future goods.
2. There is complete, continuous availability in favor of the depositor.	2. Full availability is transferred from lender to borrower.
3. There is no interest, since present goods are not exchanged for future goods.	3. There is interest, since present goods are exchanged for future goods.
Legal Differences	
1. The essential element (and the depositor's main motivation) is the *custody* or safekeeping of the *tantundem*.	1. The essential element is the transfer of availability of the present goods to the borrower.
2. There is no term for returning the money, but rather the contract is "on demand."	2. The contract requires the establishment of a *term* for the return of the loan and calculation and payment of interest.
3. The depositary's obligation is to keep the *tantundem* available to the depositor at all times (100-percent cash reserve).	3. The borrower's obligation is to return the *tantundem* at the end of the term and to pay the agreed-upon interest.

Source: Huerta de Soto, J. (2007),
Money, Bank Credit, and Economic Cycles, p. 19.

"Given the economic foundation of the monetary irregular deposit contract, which does not imply the exchange of present goods for future goods, the uninterrupted availability in favor of the depositor and the incompatibility with an interest agreement arise logically and directly from the legal essence of the irregular deposit contract, which contrasts sharply with the legal essence of the loan contract."
—Huerta de Soto (2006), Money, Bank Credit, and Economic Cycles, pp. 16-7.

DEPOSIT BUSINESS IN A MONEY WAREHOUSE REGIME

Fig. 1a

Assets	Balance sheet of A		Liabilities
Gold stock (ounces)	100		
	-100		
Money warehouse receipts	+100		
	Σ 100		Σ 100

Fig. 1b

Money warehouse	
Custody: Gold ounces	+100
(Warehouse receipt issued	*+100)*

PURCHASING GOODS AND SERVICES

Fig. 1a

Assets	Balance sheet of A		Liabilities
Warehouse receipt	100		
	-100		
Goods	+100		
	Σ 100		Σ 100

Fig. 1b

Assets	Balance sheet of B		Liabilities
Goods	100		
	-100		
Warehouse receipt	+100		
	Σ 100		Σ 100

Fig. 1c

Money warehouse	
Custody: Gold ounces	+100
(Warehouse receipt issued	*+100)*

LENDING UNDER A MONEY WAREHOUSE REGIME

(a) Direct lending

Fig. 1a

Assets	Balance sheet of *A*		Liabilities
Warehouse receipt	100		
	-100		
Loan to *B*	+100		
	Σ 100		Σ 100

Fig. 1b

Assets	Balance sheet of *B*		Liabilities
Warehouse receipt	+100	Liability to *A*	+100
	Σ 100		Σ 100

Fig. 1c

Money warehouse	
Custody: Gold ounces	+100
(Warehouse receipt issued	*+100)*

(b) Indirect lending

Fig. 1a

Assets	Balance sheet of *A*		Liabilities
Warehouse receipt	100		
	-100		
Long-term claim on bank	+100		
	Σ 100		Σ 100

Fig. 1b

Assets	Balance sheet of *B*		Liabilities
Warehouse receipt	+100	Liability vis-a-vis bank	+100
	Σ 100		Σ 100

Fig. 1c

Assets	Bank		Liabililities
Warehouse receipt	+100	Liability vis-à-vis *A*	+100
	-100		
Loan to *B*	+100		
	Σ 100		Σ 100

Fig. 1d

Money warehouse	
Custody: Gold ounces	+100
(Warehouse receipt issued	*+100)*

MONEY CREATION UNDER FRACTIONAL RESERVE BANKING

Fig. 1a

Assets	Balance sheet of A		Liabilities
Gold stock (ounces)	100		
	-100		
Money substitute	+100		
	Σ 100		Σ 100

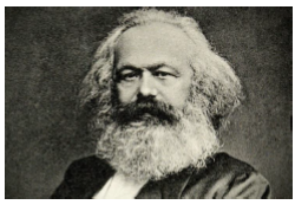
Fig. 1b

Assets	Balance sheet of B		Liabilities
Warehouse receipts	+80	Liabilities	+80
	Σ 80		Σ 80

Fig. 1c

Assets	Balance sheet of the money warehouse		Liabilities
Gold stock A (ounces)	+100	Warehouse receipts	+100
Loan to B	+80		+80
	Σ 180		Σ 180

Central banking



Karl Marx
1818 – 1883

Das staatliche Geldproduktionsmonopol – eine marxistische Idee:

„5. Zentralisation des Kredits in den Händen des Staats durch eine Nationalbank mit Staatskapital und ausschließlichem Monopol."

Manifest der Kommunistischen Partei
(1847/1948)

- "The Central Bank has always had two major roles: (1) to help finance the government's deficit; and (2) to cartelize the private commercial banks in the country, so as to help remove the two great market limits on their expansion of credit, on their propensity to counterfeit: a possible loss of confidence leading to bank runs; and the loss of reserves should any one bank expand its own credit. For cartels on the market, even if they are to each firm's advantage, are very difficult to sustain unless government enforces the cartel. In the area of fractional-reserve banking, the Central Bank can assist cartelization by removing or alleviating these two basic free-market limits on banks' inflationary expansion credit."
—Rothbard, M. N. (1994), The Case Against the Fed, p. 58.

8. A brief history of money and the gold standard

THE PURPOSE OF THIS SESSION:
You will learn (1) about various monetary regimes that prevailed in the past, (2) understand how gold money worked, and (3) why and how money was severed from gold.

READINGS:
Rockwell, L. H. (1985), The Gold Standard, An Austrian Perspective, Lexington Books, Lexington, Massachusetts/Toronto; Rothbard, M. N. (1990 [1963]), What has government done to our money? Ludwig von Mises Institute, Auburn, US Alabama, Chapter IV. "The Monetary Breakdown of the West"

OVERVIEW

Phase I: 1815 – 1914, the *classical gold standard*

Phase II: World War I and shortly thereafter

Phase III: 1926 – 1931, the *gold-exchange standard*

How the gold-exchange standard worked

Assets	US bank		Liabilities
Gold (in US$)	100	Demand deposits (US client)	100
			-100
		Demand deposit (UK bank)	*+100*
	S100		S100

A US client deposits US$100 gold with a US bank

A US non-bank imports from the UK for US$100

Assets	UK bank		Liabilities
Accounts receivables	100	Demand deposits (UK client)	100
(*thereof: excess reserves*	*+100*		
Loans	*+100*	Demand deposits (UK client)	*+100*
			-100
		Demand deposits (German client)	+100
	S200		S200

The UK bank uses the excess reserve for making loans of £100

A UK non-banks imports from Germany for £100

Assets	German bank		Liabilities
Accounts receivables	100	Demand deposits (German client)	100
(*thereof: excess reserves*	*+100*		
Loans	*+100*	Demand deposits (German client)	*+100*
	S200		S200

The German bank uses the excess reserves for making loans

The result of the US dollar exchange standard is a 'multiple money and credit expansion': the money stock rises to US$300, whereas the stock of 'money proper' is US$100.

Legend: Assuming that the exchange rate between US$, Britisch Pound Sterling and German mark is 1:1.

US dollar (and British Pound) can be used as reserves for credit and money creation.

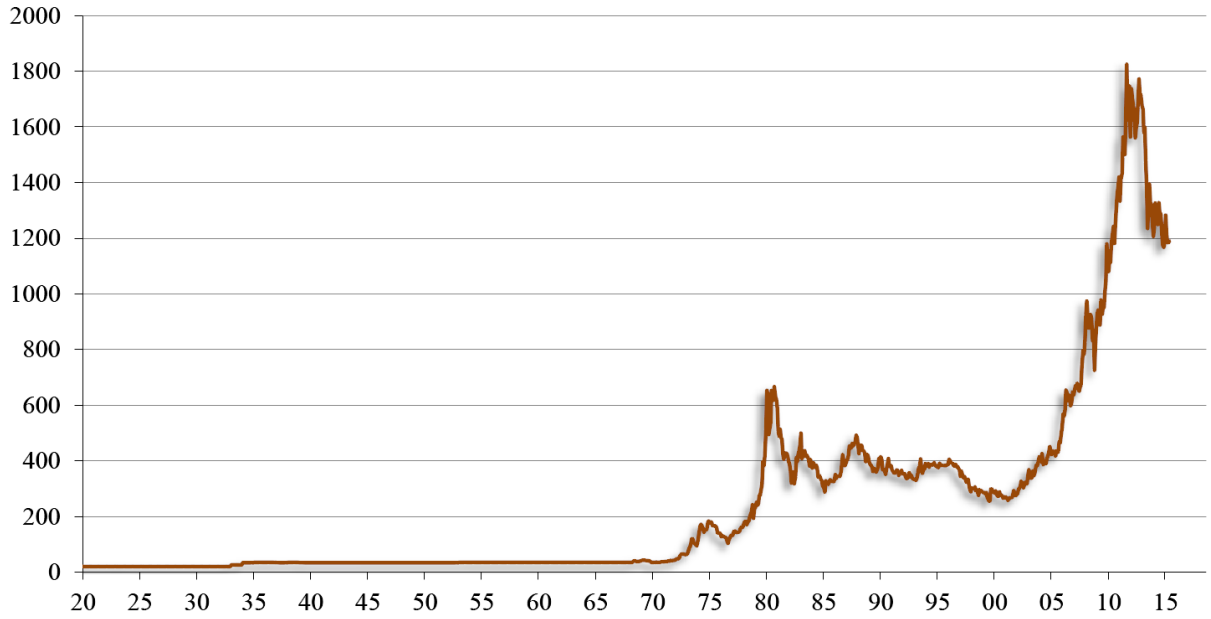
Phase IV: 1931 – 1945, fluctuating fiat currencies

Phase V: 1945 – 1968, the *System of Bretton Woods*

Phase VI: 1968 – 1971, the demise of the System of Bretton Woods

Phase VII: As from August 1971, unfettered fiat money systems

Gold price (US$ per ounce), 1920 to 2015



Source: Bloomberg.

GOLD MONEY

- Under a *gold standard*, gold is (the freely chosen) money: *gold is money*. Gold *coins* and *money substitutes* (or: *paper notes*) are used as a means of exchange, with the latter exchangeable *at par* at any point in time into physical gold.

⟶ Money (the *US dollar*, for instance) would be defined as being equal to a (pre-determined) physical quantity of physical gold: For instance, 35 US dollar equal one ounce of gold (which is around 31.1 grams).

- Under a *gold specie standard* gold coins circulate as money (in conjunction with subsidiary coinage (made from a lesser valuable metal) and banknotes). Under a *gold bullion standard*, gold coins do not circulate, but circulating currency (banknotes) is exchanged against gold bars on demand at a fixed price.

- Once an international gold standard is in place, *exchange rates are fixed*. Assume, for instance, that 20.67 US dollar equal one ounce of gold, and that 7.38 British Pound Sterling equal one ounce of gold. In this case, 2.80 US dollar exchange for one British Pound Sterling.

⟶ The *gold points*, however, would determine the lower and upper limits of transferring gold from one to the other country (costs of shipping gold).

- Under a true gold standard, money warehouses serve as *deposit institutions*. Money warehouses are active in the business of custodian services and payments/settlement.

- The *credit business* (or: lending business, taken care of by banks) is (strictly) separated from the money warehouse business.

- Under an international gold standard, *international payments* are made in (the *physical transfer* of) gold.

  → If *export > imports* (that is: a *trade surplus*), a country's gold stock increases; if *exports < imports* (that is: a *trade deficit*), a country's gold stock declines.

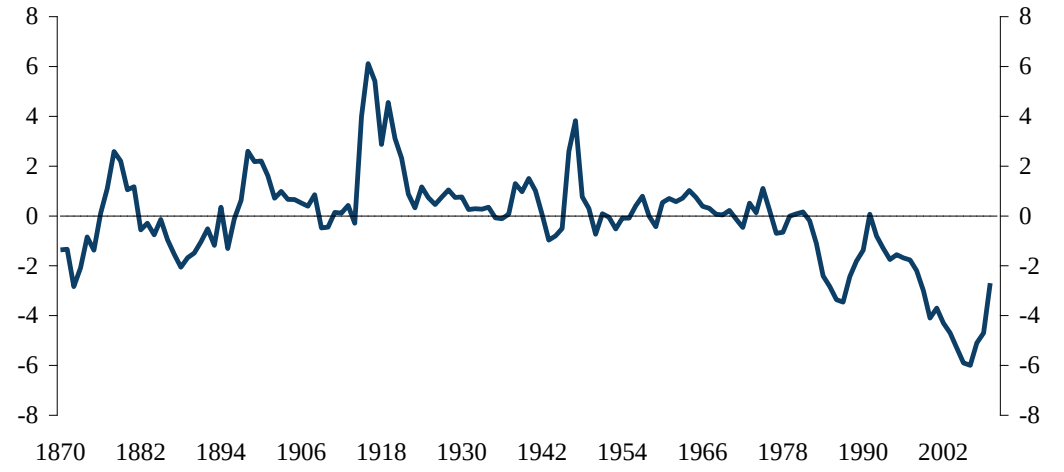
  → Under a gold standard, *countries' trade balances* tend to be balanced, on average, over time. If, for instance, a country runs of a trade surplus (*exports > imports*), the domestic gold (money stock) increases.

  → A rise in the domestic money stock (as a result of a trade surplus) drives up domestic prices (or it prevents prices from declining). Higher domestic prices, in turn, make the country's products less competitive relative to foreign goods. Imports increase and exports decline, so that the trade surplus declines (*towards zero*).

  → As a result, under a gold standard the *countries' trade balances* tend to be in equilibrium (on average).

- A rise in the gold (and thus money) stock in one country affects *income* and *prices* in (all) other countries which have adopted the gold standard.

US trade balance in % of GDP



Source: Pakko, M. R. (1999), IMF (current account for 2000 - 2009)

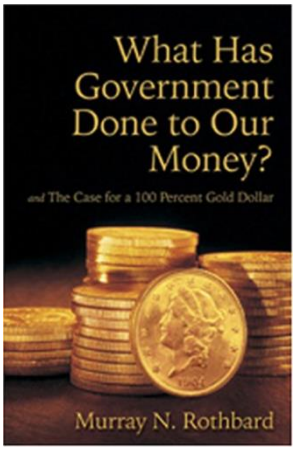
  → Under a gold standard, there is *nothing like a national economic policy*, which may shield national producers and consumers from international developments.

