

Mises vs. Fisher on Money, Method, and Prediction:  
The Case of the Great Depression

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## Mises vs. Fisher on Money, Method, and Prediction: The Case of the Great Depression

By Mark Thornton<sup>1</sup>

Trained in the tradition of the Austrian school, Ludwig von Mises was the first modern monetary theorist. Writing in 1912, he was able to solve the classical dichotomy between microeconomics and monetary-macroeconomics and to answer the question: How does money get its purchasing power, or rather, how is the purchasing power of money determined? His important and famous solution was the Regression Theorem, in which Mises posited that a) the value of money today was based on its purchasing power yesterday and that b) this causal chain of reasoning goes backward in time to the point where money did not exist, just prior to a particular commodity going into use as a medium of exchange. Thus, not only did Mises solve the classical dichotomy, he also made an important contribution concerning the nature of money: whatever money is, it must first serve as a commodity demanded in the marketplace.

Of course, Mises went on to make many more contributions to economic theory and analysis. Particularly noteworthy are his contributions to the socialist calculation debate, his business cycle theory, and his contributions regarding the nature of economics within the social sciences and the relationship between economic theory and economic history. His contributions to the Socialist Calculation Debate are particularly noteworthy

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<sup>1</sup> Mark Thornton is Senior Fellow at the Ludwig von Mises Institute. I would like to thank Stephen Carson and Paul Wicks for useful comments and suggestions.

because Mises has been credited for both starting and winning the debate despite a long and growing chorus of opponents. For nearly 70 years they scoffed at Mises's theory—with nearly the entire economics profession believing that it was socialism that would eventually be triumphant. And then, to almost everyone's surprise the Berlin Wall fell, the Soviet Union disintegrated, and Red China converted to capitalism and now is in the process of buying up the rest of the world. Although he himself would scoff at this proposition, real world events have proved that Mises was right.<sup>2</sup>

Mises's other contributions have not yet been so fortunate. His proof of the microeconomic foundations for the determination of the purchasing power of money—the Regression Theorem—has not been accepted by the mainstream economics profession, except in the very limited sense that they accept the notion that the value of money must have some microeconomic basis, but not the particulars of Mises's approach and certainly not his conclusion that money has a foundation as a commodity good and cannot be created *de novo*.<sup>3</sup> Mises's "theoretical metallism" was, according to Schumpeter (1954, p. 289-93), more popular prior to Mises's extension of the doctrine than after.

Mises's contribution to business cycle theory, where he combined Wicksell's contributions with existing Austrian theory to produce the Austrian theory of the business cycle, was largely ignored by mainstream economics until the posthumous recognition associated with the granting of the Nobel Prize in economics to Mises's student, F. A. Hayek, for his elaboration of Mises's Austrian business cycle theory. Finally, Mises's

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<sup>2</sup> See Lavoie (1981) for a review of the debate. Also see Salerno (1990) and Rothbard (1991) for a more precise explanation of Mises's contribution and the downfall of socialism.

<sup>3</sup> See Rothbard ([1962] 2004) and Gertchev (2004) for more information on this subject. See Hoover (2006) for a mainstream perspective on the microeconomics of macroeconomics. He declares that Mises's extreme apriorism "provides the underlying vision of modern microeconomics."

work on the nature of economic science and its relation to history is “positively” deplored by mainstream economists who stubbornly maintain their mantra to positivism.

The looming question is: how will history ultimately report on Mises’s contributions? Will he be a one-hit wonder with the Socialist Calculation Debate and be otherwise forgotten? Or will he be vindicated on his other contributions? Will mainstream economic analysis continue to be dominant? Or will it be seen one day in the future as a hopelessly ill-conceived and a painfully long detour away from sound economic analysis? The purpose here is to provide one insight into that future—a very important and mostly ignored example—that will give us some foresight on how that future will unfold. This insight is based on an examination of how well economists such as Mises forecast the 20<sup>th</sup> century’s most important economic event—the Great Depression. We compare Mises’s performance to that of Irving Fisher, the inventor of modern mainstream economics.<sup>4</sup> The results of this investigation are of much more than of simple antiquarian interest because it provides evidence regarding the validity of Mises’s and Fisher’s contributions to economics, and their contributions in turn represent the foundations of Neoclassical and Neo-Austrian economics, especially with respect to the nature of money and interest, monetary and business cycle theory, and the role of history in economic methodology. Representing nearly polar-opposite views, Fisher placed prediction at the heart of his science and yet had no foresight of the Great Depression, while Mises cast economic forecasting outside the realm of economic science and yet was able to predict the depression and accurately describe the pitfalls of Fisher’s monetary system in 1928. As such, this comparison provides evidence both on the merits of Mises’s contributions and the likelihood of their ultimate triumph.

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<sup>4</sup> Tobin (1985, 1987) for example shows the wide-ranging impact of Fisher on modern economics.

## Fisher the prophet of modern economics

Irving Fisher was one of the first American neoclassical economists and one of the most celebrated economists of the 20<sup>th</sup> century. Fisher is considered a pioneer in virtually every aspect of neoclassical economics and is considered the greatest American economist of all time. As Formaini (2005) concluded:

Modern economics was going through tremendous changes during Fisher's college years, and he helped lead it in the direction that produced its current reliance on mathematics, general equilibrium analysis and aggregate data sets for the calculation of various price indexes. In this transformative undertaking, he should be ranked along with Leon Walras, Stanley Jevons and Francis Edgeworth. His theoretical work touches on almost every major macroeconomic issue and is still regularly consulted and cited, not only by historians of economic thought, but also by practicing economists. That, in itself, sets him apart from most of his contemporaries.

While most economists from America's Progressive Era continue to fade in importance over time, Fisher continues to gain in importance as an original thinker in virtually all the major tenets of modern mainstream economics, particularly macroeconomics and monetary policy.<sup>5</sup>

Fisher wrote the first dissertation in economics at Yale University, *Mathematical Investigations in the Theory of Value and Prices* ([1892] 1925). It was directed in part by members of the Yale mathematics faculty and became a true landmark in the development of mathematical economics. The use of mathematics in economics spread in the first half of the 20<sup>th</sup> century and came to dominate the economics profession in the

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<sup>5</sup> Tobin (1987, p. 370) shows that citations to Fisher's work have been increasing relative to other important Progressive Era economists.

second half of the century. It now enjoys near complete supremacy in graduate programs and in the leading academic journals devoted to economics. Likewise, the general equilibrium theorizing from his dissertation has also become the stock in trade of mainstream economics.

Fisher also changed how the economics profession viewed the quantity theory of money. He converted the classical view of the quantity theory from a *theory* into a *mechanism* that could (and should) be manipulated in order to stabilize the value of money. He presented his view in *The Purchasing Power of Money* (1913), where he introduced his concept of a “compensated dollar.” He wanted to change our notion of the dollar from one of a coin with a constant weight of gold to one of a currency that had constant purchasing power. He is therefore credited with forming the foundations of monetarism and the monetary policy rules used today by central bankers.<sup>6</sup>

Fisher’s development of index numbers as a method of measuring the purchasing power of the dollar is also a trademark of the modern economic orthodoxy. His policy of price-level stabilization requires the central bank’s monetary policy to target and stabilize a price index. Fisher was one of the first to define and calculate index numbers and he even began to publish a weekly wholesale price index in the early 1920s. His foundational work in *The Making of Index