- A gold standard doesn't require a central bank. All that is required is unconditional respect of peoples' private property rights – and sanctions against violation of peoples' private property rights.

9. On Rothbard's "What Has Government Done to Our Money?"

THE PURPOSE OF THIS SESSION:
You will (1) learn about the various steps the state took to monopolize money, (2) understand why the state replaces fiat money for commodity money, and (3) put things into perspective from an ethical point of view.

READINGS:
Rothbard, M. N. (1990), What Has Government Done to Our Money? Ludwig von Mises Institute, Auburn, US Alabama.



ROTHBARD'S PROGRESSION THEOREM

- In *What Has Government Done to Our Money?* (1963), Murray N. Rothbard provides an account of how government has, over a lengthy period of time, replaced free market money by fiat money (created through credit expansion).

- Rothbard developed a *progression theorem* (basically along the line of Mises's *regression theorem*). He demonstrated that, by the praxeological necessity, government (once established) takes full control over money production.

  "Government could never cement its power over a nation's currency, if the people, when in need, could repudiate the fiat paper and turn to gold for their money. Accordingly, governments have outlawed gold holing by their citizens."
  —Rothbard (1990), What has Government Done to Our money, p. 84.

  "The state … is defined as an agency characterized by two unique, logically connected features. First, the state is an agency that exercises a territorial monopoly of ultimate decision making. That is, the state is the ultimate arbiter in every case of conflict, including conflicts involving itself. It allows no appeal above and beyond itself. Second, the state is an agency that exercises a territorial monopoly of taxation. That is, it is an agency that unilaterally fixes the price that private citizens must pay for the state's service as ultimate judge and enforcer of law and order."
  —Hoppe, State or Private Law Society, 5 September 2011.

- To explain Rothbard's line of reasoning, let us begin with the issue of *funding government spending*. For the latter, any government must find ways of expropriation. Two strategies are available: (i) *seizing goods in kind* or, in a monetary economy, (ii) *seizing money*.

- *Taxation* tends to be politically unpopular (under monarchies and democracies alike). By creating new money out of thin air (*counterfeiting*), however, the government can actually appropriate resources slyly and almost unnoticed (at least at the beginning), without rousing hostility among the electorate.

- To get hold of the money supply and use *counterfeiting as a source of revenue*, the government apparatus has taken many lengthy steps (taken gradually and in a rather subtle way) – for the government cannot simply invade a functioning free market and print its own paper money. People would simply refuse to accept any such money (as the *regression theorem* would say).

- *STEP #1*: *Taking control of the minting business*. Minting coins was propagated as a prerogative of the ruler (emperor, king, etc.). This, in turn, reduced the variety of coins, and the mint could charge a high(er) price for minting precious metals. *Seniorage* (the price charged by the ruler for minting coins) became a monopoly price.

- Having established the *minting monopoly*, the ruler (and later, governments) *named* the monetary unit, doing its best to separate the name of the monetary unit from its underlying weight (in precious metal). This, in turn, made the currency national (US dollar, Euro, British Pound etc.), liberating the government from the necessity to abiding by an international (world) money.

- These interferences opened the door to the governments' counterfeiting of coins: *debasement*. The government could secretly dilute gold and silver with base alloy, thereby producing shortweight coins. The mint would melt and recoin all the coins of the realm, giving back to the public the same number of "pounds" or "marks" but of a lighter weight. The leftover ounces were pocketed by the ruler.

- What is more, by establishing *bimetallism* the government (arbitrarily) set the exchange value of one money (say, gold) in terms of the other money (say, silver) – thereby replacing the market chosen *parallel standard* (of two or more currencies with freely fluctuating exchange rates).

- Under *bimetallism*, the government effectively places a maximum price on one type of money in terms of the other. If the officially determined exchange rate deviates from the market ratio, the overvalued money will drive out the undervalued money (*Gresham's Law*).

  — For instance, assume that the government establishes a silver-gold ratio of 20 to 1, while the market ratio is 21 to 1. In this case, people will bring their silver to the mint, exchanging 20 ounces of silver for one ounce of gold. With one ounce of gold, they will earn 21 ounces of silver. Silver (*overvalued*) will be the currency of circulation, while gold (*undervalued*) will be hoarded and/or exported.

  — However, the *market exchange ratio* of gold against silver changes due to changes in supply and demand, thereby deviating from the officially set exchange ratio. As a result, the fixed exchange ratio between gold and silver will lead to *economic problems*. The latter, in turn, were typically ascribed to a dysfunctional free market – rather than *government interference in free markets*.

- *Legal tender laws* also played a highly important role in governments achieving full control over monetary affairs. – With the money defined by *name* rather than by a specific weight of precious metal, contracts (for cash as well as for credit transactions) increasingly began to pledge payment in the legal tender *money*.

  → As soon as the government decrees that certain (pieces of credit) money is legal tender, *every creditor is bound to accept them in payment* at its face value. But why should, for instance, a lender accept repayment in a low-quality money?

  → Legal tender status had been given to money-substitutes (bank notes) at a time when they will were fully backed with money proper. At that time, the decree had basically no market consequences. However, it started to have consequences when market agents no longer considered them money-substitutes.

  → As the government declared as legal tender a lower-quality money (pieces of paper, credit money) side-by-side with money proper (gold, silver), Gresham's Law kicked in, with bad (overvalued) money driving out good (undervalued) money out.

- *STEP #2*: *Permitting banks to refuse payments*. Governments' scope of counterfeiting became almost unlimited with the advent of money-substitutes (such as bank notes and bank deposits, which were, at least originally, backed by pre-specified amounts of money proper (gold, silver)).

  → On an ad hoc basis, governments granted commercial banks the *privilege of refusing to redeem their liabilities in money proper* (as promised to their clients) – in order to prevent *bank runs* and *bank failures* and potentially ensuing *political upheavals*, which could threaten the very existence of government itself.

  → *Mass suspensions of specie payment* typically occurred in times of severe financial stress, which were all too often the result of an over-issue of bank notes and bank deposits not backed by money proper (*inflation*). Suspension of specie payments amounts to an expropriation of the holder of money proper.

  → Commercial banks soon realized that they need not have to fear bankruptcy as a result of over-issuance (that is issuing money-substitutes in excess of money proper holdings). *Fractional reserve banking* became the norm as the traditional checks against inflation were increasingly removed, especially by suspension of commercial banks' obligation of specie payments.

  → Under a system of *fractional reserve banking*, commercial banks could easily finance governments via extending *circulation credit* (that is credit expansion in excess of savings) and thereby creating new money out of thin air.

  → However, financial crisis as a result of over-issue (inflation) tended to be sporadic and unpredictable, and the expectation of commercial banks could *never* pay back their obligations would have eroded the public's confidence in the monetary system sooner or later.

  → The way forward was to establish a *central bank*, serving as the *bankers' bank*. It does not matter whether such a central bank is nominally owned by private individuals/private banks (like the *US*

Federal Reserve) or publicly owned (like, for instance, the *European Central Bank*), as it is always directed by government-appointed officials.

- *STEP #3*: *Establishing the central bank*. A central bank enjoys all the support of the government. It is armed, following constant pro central bank *propaganda*, with the almost unlimited confidence of the general public.

→ The central bank takes control of monetary affairs by assuming the *monopoly of the note issue* (the *unsung key* to the central bank's power). Commercial banks are no longer allowed to issue notes, they just create deposits (largely due bank credit expansion).

→ Commercial banks are required to hold *reserves* in central bank money, called *minimum reserve requirements* (deposits to be held in the form of demand deposits with the central banks or in the form of central bank notes), which can only be obtained from the central bank monopoly.

→ In the US, for instance, commercial banks were *compelled* to keep reserves with the US Fed and, since 1917, these reserves only consist of deposits at the Federal Reserve Bank. *Gold*, which was no longer accepted as part of commercial banks' legal reserves, *had to be deposited with the Fed*.

→ People became used to accepting bank notes as a means of payment, as there was great *confidence in the central bank* (with its gold holdings, its prestige and backed by the might of government, so that is could not fail).

→ The central bank invested private banks with the public's confidence, simply by making it public that it would stand ready to act as a *lender of last resort*: if running into financial trouble, the central bank could step in and provide banks with all the money they needed (be it in the form of bank notes or demand deposits).

→ By doing so, *bank runs* – which serve as a *check against inflation* (that is increasing fiduciary media in excess of money proper) – were discouraged or better: were made impossible.

A WORD ON *THE ETHICS OF MONEY PRODUCTION*

SUGGESTED READINGS: Hülsmann, J. G. (2008), The Ethics of Money Production, Ludwig von Mises Institute, Auburn, US Alabama.

- Today's money production is *irreconcilable* with the principles of the capitalist economic order, under which private property can only be created through (i) homesteading, (ii) production and (iii) trade (*all voluntarily entered into*).

- Money creation (through credit expansion) has been monopolised by the state, which grants licences for money creation to the private sector (banks).

"The prevailing ways of money production, relying as they do on a panoply of legal privileges, are alien elements in the capitalist economy. They provide illicit incomes, encourage irresponsibility and dependence, stimulate the artificial centralization of political and economic decision-making, and constantly create fundamental economic disequilibria that threaten the life and welfare of millions of people. In short, paper money and fractional-reserve banking go a long way toward accounting for the excesses for which the capitalist economy is widely chided." (Hülsmann, 2008, p. 238)

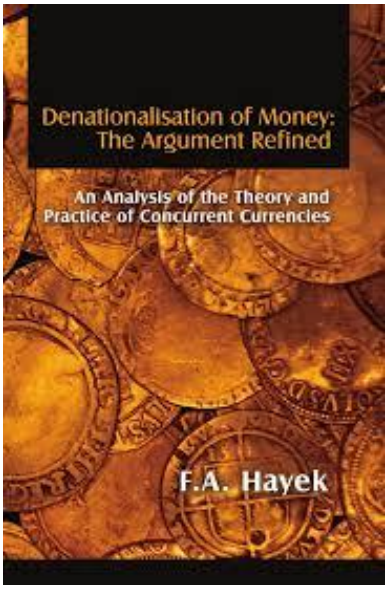
- Hasn't the monetary order evolved *naturally* over time?

"We have argued that these monetary institutions [central banks, *TP*] have not come into existence out of any economic necessity. They have been created because they allow an alliance of politicians and bankers to enrich themselves at the expense of all other strata of society. This alliance emerged rather spontaneously in the seventeenth century; it developed in multifarious ways up to the present day, and in the course of its development it created the current monetary institutions."
—Hülsmann, 2008, p. 239.

10. Hayek's denationalization of money – a critique

THE PURPOSE OF THIS SESSION:
You will (1) learn about Hayek's idea of privatizing money production, (2) level some critiques against Hayek's idea, and (3) review the emergence of 'bitcoin'.

READINGS:
Hayek, F. A. v. 1978. "Denationalization of Money: The Argument Refined. An Analysis of the Theory and Practice of Concurrent Currencies. " Hobart Paper (Special) 70. London: Institute of Economic Affairs.



Idea and motivation

- In 1976, Friedrich August von Hayek (1899 – 1992) published *Choice in Currency. A Way to Stop Inflation*, followed in 1978 by a revised and enlarged version titled *Denationalisation of Money: The Argument Refined. An Analysis of the Theory and Practice of Concurrent Currencies*.

- Hayek calls for replacing the state's money production monopoly with a free market in money. He argues that money is a good (a commodity) like any other, and that private issuers would provide better money than a state money production monopolist.

- Hayek is of the opinion that governments misuse the monopoly over money, having caused inflation and economic crises:

  "I do not think that it is an exaggeration to say that history is largely a history of inflation, and usually of inflations engineered by governments and for the gain of governments." (Hayek 1978, p. 34).

  "The past instability of the market economy is the consequence of the exclusion of the most important regulator of the market mechanism, money, from itself being regulated by the market process." (Hayek 1978, p. 102).

Constitutive elements

- The constitutive elements of Hayek's competitive currencies concept are:

  (i) everyone would be free to offer media competing for money status;

  (ii) Everyone would be free to demand the kind of money that serves his purposes best (with no legal tender laws in place); and

  (iii) there is "free banking", meaning a free market in banking services (as far as the deposit and credit business are concerned).

  ⇨ In a truly free market in money, Hayek holds, sound money would emerge – as no one would demand bad money.

(Praxeological) Critique

- *Critique 1*: Ignoring the regression theorem

  Hayek's idea that 'paper tickets' with new names and marks on them (say, '100 Hayek's', or a '500 Smiths') could become money is misguided. First and foremost, it is incompatible with the regression theorem as outlined by Mises in his *The Theory of Money and Credit* (1912).

  Rothbard concludes (Rothbard 1992, p. 4): "Hayek's plan for the denationalization of money is Utopian in the worst sense: not because it is radical, but because it would not and could not work."

- *Critique 2*: Confusing money proper with money substitutes

  Hayek thinks that in a free market there would be competition between private money issuers, each issuing its own currency.

  In fact, however, money warehouses will compete in terms of *money substitutes* rather than in terms of *money proper*, as Hayek suggests.

- *Critique 3*: Failing to factor in the economics and ethics of money production

  Hayek would allow competitive currencies to be loaned into existence or printed up (Hayek 1978, p. 52): "[A] number of competing issuers of different currencies would have to compete in the quality of the currencies they offered for loan or sale."

  However, the regression theorem tells us that unbacked (paper) money cannot emerge voluntarily and spontaneously. Only money substitutes can be brought into circulation through credit expansion, with issuers of such money substitutes operating on fractional reserves. This, however, would be to considered illegal (for property right reasons)

If loaned into existence, Hayek's competing currencies would basically amount to monies created 'out of thin 'air'. They would suffer from the same economic and ethical deficiencies as state controlled fiat monies.

- *Critique 4*: Falling victim to the Fata Morgana of 'stable money'

  Hayek assumes that money would be in continuous demand as long as people expect its purchasing power to be constant, and he holds that money issuers should keep the purchasing power of their monies stable by regulating the quantity of their issues (Hayek 1978, p. 52).

  However, in the realm of human action is no such thing as money with a 'stable' purchasing power (Mises 1998, p. 219): "There is no fixed point in this ceaseless fluctuation other than the eternal aprioristic categories of action. It is vain to … argue as if there were in the universe eternal values independent of human value judgements and suitable to serve as a yardstick for the appraisal of real action."

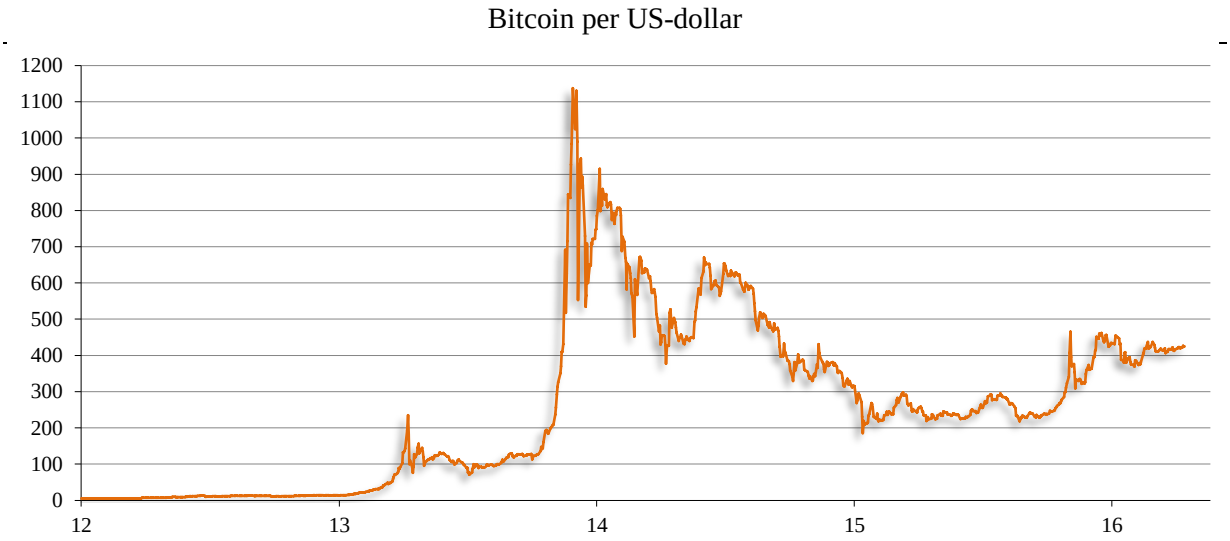
  If issuers of money substitutes would buy and sell their monies to keep their purchasing power stable, Hayek's competing currencies would become a source of economic trouble: Hayek's competing currency issuers would trigger the same economic problems as those caused by central banks' monetary policies.

- *Critique 5*: Misjudging the benevolence of the state

  We have already learned what the state is (see the definition on page 39).

  "We see why governments are inherently inflationary: because inflation is a powerful and subtle means for government acquisition of the public's resources, a painless and all the more dangerous form of taxation."
  —Rothbard; M. N. (2010), What Has Government Done to Our Money?, p. 50.

Bitcoin – a case in point?

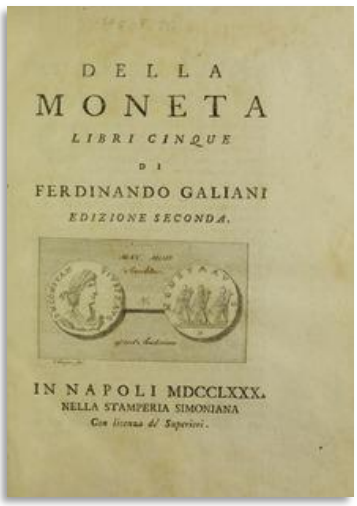


Source: Bloomberg.

11. The quantity theory – a critique

THE PURPOSE OF THIS SESSION:
You will (1) learn what the quantity theory of money says, (2) revisit the demand for money, and (3) think about the issue of (super-)neutrality of money.

READINGS:
Mises, L. v. (1953), The Theory of Money and Credit, New Haven, Yale University Press.



The quantity theory of money

- The *equation of exchange* is:

  (1) $M \cdot V = Y \cdot P$,

  where M denotes the stock of money, V represents the income velocity of money, whereas Y and P stand for real output and the price level, respectively.

  Equation (1) simply states that the stock of money, multiplied by the number of times a money unit is used for financing purposes, equals real output multiplied with the price level.

  Assuming that V and Y are constant, a rise in M leads to a proportional rise in P. This is what the quantity theory of money tells us.

- In terms of *growth* rates the equation of exchange can be transformed as follows:

  (2) $\Delta m + \Delta v = \Delta y + \Delta p$,

  where small case letters represent logarithms and Δ represent first differences.

  Solving equation (2) for (9.19) for Δm yields:

(3) $\Delta m = \Delta y + \Delta p - \Delta v$

According to equation (3), money supply growth is driven by real income growth plus the envisaged rise in the price level minus the trend change in the income velocity of the stock of money.

- **Some further thoughts about the velocity of money**

Attention usually focuses on the long-run money demand relationship, which – together with the assumption of real trend growth – can be viewed as capturing the *long-run income velocity of money* which is actually relevant for determining money growth compatible with price stability. A simple money demand relationship (which shall be homogenous in terms of prices) can be represented by:

(4) $m - p = \beta_0 + \beta_y y + \gamma i + \varepsilon$,

where m represents the logarithm of money, p is the logarithm of the price level, y is the logarithm of real GDP, i is the interest rate and ε is the (i.i.d) error term (*white noise*).
The change in the income velocity of money is:

(5) $\Delta v = \Delta y + \Delta p - \Delta m$

or, equivalently, if we assume an environment of price stability (Δp dropping out of equation (5)) and stationarity of real interest rates (i excluded from equation (4)) and $\varepsilon = 0$:

(6) $\Delta v = (1 - \beta_y)\Delta y$,

Equation (6) shows that in this case the change in velocity would be solely driven by real output; neither interest rates nor inflation would have an impact on trend income velocity. Moreover, with $\beta_y > 1$, income velocity of money would show a *declining trend* over time.

Income velocity of the US M2

Source: Thomson Financial; own calculation. *Nominal GDP divided by the quantity of money.

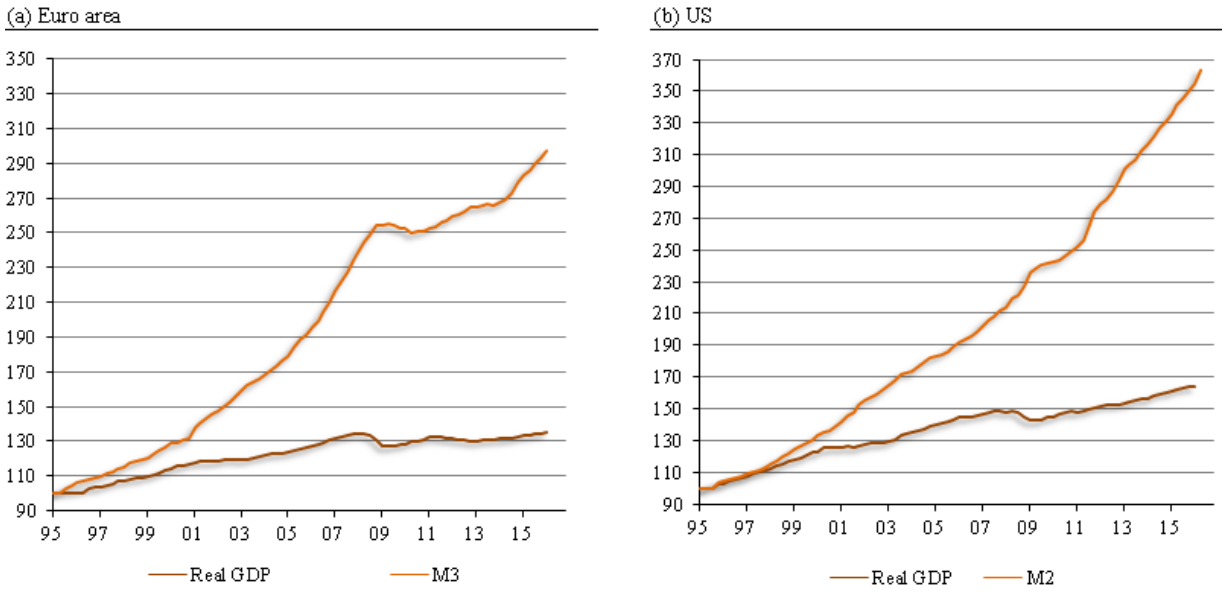
- **Changes in the quantity of money and prices**

Mainstream economists say that if a rise in the money stock is accompanied by a (sufficient) rise in the supply of goods and services, it does not cause inflation, as it would not make prices go up.

From the Austrian viewpoint, such an argument does not hold water, though. Austrians would argue that a rise in the quantity of money leads to higher prices (compared to a situation in which the quantity of money had remained unchanged), and *necessarily* so.

That said, there are two consequences that come with a rise in the money stock that need to be highlighted in this context. First, the *visible effect* is a rise in money prices; it is the result of a rise in the money stock while the supply of goods and services remains unchanged.

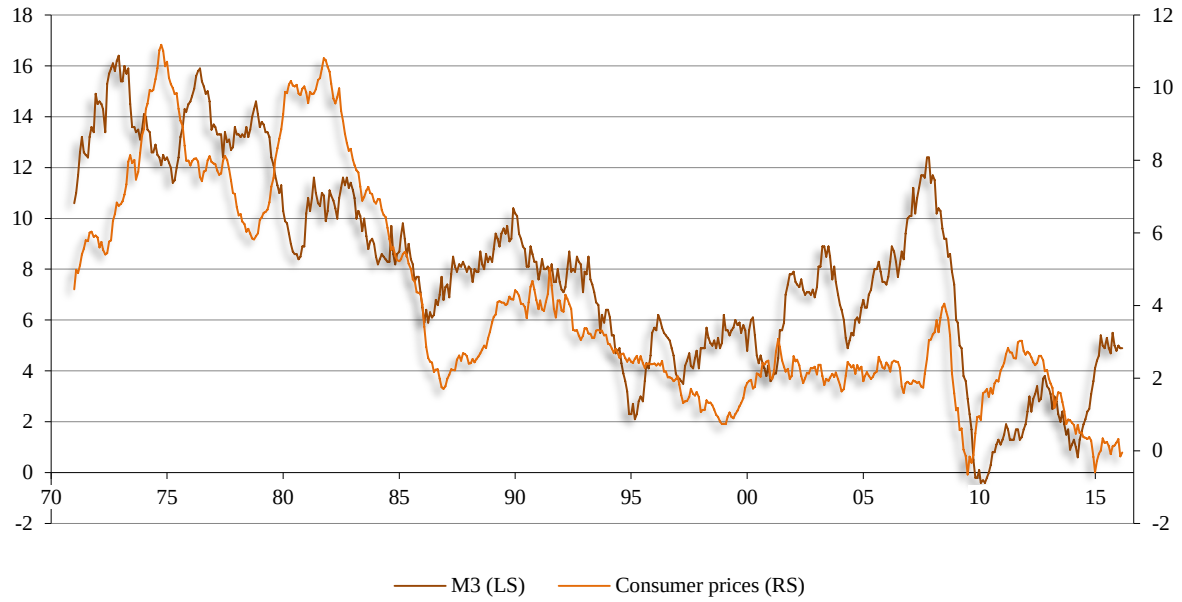
Real GDP and the quantity of money



Source: Thomson Financial; Degussa calculations.
Series are indexed (Q1 1995 = 100).

Second, the *invisible effect* is brought about by a rise in the money stock, even if it is accompanied by a rising supply of goods and services: the rise in the money stock prevents money prices to reach lower levels.

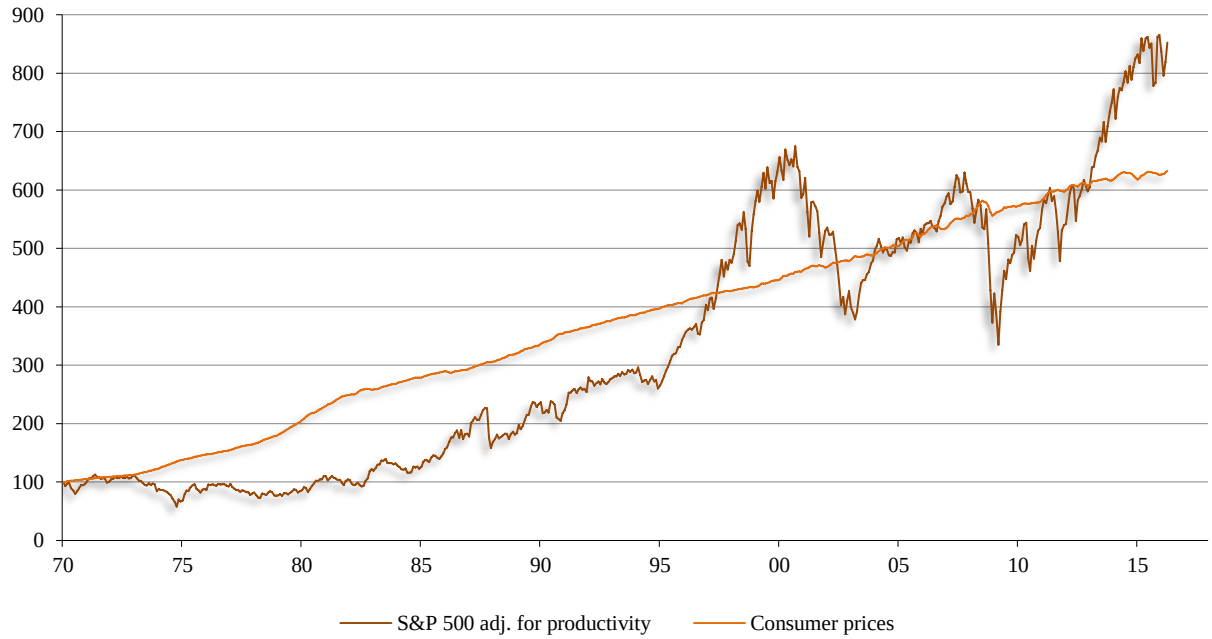
Changes in consumer prices and the quantity of M3 in percent in the euro area



Source: Thomson Financial; own calculations.

What is more, a rise in the quantity of money won't only affect consumer prices, but may well (also) affect asset prices – such as, for instance, stock and housing prices. In other words: a rise in the quantity of money may cause *asset price inflation*.

US consumer prices and the (adjusted) S&P 500 stock market index*



Source: Thomson Financial; own calculations. *Adjusted for industrial production.

- **On *neutrality* and *superneutrality* of money**

The hypothesis of the *neutrality of money* is mostly assumed to hold in the long term, while in the short-to-medium term the idea is that a rise in the money stock may well affect economic activity. This is largely attributable to surprise (and transaction-cost) effects.

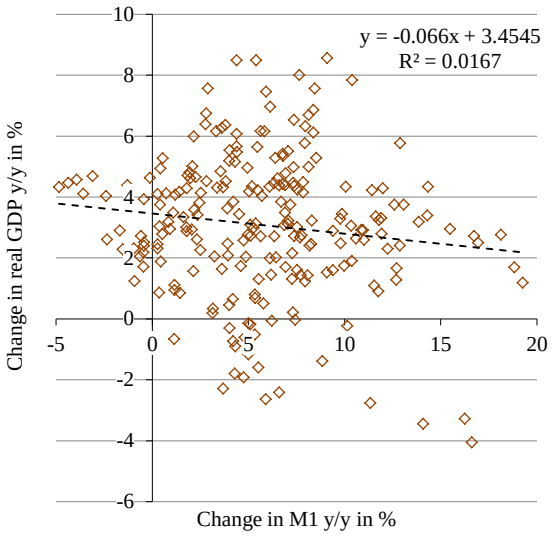
For instance, an *unexpected* rise in the money stock induces changes in relative prices and therefore affects consumption and investment. Eventually, however, market agents adjust their dispositions (wages, contracts, etc.) to higher prices, and economic activity returns to its original level. So, the new money increases prices, but it does not increase production.

The neutrality-of-money hypothesis does not rule out that changes in the money growth rate may have permanent effects on the level of economic activity. In fact, a rise in the growth rate of the money stock (from, say, 4% a year to 5% a year) may be thought of as having the potential of pushing production to a permanently higher level of output.

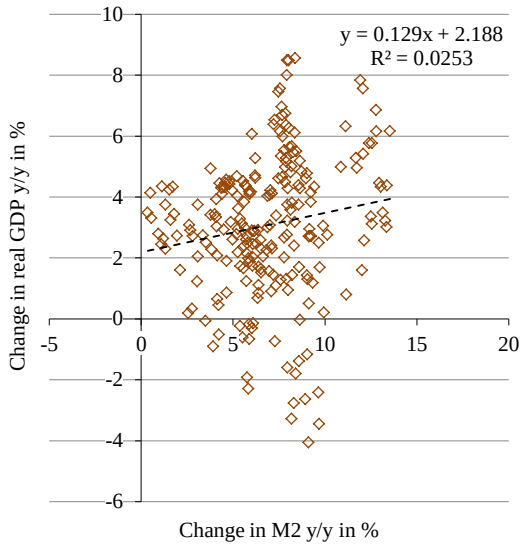
Money is said to be *superneutral* if changes in the (steady state) growth rate of the money supply exert no effects on output. In other words: Economic activity is independent of money growth.

The relation between changes in US real GDP and
changes in the quantity of money, Q1-1960 to Q1-2016

(a) GDP and M1



(b) GDP and M2



Source: Thomson Financial; own calculations.

→Questions: How do you interpret these findings? Do the graphs above prove anything? What does the Austrian theory say?

Praxeological considerations

- Money's only function is the means of payment function. As Rothbard noted:

"while an increase in the money supply, like an increase in the supply of any good, lowers its price, the change *does not—unlike other goods—confer a social benefit*. The public at large is not made richer. Whereas new consumer or capital goods add to standards of living, new money only raises prices—i.e., dilutes its own purchasing power. The reason for this puzzle is that money is only useful for its exchange value." (Rothbard, 2010, p. 25)

"We come to the startling truth that it *doesn't matter what the supply of money is. Any supply will do as well as any other supply*. (Rothbard, 2010, p. 25)

- A change in the quantity of money can *never be neutral* in terms of affecting individuals' income and wealth position.

"An increase in a community's stock of money always means an increase in the amount of money held by a number of economic agents, whether these are the issuers of fiat or credit money or the producers of the substance of which commodity money is made. For these persons, the ratio between the demand for money and the stock of it is altered; they have a relative superfluity of money and a relative shortage of other economic goods. The immediate consequence of both circumstances is that the marginal utility to them of the monetary unit diminishes. This necessarily influences their behaviour in the market. They are in a stronger position as buyers. They will now express in the market their demand for the objects they desire more intensively than before; they are able to offer more money for the commodities that they wish to acquire. It will be the obvious result of this that the prices of the goods concerned will rise, and that the objective exchange-value of money will fall in comparison.

But this rise of prices will by no means be restricted to the market for those goods that are desired by those who originally have the new money at their disposal. In addition, those who have brought these goods to market will have their incomes and their proportionate stocks of money increased and, in their turn, will be in a position to demand more intensively the goods they want, so that these goods will also rise in price. Thus the increase of prices continues, having a diminishing effect, until all commodities, some to a greater and some to a lesser extent, are reached by it.

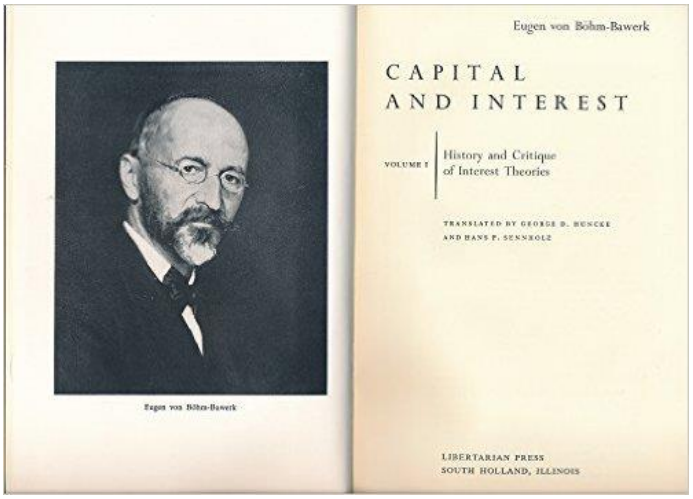
The increase in the quantity of money does not mean an increase of income for all individuals. On the contrary, those sections of the community that are the last to be reached by the additional quantity of money have their incomes reduced, as a consequence of the decrease in the value of money called forth by the increase in its quantity; this will be referred to later."

—Mises, 1953, The Theory of Money and Credit, p. 139.

12. Time preference and the theory of the interest rate

THE PURPOSE OF THIS SESSION:
You will learn (1) that time preference is a category of human action, (2) how Ludwig von Mises explained the originary interest rate, and (3) that the latter cannot become zero, let alone negative.

READINGS:
Herbener, J. M. (ed.) (2011), The Pure Time-Preference Theory of Interest, Ludwig von Mises Institute, Auburn, US Alabama.



EUGEN VON BÖHM-BAWERK'S THEORY

- "The history of the interest problem (…) begins with a very long period in which loan interest, or usury, alone is the subject of investigation. This period begins deep in ancient times, and reaches down to the eighteenth century of our era. It is occupied with the contention of two opposing doctrines: the elder of the two is hostile to interest; the later defends it. The course of the quarrel belongs to the history of civilization (…)."
  —Eugen von Böhm-Bawerk (1890), Capital and Interest, p. 14.

- Böhm-Bawerk formulated the interest rate as *value problem*, which is related to human action: *"Present goods have in general greater subjective value than future goods of equal quantity and quality."* (Böhm-Bawerk (1959), Capital and Interest, p. 265.)

- He argued that the interest rate is determined by three factors, whereas (1) and (2) are caused by *psychological dispositions*:

  (1) Current needs are typically less well satisfied than future needs;

  (2) human beings tend to underestimate future needs; and

  (3) a *technical* factor that determines *time preference*: namely that time preference is caused by the higher physical productivity of *roundabout methods of production*.

- However, Böhm-Bawerk's *psychological explanation* of *time preference* suffered from two shortcomings:

  (1) He considers the *value differential* between *homogenous goods*, available in the present and the future, while the very fact that the goods are available at different point in time makes them *heterogeneous goods*.

  (2) In view of Böhm-Bawerk's psychological explanation, time preference may be *positive* at some point in time (so future goods are valued less highly than present goods), while at other points in time preference may be *negative* (as future goods are valued more highly than present goods).

LUDWIG VON MISES' THEORY

- Mises made a distinction between the *market interest rate* (or interest rate on the loan market) and the *originary interest rate* (or: *Urzins*):

  Market interest rate =
  Originary interest rate
  + inflation premium
  + credit premium
  + liquidity premium.

- What is the *originary interest*? The originary interest is a *category of human action.* The (*micro-economic*) explanation runs as follows:

  — Human action requires means to achieve certain ends.
  — Action takes time. Time is a means and must be economized.
  — As time is a scarce means, an earlier satisfaction of wants is preferred over a later satisfaction of wants. As a result, time preference is positive.
  — Present goods are valued more highly than future goods, meaning that future goods trade at a discount relative to present goods.

  "Originary interest is the ratio of the value assigned to want-satisfaction in the immediate future and the value assigned to want-satisfaction in remote periods of the future. It manifests itself in the market economy in the discount of future goods as against present goods."
  —Mises (1996), Human Action, p. 526.

- *Time preference* and thus the *originary interest rate* must always be positive and cannot be zero, let alone negative:

  "If he were not to prefer satisfaction in a nearer period of the future to that in a remoter period, he would never consume and so satisfy wants. He would always accumulate, he would never consume and enjoy. He would not consume today, but he would not consume tomorrow either, as the morrow would confront him with the same alternative."
  —Mises (1996), Human Action, p. 484.

- Mises followed the reasoning of Frank A. Fetter (1863–1949) and Franz Cuhel (1862 –1914), who argued that the ultimate cause of time preference is the necessity of consumption.

- *Question 1*: If returns on investment are zero, could the originary interest be zero? *Question 2*: What would happen to land prices if the interest was zero?

- It doesn't take wonder that Mises rejects Böhm-Bawerk's *psychological explanation* of the interest rate. Psychology, Mises argued, cannot establish (the *praxeological* fact that there is *positive*) *time preference*.

- Böhm-Bawerk (and also Frank A. Fetter (1863–1949) and Irving Fisher (1867–1947)) referred to a *value differential* between *homogeneous goods* available at two different times (present and future). However, the same good (in physical terms) may be viewed differently if and when it is available in the present or in the future.

  → Mises made use of a *counterfactual value differential* between two alternative uses of one and the same good. As Mises writes:

  → "[T]ime preference concerns the value differential between a present use of a good and an alternative future use of this good that could only have been realized had a different choice been made. When I use a good now rather than later, I demonstrate that I prefer to use the good now rather than later. And this in turn necessarily means that the value of its present use is higher for me than the value of the use I might have made of it in the future."
  —Hülsmann (2007), Last Knight of Liberty, p. 777-8.

MURRAY N. ROTHBARD'S INTEREST RATE EXPLANATION

- The "pure rate of interest … is determined solely by the time preferences of the individuals in the society, and by no other factor."

—Rothbard (2001), Man, State, and Economy, p. 389.

- *Present goods*: readily available goods (and services). *Future goods*: A future good is the present expectation of enjoying a consumers' good at some point in the future.

- Two types of exchanges:

  (1) Exchanging *present goods* against *present goods* (*present-present market. Example:* Purchasing a car (present good) for US$50,000 (present good) is a transaction in the market for present goods.

  (2) Exchanging *present goods* for *future goods* (*present-future*, or *time market*). *Example:* Loaning money takes place in the time market: money (a present good) is exchanged for a claim to future money (a future good).

- It all starts with individuals' *value scales*:

John Smith

..... (19 oz. future) (10 yrs. from now)
..... 4th unit of 10 oz.
..... (18 oz. future)
..... (17 oz. future)
..... (16 oz. future)
..... 3rd unit of 10 oz.
..... (15 oz. future)
..... (14 oz. future)
..... (13 oz. future)
..... 2nd unit of 10 oz.
..... (12 oz. future)
..... 1st unit of 10 oz.
..... (11 oz. future)
..... (1st added unit of 10 oz.)
..... (2nd added unit of 10 oz.)
..... (10 oz. future)

James Robinson

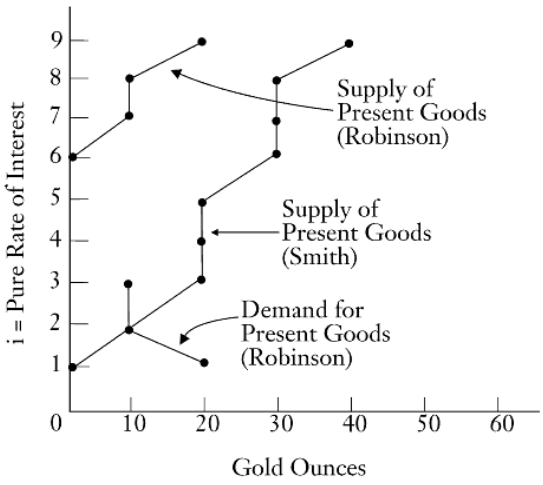
..... (19 oz. future) (10 yrs. from now)
..... 2nd unit of 10 oz.
..... (18 oz. future)
..... (17 oz. future)
..... 1st unit of 10 oz.
..... (16 oz. future)
..... (15 oz. future)
..... (14 oz. future)
..... (1st added unit of 10 oz.)
..... (13 oz. future)
..... (12 oz. future)
..... (2nd added unit of 10 oz.)
..... (11 oz. future)
..... (3rd added unit of 10 oz.)
..... (10 oz. future)

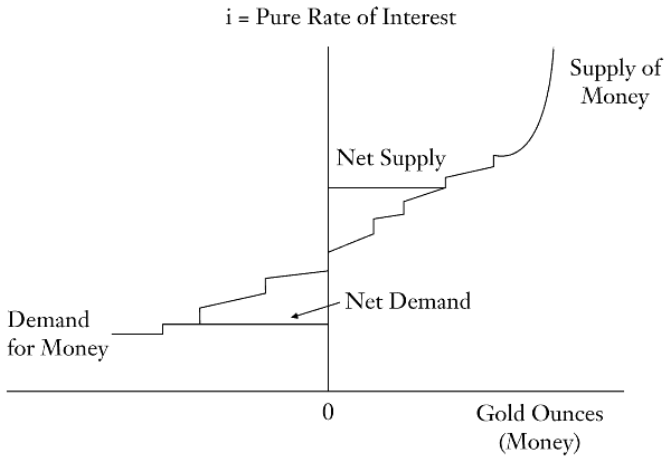
Mr Smith

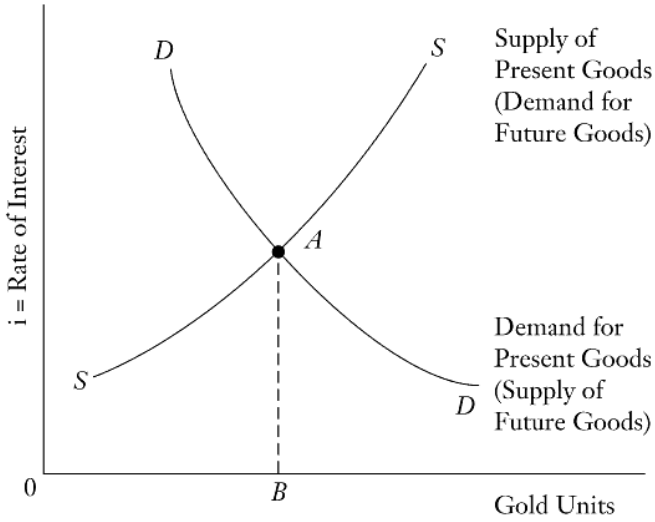
Interest Rate %	Supply of Present Money = Demand for Future Money = Savings oz. of Gold	Supply of Future Money = Demand for Present Money oz. of Gold
9	40	0
8	30	0
7	30	0
6	30	0
5	20	0
4	20	0
3	20	0
2	10	0
1	0	0

Mr Robinson

Interest Rate %	Supply of Present Money = Demand for Future Money = Savings oz. of Gold	Supply of Future Money = Demand for Present Money oz. of Gold
9	20	0
8	10	0
7	10	0
6	0	0
5	0	0
4	0	0
3	0	10
2	0	10
1	0	20





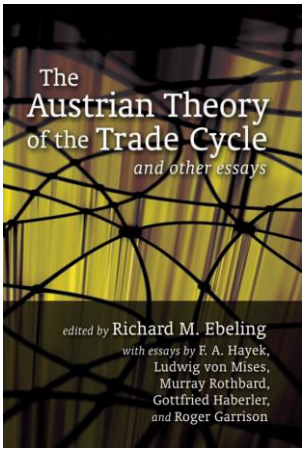


Source: Rothbard, M. N. (2009), Man, Economy, and State, pp. 379 – 389.

13. The Austrian business cycle theory

THE PURPOSE OF THIS SESSION:
You will learn (1) that issuing fiat money leads to boom-and-bust, (2) that the 'boom' is the actual problem, and that the 'bust' is the correction, and (3) why Austrians recommend non-intervention.

READINGS:
Rothbard, M. N. (1973), For a A New Liberty, pp. 213 – 240; Mises, L. v. (1996), Human Action, Chapter XX: Interest, Credit Expansion and the Trade Cycle, pp. 538 – 586.



BUSINESS FLUCTUATION VERSUS BUSINESS CYCLE

- *Swings* of economic activity around its "trend" (the 'up and downs') are typically called *business fluctuations* – due to, say, seasonal factors or individual firm and industry developments. The term *business cycle* relates to *general* boom (artificial upswing) and bust (depression).

Johan Gustaf Knut Wicksell 1851 – 1926

- A *business cycle theory* must explain *three* phenomena:
  —the *recurrence* of up and downs of economic activity;
  —the emerge of the "*cluster of error*"; and
  —Why capital goods industries fluctuate more widely than do consumer goods industries.

- The Austrian, or Misesian, theory of the business cycle is a monetary malinvestment theory of the business cycle. It consists of three theoretical building blocks:
  —the *Currency School;*
  —Böhm-Bawerk's capital theory (*roundabout production*); and
  —Knut Wicksell's *natural rate of interest* theory.

HOW IT WORKS

- The *central bank*, in cooperation with *commercial banks*, issue *circulation credit* (*Zirkulationskredit*): credit, which is *not* backed by *real savings*, and through which the money supply (the amount of

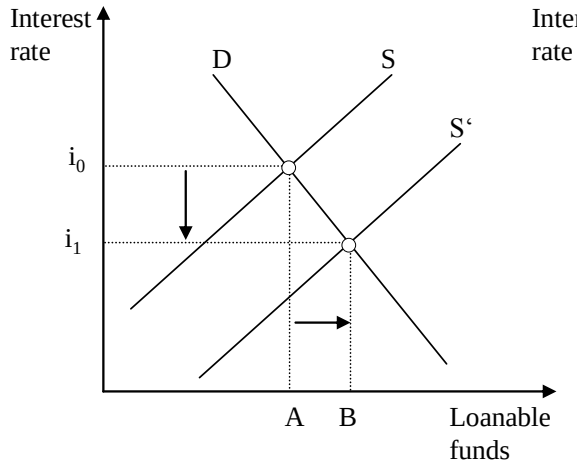
fiduciary media) is increased. [Note that credit, which transfers already existing money from the saver, is called *commodity credit* (*Sachkredit*).

- The increase in *circulation credit* lowers the interest rate in the credit market below the level of the *natural interest rate* (that is the rate that would prevail had the circulation credit supply remained unchanged).

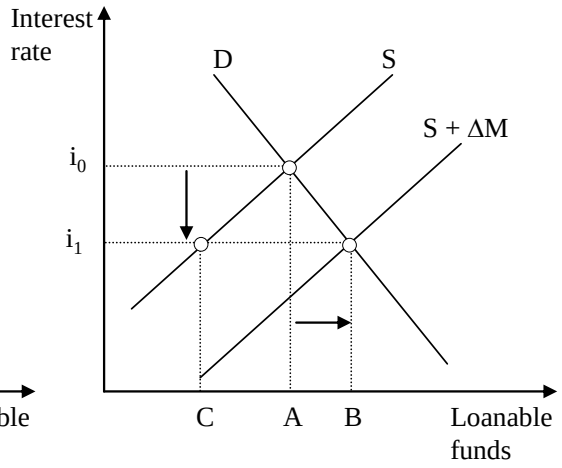
- The following graph helps to illustrate the consequences an increase in circulation credit has on economic activity – when compared with a decline in time preference:

- Fig. 1 (a) shows a *decline in time preference*, illustrated by a rightward movement of the savings curve (from *S* to *S'*). The equilibrium interest rate declines from i_0 to i_1. Savings and investment increase from *A* to *B*. A higher savings rate is accompanied by a decline in consumption.

(a) Increase in savings



(b) Increase in money and credit



- Fig. 1 (b) shows an *increase in circulation credit*. The savings curve moves from *S* to $S + \Delta M$. However, people have *not* become more thrifty, or future-oriented, as their time preference has not changed. The market clearing interest rate falls from i_0 to i_1. Investment increases from *A* to *B*, while genuine savings fall from *A* to *C*.

- After the initial injection of new credit and money has run its course, people bring their savings-consumption profile back to the preferred initial relation. As a result, the savings curve moves back to the left, raising the interest rate back to i_0 and reducing investment.

- A lowering of the market interest rate below the neutral rate through circulation credit expansion provokes an initial *boom*, to be followed by *bust*.

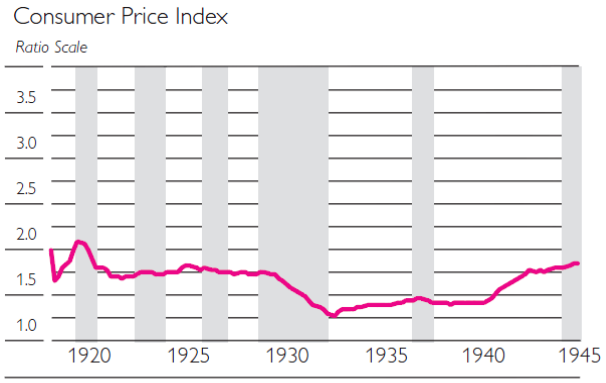
BOOM IS MALINVESTMENT, BUST IS CORRECTION OF MALINVESTMENT

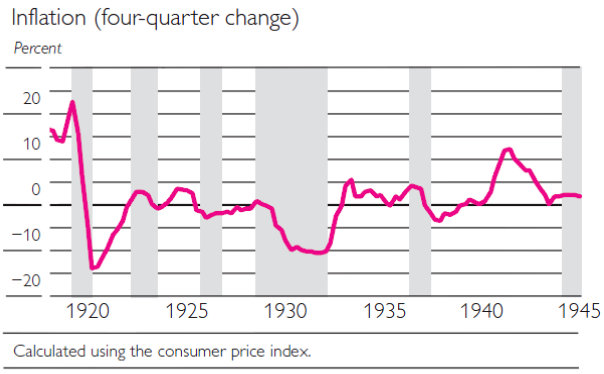
- The artificial upswing (the *boom*) is typically considered as a period of *prosperity* and highly welcome, while the downswing (the *bust*) is seen as the period of *crisis*, which people don't like. How-

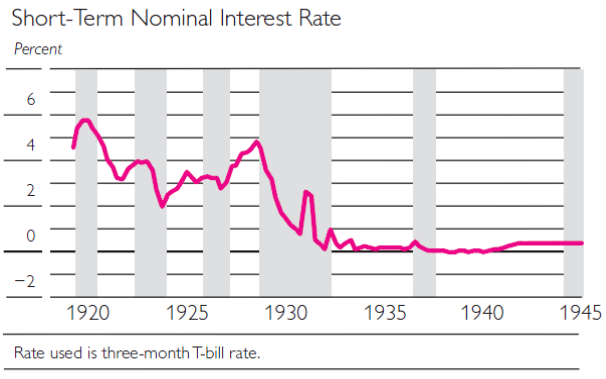
ever, the boom makes an economy *poorer* – compared with a situation in which the boom hadn't occurred:

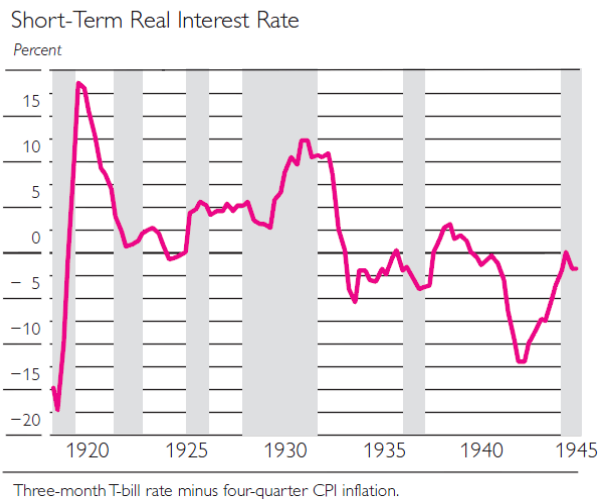
"One must guard oneself against a misinterpretation of this term impoverishment. It does not necessarily mean impoverishment when compared with the conditions that prevailed on the eve of the credit expansion. Whether or not an impoverishment in this sense takes place depends on the particular data of each case; it cannot be predicated apodictically by catallactics. What catallactics has in mind when asserting that impoverishment is an unavoidable outgrowth of credit expansion is impoverishment as compared with the state of affairs which would have developed in the absence of credit expansion and the boom. The characteristic mark of economic history under capitalism is unceasing economic progress, a steady increase in the quantity of capital goods available, and a continuous trend toward an improvement in the general standard of living. The pace of this progress is so rapid that, in the course of a boom period, it may well outstrip the synchronous losses caused by malinvestment and overconsumption. Then the economic system as a whole is more prosperous at the end of the boom than it was at its very beginning; it appears impoverished only when compared with the potentialities which existed for a still better state of satisfaction."
—Mises (1996), Human Action, pp. 568-9.

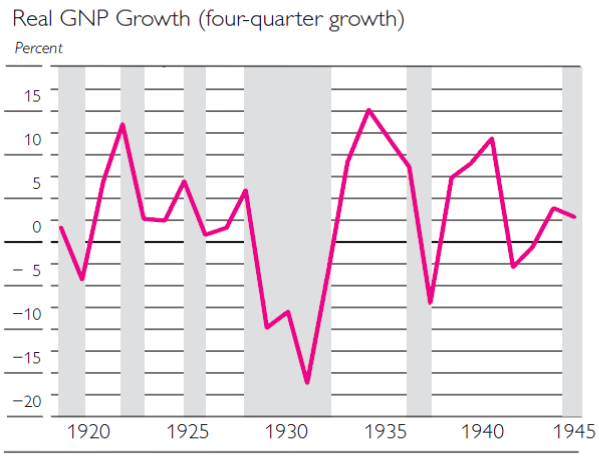
The US 'Great Depression'

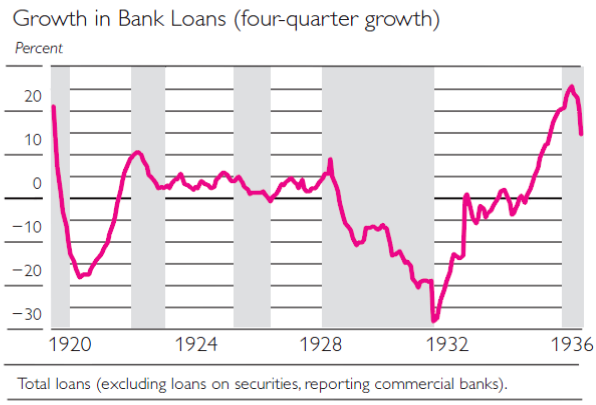






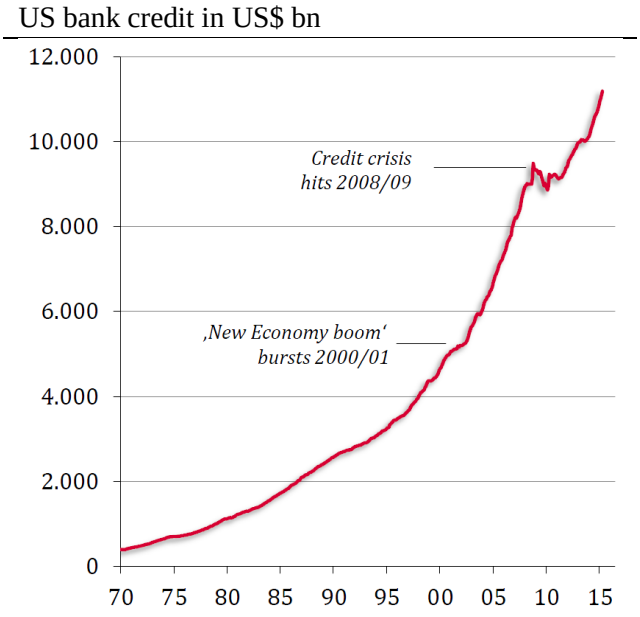






Source: Johnson, Small, Tryon (1999), Monetary policy and price stability, p. 68.

RECURRENCE OF BOOM AND BUST



Source: Thomson Financial.

"Like the repeated doping of a horse, the boom is kept on its way and ahead of its inevitable comeuppance by repeated and accelerating doses of the stimulant of bank credit. ... As soon as credit expansion stops, the piper must be paid, and the inevitable readjustments must liquidate the unsound over-investments of the boom and redirect the economy more toward consumer goods production."

—Rothbard (1973), For a New Liberty, p. 240.

- What is the reason for a *recurrence* of boom and bust, the boom and bust cycle?

"The boom produces impoverishment. But still more disastrous are its moral ravages. It makes people despondent and dispirited. The more optimistic they were under the illusory prosperity of the boom, the greater is their despair and their feeling of frustration. The individual is always ready to ascribe his good luck to his own efficiency and to take it as a well-deserved reward for his talent, application, and probity. But reverses of fortune he always charges to other people, and most of all to the absurdity of social and political institutions. He does not blame the authorities for having fostered the boom. He reviles them for the inevitable collapse. In the opinion of the public, more inflation and more credit expansion are the only remedy against the evils which inflation and credit expansion have brought about.

—Mises (1996), Human Action, p. 576-7.

- Ongoing injections of new credit and money "created out of thin air":

- "The wavelike movement affecting the economic system, the recurrence of periods of boom which are followed by periods of depression, is the unavoidable outcome of the attempts, repeated again and again, to lower the gross market rate of interest by means of credit expansion.
  —Mises (1996), Human Action, p. 572.

- The boom *must* be followed by bust (other things being equal):

  "The boom cannot continue indefinitely. There are two alternatives. Either the banks continue the credit expansion without restriction and thus cause constantly mounting price increases and an ever-growing orgy of speculation, which, as in all other cases of unlimited inflation, ends in a "crack-up boom" and in a collapse of the money and credit system. Or the banks stop before this point is reached, voluntarily renounce further credit expansion and thus bring about the crisis. The depression follows in both instances."
  —Mises (1940), Interventionism, p. 40.

- "Instead of preventing inflation by prohibiting fractional-reserve banking as fraudulent, governments have uniformly moved in the opposite direction, and have step-by-step removed these free-market checks to bank credit expansion, at the same time putting themselves in a position to direct the inflation. In various ways, they have artificially bolstered public confidence in the banks, encouraged public use of paper and deposits instead of gold (finally outlawing gold), and shepherded all the banks under one roof so that they can all expand together."
  —Rothbard (2000), America's Great Depression, p. 25.

UNDERUTILIZATION O FACTORS IN THE FIRST STAGES OF A BOOM

"The advocates of credit expansion argue that what is wanted is more fiduciary media. Then the plants will work at full capacity the inventories will be sold at prices their owners consider satisfactory, and the unemployed will get jobs at wages they consider satisfactory. This very popular doctrine implies that the rise in prices, brought about by the additional fiduciary media, would at the same time and to the same extent affect all other commodities and services, while the owners of the excessive inventories and the unemployed workers would content themselves with those nominal prices and wages they are asking—in vain, or course—today. For if this were to happen, the real prices and the real wage rates obtained by these owners of unsold inventories and unemployed workers would drop—in proportion to the prices of other commodities and services—to the height to which they must drop in order to find buyers and employers."

The course of the boom is not substantially affected by the fact that at its eve there are unused capacity, unsold surplus inventories, and unemployed workers. Let us assume that there are unused facilities for the mining of copper, unsold piles of copper, and unemployed workers of copper mines. The price of copper is at a level at which mining dies not pay for some mines; their workers are discharged; there are speculators who abstain from selling their stocks. What is needed in order to make these mines profitable again, to give jobs to the unemployed, and to sell the piles without forcing prices down below costs of production, is an increment p in the amount of capital goods available large enough to make possible such an increase in investment and in the size of production and consumption that an adequate rise in the demand for copper ensues. If, however, this increment *p* does not appear and the entrepreneurs, deceived by the credit expansion, nevertheless act as if *p*

had really been available, conditions on the copper market, while the boom lasts, are as if *p* had really been added to the amount of capital goods available. But everything that has been predicated about the inevitable consequences of credit expansion fits this case too. The only difference is that, as far as copper is concerned, the inappropriate expansion of production need not be achieved by the withdrawal of capital and labor from employments in which they would better have filled the wants of the consumers. As far as copper is concerned, the new boom encounters a piece of malinvestment of capital and malemployment of labor already effected in a previous boom, which the process of readjustment has not yet absorbed.

Thus it becomes obvious how vain it is to justify a new credit expansion by referring to unused capacity, unsold—or, as people say incorrectly, "unsalable"—stocks, and unemployed workers. The beginning of a new credit expansion runs across remainders of preceding malinvestment and malemployment, not yet obliterated in the course of the readjustment process, and seemingly remedies the faults involved. In fact, however, this is merely an interruption of the process of readjustment and of the return to sound conditions. The existence of unused capacity and unemployment is not a valid argument against the correctness of the circulation credit theory. The belief of the advocates of credit expansion and inflation that abstention from further credit expansion and inflation would perpetuate the depression is utterly false. The remedies these authors suggest would not make the boom last forever. They would merely upset the process of recovery."

—Mises (1996), Human Action, p. 579-80.

THE WAY OUT

- "[W]hat the government should do, according to the Austrian analysis of the depression and the business cycle, is absolutely nothing. It should stop its own inflating, and then it should maintain a strict hands-off, laissez-faire policy. Anything it does will delay and obstruct the adjustment processes of the market; the less it does, the more rapidly will the market adjustment process do its work and sound economic recovery ensue.

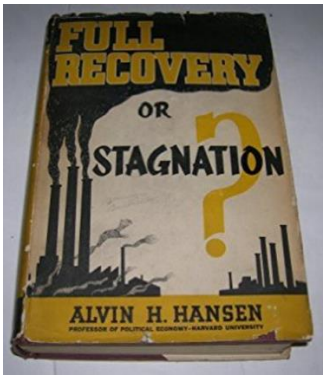
  The Austrian prescription for a depression is thus the diametric opposite of the Keynesian: it is for the government to keep absolute hands off the economy, and to confine itself to stopping its own inflation, and to cutting its own budget."

  —Rothbard (2002), For A New Liberty, p. 240.

14. Secular stagnation, zero and negative interest rates

THE PURPOSE OF THIS SESSION:
You will (1) learn about the theory of 'secular stagnation', (2) discuss policy recommendations to 'cure' secular stagnation, and (3) engage in a critical debate about the theory of secular stagnation.

READINGS:
Summers, L. H., The Age of Secular Stagnation: What it is and What to do about it, Foreign Affairs, 15 February 2016; Mises, L. v. (1998), Human Action; Mises, L. v. (2014), Kritik des Interventionismus.



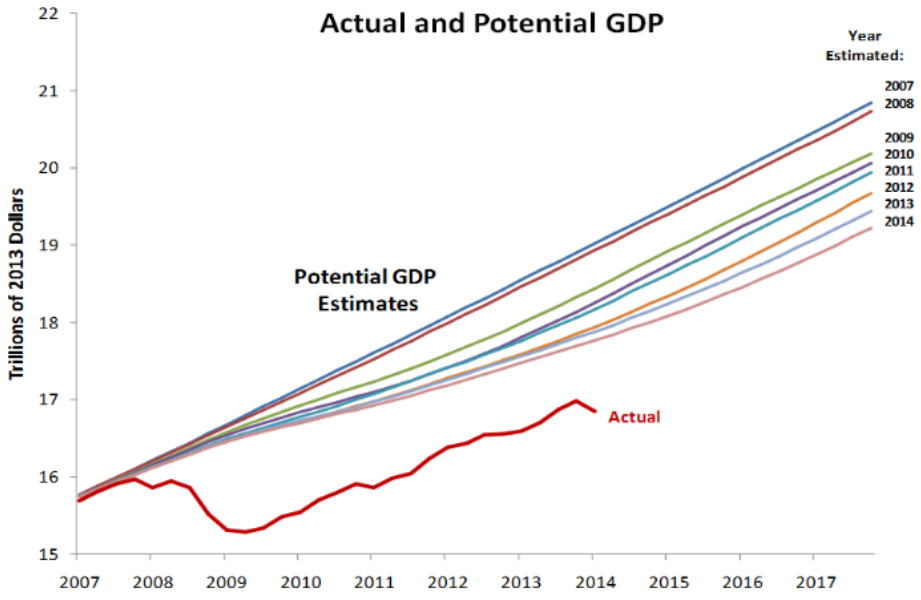
'Secular stagnation' – what does it mean?

- The term *secular stagnation* was coined by the US American economist Alvin Harvey Hansen (1987 – 1975). In his 1938 book *Full Recovery or Stagnation*, Hansen puts forward the theory that without further demand-side stimulus effect from the state, stagnant growth and employment will be the result.

- More recently, the US economist Larry Henry Summers (*1954) has become a prominent advocate of the theory of secular stagnation:

  "The economies of the industrial world … suffer from an imbalance resulting from an increasing propensity to save and a decreasing propensity to invest. The result is that excessive saving acts as a drag on demand, reducing growth and inflation, and the imbalance between savings and investment pulls down real interest rates. When significant growth is achieved, meanwhile—as in the United States between 2003 and 2007—it comes from dangerous levels of borrowing that translate excess savings into unsustainable levels of investment (which in this case emerged as a housing bubble)."
  —Summers, The Age of Secular Stagnation: What it is and What to do about it, Foreign Affairs, 15 February 2016.

Figure 1a. Actual and potential GDP in the US



Sources: Congressional Budget Office, Bureau of Economic Analysis

Summers, L., Reflections on the new 'Secular Stagnation hypothesis', 30 October 2014.

Policy recommendations

- Some economists recommend expansionary fiscal policies such as, for instance, ramping up *infrastructure projects*, financed by deficit spending; and …

- … they argue for pushing market interest rates into negative territory, as the 'neutral interest rate' (that is: the 'originary interest rate in Mises's terms) has actually become *negative*.

Some critiques

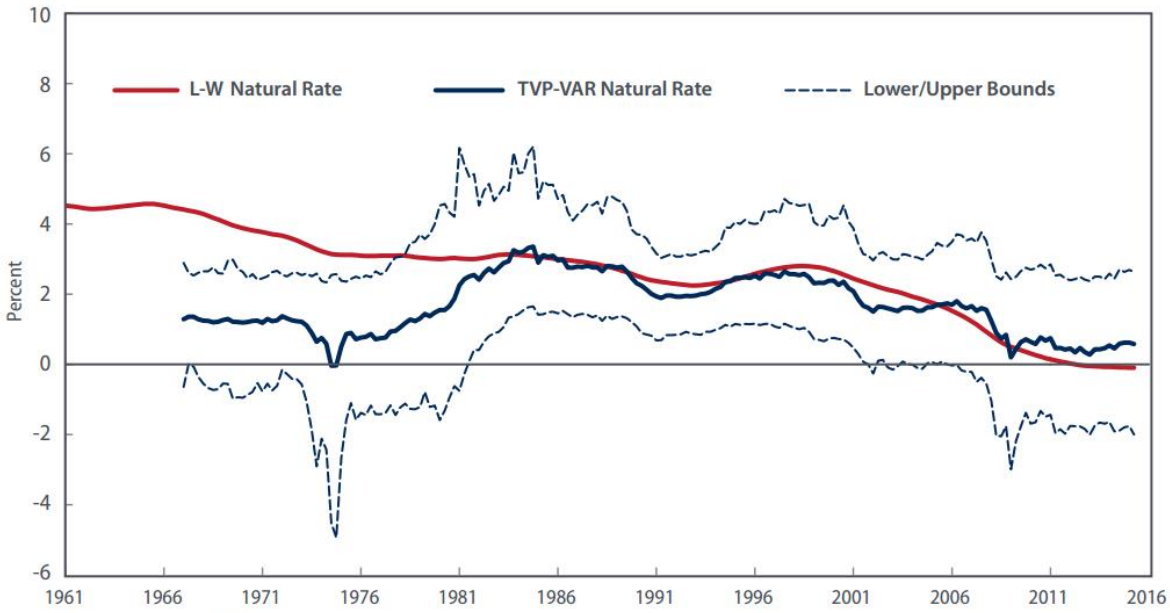
- *Critique 1*: Interventionism is the *problem*, not the solution

  ▶ In 1929, Mises published his book *Kritik des Interventionismus*. The argument runs as follows: Interventionism does not, and cannot, solve the problems it is meant to put to rest. The dislocations interventionism creates seem to cry out for further interventions. A downward spiral sets in: More problems cause more interventions, which cause more problems. The end of interventionism is socialism, a fate which can be logically avoided only by a sharp turn towards free markets.

  ⟶Think about the following factors: (1) Taxation, (2) regulation, (3) unbacked paper money, (4) government deficit spending, (5) bureaucracy etc. What might their impact be on growth from the 'Austrian' point of view?

- *Critique 2*: The originary interest rate cannot become zero, let alone negative

Figure 3: Natural Rate Calculations from Laubach-Williams vs. a TVP-VAR Model



Sources: Authors' calculations using a time-varying parameter vector autoregressive (TVP-VAR) model; Laubach and Williams (2003) with updated estimates from the San Francisco Fed

Notes: The solid blue line marks the median posterior estimate, and the dashed blue lines indicate the upper and lower bounds of the 90 percent confidence region.

Source: Thomas A. Lubik, Christian Matthes, Federal Reserve Bank of Richmond, Economic Brief, October 2015.

- Time-preference is always and everywhere positive, and so is the originary interest rate. This is, first and foremost, what common sense would tell us.

  ▶ If the originary interest rate was near-zero, it means that you prefer two apples available in, say, 1,000 years over one apple available today. A truly zero originary interest rate implies that the actor's planning horizon or "period of provision" is infinitely long, which is another way of saying that he would never act at all but would continually push the attainment of his goals into the future.

- The notion that time-preference and the originary interest rate could be zero, does not only sound absurd, it is also a *logical impossibility*: Positive time-preference and a positive originary interest rate are logically implied in the irrefutably true "axiom of human action."

  ▶ Human action is purposive behavior, implying the use of means to achieve ends. Action requires time (it is impossible to think otherwise). Thus, time is an indispensable and scarce means for achieving ends. As such, it must be economized, which necessarily implies that an earlier satisfaction of wants is preferred over a later satisfaction of wants.

  ▶ For (praxeo-)logical reasons, therefore, time preference and the originary interest rate cannot fall to zero, let alone become negative. The implications of a negative originary interest rate cannot even be conceived by the human mind: A zero originary interest rate already implies no action ever into eternity.

  ⟶*Note*: Of course, time preference can fall, and so the originary interest rate can fall. However, they cannot become zero (let along negative).

Critique 3: The originary interest rate does not only sit in the credit markets

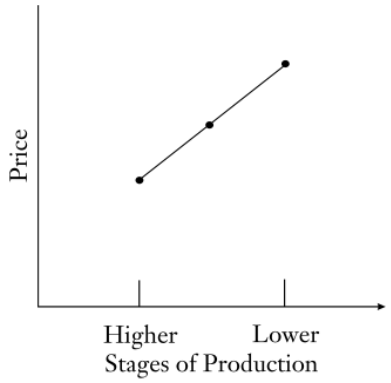


FIGURE 46. RELATION OF CUMULATIVE FACTOR PRICES TO STAGES OF PRODUCTION

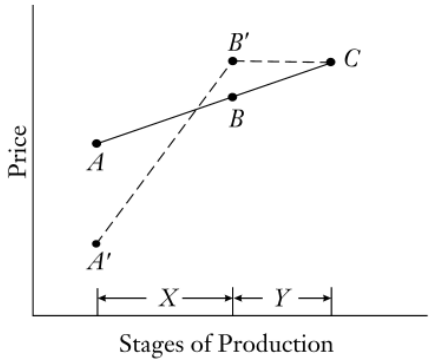


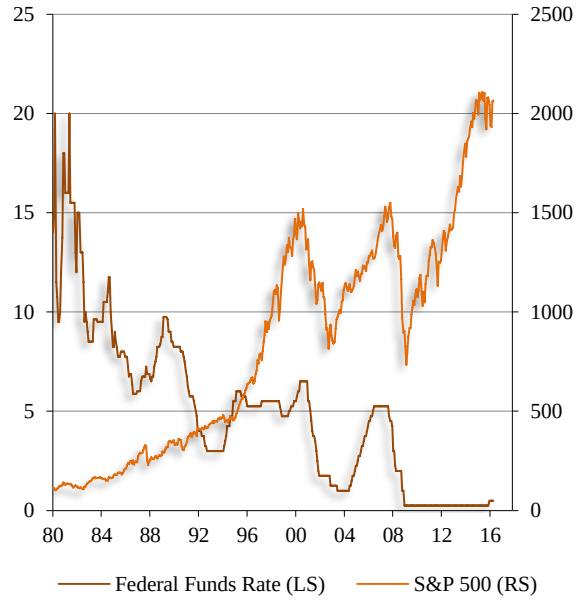
FIGURE 47. EFFECT OF THE TENDENCY TOWARD A UNIFORM RATE OF INTEREST

Rothbard (2009), Man, Economy, and State, p. 407-8.

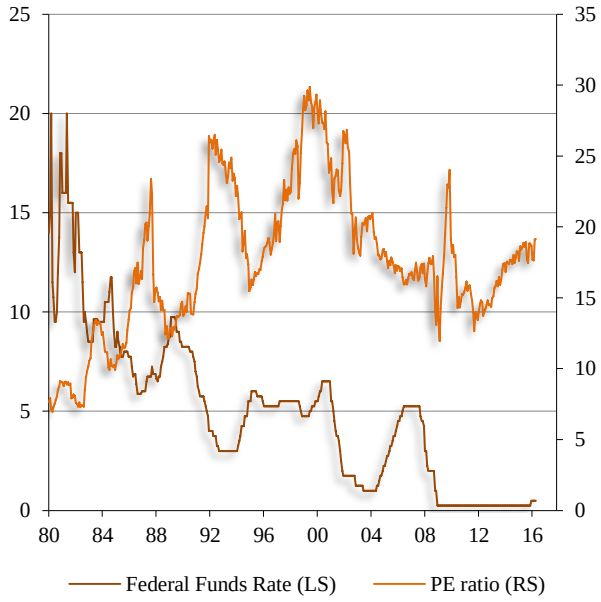
- How can we interpret the two charts below?

On the relation between interest rates and the stock market

(a) US Federal Funds rate in % and S&P 500



(b) Federal Funds Rate in % and price-earning (PE) ratio



Source: Thomson Financial.

15. On "QE" and other 'unconventional monetary policies'

THE PURPOSE OF THIS SESSION:
You will learn (1) what "QE" means, (2) what it does, and (3) how it is connected to the idea of 'helicopter money'.

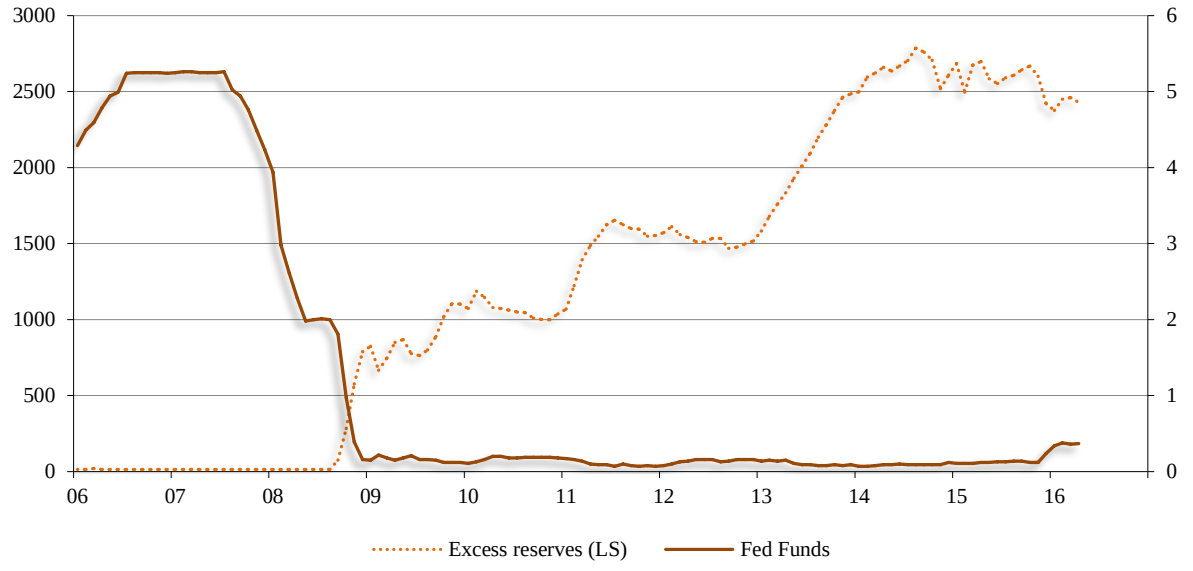
READINGS:
Polleit, T. (2016), The Euro Zone Embraces "Helicopter Money", Mises Wire, 20 April.

"QE" – what does it mean?

- "QE" is an acronym, and it stands for "quantitative easing". It typically denotes an increase in the amount of *base money* (or: monetary base, for that matter) if and when central bank interest rates have reached very low (even negative) levels.

- The Bank of Japan used QE in the early 2000 – and abandoned it in early February 2001 calling it "ineffective".

US Federal Funds Rate in percent and banks' excess reserves in US$bn



Source: Thomson Financial.

How does QE work, technically speaking?

- Look at *Example 1*, in which the central bank buys securities from the commercial banking industry:

Assets	Fed		Liabilities
Securities	10	Deposit of US banks	10
	+4000		*+4000*

Assets	US banks		Liabilities
Base money	10	Demand deposits	2000
	+4000	Time	6000
Loans extended	13990	Other	4000
	-4000	Equity	2000

▸ What happens is that (1) the amount of excess reserves increase and (2) the bonds (and thus credit risks) is being removed from commercial banks' balance sheets.

▸ Assume the Fed bought bonds issued by the US government. *Question*: What happens if the US government services its debt?

- Now look at *Example 2*, in which the Fed purchases bonds from non-banks (such as, for instance, households and insurance companies).

→*Question*: What happens to the base money and the stock of commercial bank money?

Assets	Fed		Liabilities
Securities	10	Deposit of US banks	10
	+1000		*+1000*

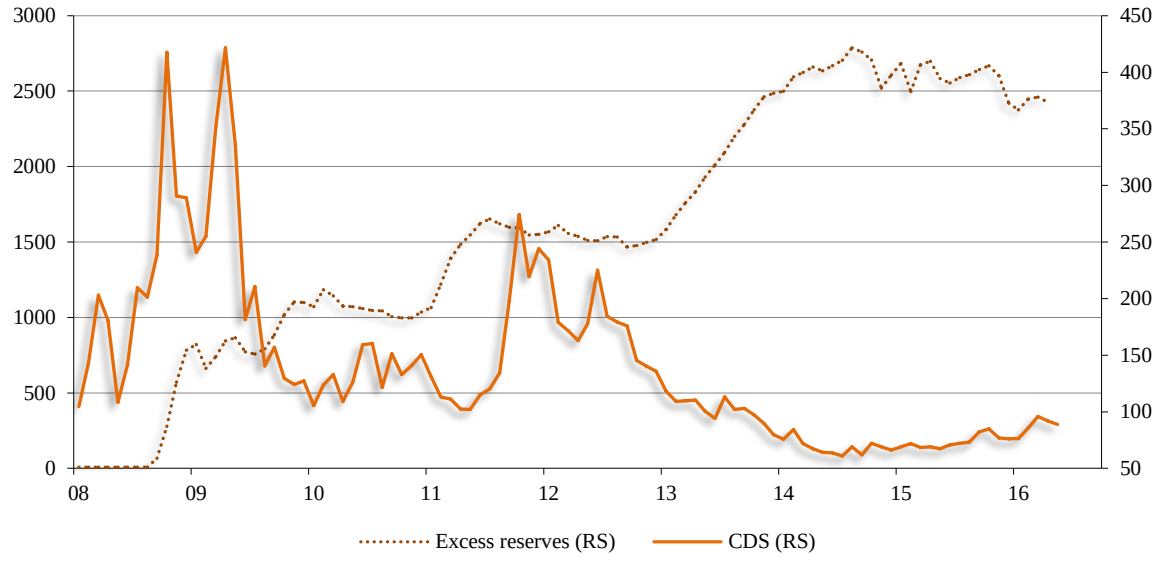
Assets	US banks		Liabilities
Base money	10	Demand deposits	2000
	+1000		*+1000*
Loans extended	13990	Time	6000
		Other	4000
		Equity	2000

Assets	Joe Sixpack	Liabilities
Securities	1000	
	-1000	
Demand deposit	*+1000*	

Why do central banks QE?

- In the financial crisis 2008/2009, banks found themselves into trouble. Their bonds matured, but they didn't have the funds to redeem the bonds. At the same time, it was basically impossible for them to borrow new funds in the capital markets.

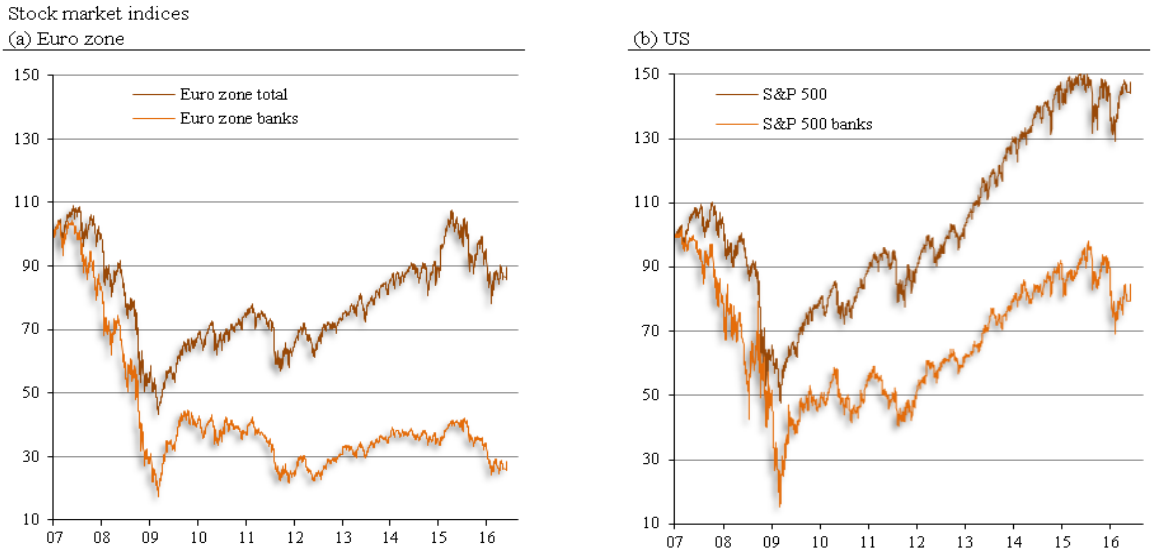
US excess reserves in the banking system (US$bn) and
CDS spreads for US bank bonds, 5 year maturity, in basis points



Source: Bloomberg.

- That said, QE is a policy of preventing banks from defaulting on the payment obligations. This, in turn, is said to be necessary to prevent the overall economy from coming crashing down.
-
- It is also argued that QE would (directly or indirectly) bring the economies back production and employment gains. (What do you think about this argument?)

- What are banks going to do with their excess reserves? They could (1) extend loans to, say, corporates and private households and/or (2) purchases outstanding debt in the capital markets.



Source: Bloomberg, own calculations.
Series are indexed (January 2007 = 100).

- For extending loans to, say, the corporate sector, however, banks needs equity capital. What if banks do not have sufficient equity capital, allowing them to expand their business?

- In this case, QE just increases banks' excess reserves, but it does not spill over into banks churning out more credit and money to the overall economy. It is here where the idea of *helicopter money* comes into play.

On helicopter money

- The term goes back to Milton Friedman (1912 – 2006). Helicopter money may come in different forms, but it basically means that the central bank hands out newly created money for free.

- At the press conference in April 2016, ECB president Mario Draghi said that helicopter money "is a very interested concept … but we haven't studied it."

- Helicopter money implies (as already indicated) that money is no longer produced through bank credit expansion. It is money that is directly transferred to beneficiaries (be it government, private households and/or corporates)

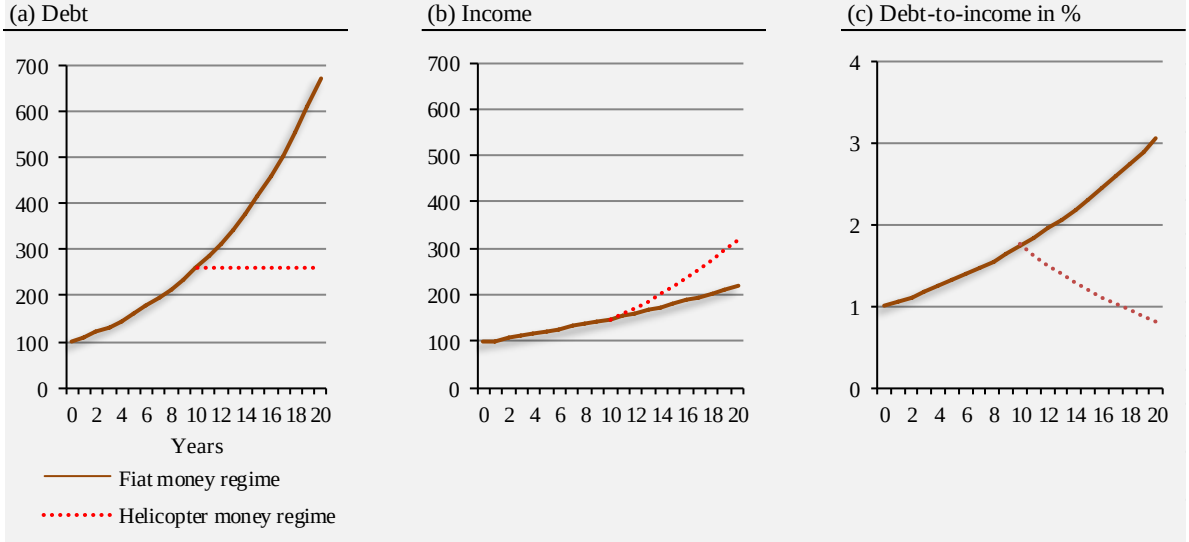
- What are the implications of a policy of 'money for free'?

  ⟶How gets the money, and who gets it first? And how much money should be issued?

  ⟶What would be the political consequences?

  ⟶What could be the political-economic incentive to take recourse to helicopter money?

One may hope that by issuing 'helicopter money', the trend towards over-indebtedness, caused by fiat money, might be broken. Put into practice, however, helicopter money may well turn out to be highly inflationary. In fact, it may end up in a desaster (like in the French Revolution).



Source: Own calculations.

- Once the revolutionary government in France decided to give out assignates, nothing could contain its further issuance. In his book Fiat Money Inflation in France (1896), Andrew D. White notes in this context:

  "[T]he old cry of a "scarcity circulating medium" was not stilled; it appeared not long after each issue, no matter how large. But every thoughtful student of financial history knows that this cry always comes after such issues — nay, that it must come, — because of obedience to a natural low, the former scarcity, or rather insufficiency of currency recurs just as soon as prices become adjusted to the new volume, and there comes some little revival of business with the usual increase in credit."

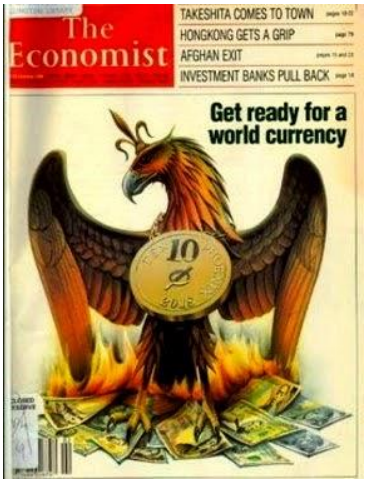
  In view of the economic catastrophe caused by hyperinflation as a direct consequence of ever greater issuances of unbacked paper money, White observes:

  "The acute suffering from the wreck and ruin brought by assignats, mandats and other paper currency in process of repudiation lasted nearly ten years, but the period of recovery lasted longer than the generation which followed. It required fully forty years to bring capital, industry, commerce and credit up to their condition when the Revolution began, and demanded a "man on horseback," who established monarchy on the ruins of the Republic and threw away millions of lives for the Empire, to be added to the millions which had been sacrificed by the Revolution."
  — White, A. D. (1933 [1896]), Fiat Money Inflation in France, How It Came, What It Brought, and How It Ended (D. Appleton-Century Company: New York, London), p. 46 and p. 62.

16. The idea of launching a single world currency

THE PURPOSE OF THIS SESSION:
You will (1) learn about the economic rationale for having a single world currency, (2) understand there is a political tendency working towards establishing a world currency, and (3) think about its (un)desirability.

READINGS:
Hoppe, H.-H. (2006), Banking, Nation States, and International Politics: A Sociological Reconstruction of the Present Economic order, in: The Economics and Ethics of Private Property.



The *economic* drive towards a single world currency

- There is an economically driven trend towards establishing a single world currency:

  A single world currency maximizes the productivity of money being used as a *means of economic calculation*.

  The co-existence of more than one currency still represents a kind of (unproductive) barter.

  In the past, under relatively free market conditions, *gold* was chosen as the world-wide accepted means of payment.

  Note: A single world fiat currency can only emerge out of already existing monies (or fiat monies, for that matter, which were previously established on the back of commodity monies).

The *political* drive towards a single world currency

- The trend towards establishing a single world currency seems to be alive and kicking under a state controlled (fiat) money system. Consider the following monetary regimes:

  ⟶The (pseudo) gold standard

  ⟶The gold exchange standard

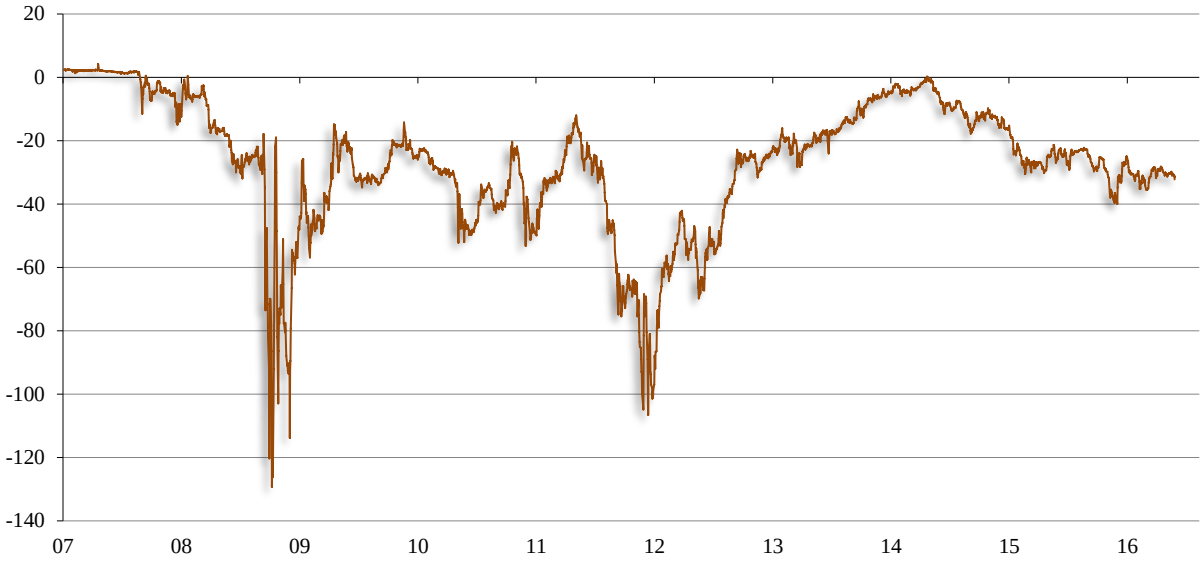
⟶The *Keynes-Plan*, the *White-Plan* and the System of Bretton Woods

⟶The *Special Drawing Rights* of the International Monetary Fund

⟶The euro project

⟶International policy coordination: *Liquidity swap agreements*

Euro cross currency basis swap in basis points



Source: Goldberg, L. S., Kennedy, C., Miu, J. (2011).

For example, consider the cost of borrowing euros in unsecured markets and converting them to dollars and then comparing that with borrowing dollars directly in the unsecured markets. This cost is defined as:

$$Basis_t^{eur\ \$} \equiv \frac{F_{t,t+s}}{S_t}(1 + r_t^{eurLibor}) - (1 + r_t^{\$\,Libor}),$$

where S_t is the foreign currency spot rate at time t, $F_{t,\,t+s}$ is the foreign currency forward rate contracted at time t for delivery at time $t+s$, and $r_t^{eurLibor}$ ($r_t^{\$\,Libor}$) is the uncollateralized euro (dollar) interest rate from time t to time $t+s$.

A liquidity swap agreement put into practice

Assets	Fed		Liabilities
Deposit with the ECB (€)	+100	Deposit of the ECB ($)	+110
			-110
		Deposits of euro banks ($)	+110

Assets	ECB		Liabilities
Deposits with the Fed ($)	+110	Guthaben der Fed (€)	+100
	-110		
Credit to euro banks ($)	+110		

Assets	Euro area banking sector		Liabilities
Deposit with the Fed ($)	+110	Liabilities vis-a-vis the ECB ($)	+110

⟶Robert Mundell's INTOR:

> "The International Monetary Fund could be turned into a world central bank and granted the authority to produce a world currency. The three largest currency areas could be designated as agents of the Board of Governors of the IMF. The numeraire currency might be equated to a dollar or a euro or 100 yen. We might call this new currency "intor" or "unor." Each participating member in the union would fix its local currency to the world currency, following the adjustment principles of a currency board, and denominate prices in the world currency as well as the local currency. The world currency itself would be backed by the currencies of the three largest central banks."
>
> —Robert Mundell, 2000, Currency Areas, Exchange Rate Systems and International Monetary Reform, S. 22.

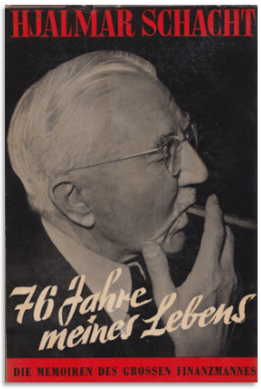
- The *pros* and *cons* of a single world (fiat) currency

  ⟶Praxeological/economic aspects

  ⟶Political aspects

- Some concluding remarks

  "Gold is a currency. It is still, by all evidence, a premier currency. No fiat currency, including the dollar, can match it." (Alan Greenspan, Council of Foreign Affairs, 29 October 2014).



„Die Banknote oder das Staatspapiergeld haben sich nur dadurch einführen können, daß der Staat oder die Notenbank versprachen, den ausgegebenen Papiergeldschein jederzeit in Gold umzutauschen. Diese Möglichkeit der Einlösung in Gold jederzeit sicherzustellen, muss also das Bestreben aller Papiergeldherausgeber sein. Ein Staat oder eine Notenbank, die diese Möglichkeit durch Fahrlässigkeit oder Willkür verscherzen, versündigen sich gegen die Staatsbürger."

Hjalmar Schacht, 76 Jahre meines Lebens, 1953, S. 207 – 208.

"It would be a mistake to assume that the modern organization of exchange is bound to continue to exist. It carries within itself the germ of its own destruction; the development of the fiduciary medium must necessarily lead to its breakdown." (Mises, 1953, p. 409)

„Die Tendenz zur schnellen Verringerung des inneren objektiven Tauschwertes des Geldes, die aus diesem Verhalten der Marktparteien entspringen müßte, würde durch die Konzentration der Umlaufsmittelbanken, die in Verbindung mit der allgemeinen Kartellierung, Vertrustung und Monopolisierung schneller vor sich gehen muß, eine außerordentliche Verstärkung erfahren. Die einzige Weltumlaufsmittelbank oder das Weltkartell der Umlaufsmittelbanken werden es in der Hand haben, die Umlaufsmittelzirkulation schrankenlos zu vermehren." (Mises, 1923, p. 475)

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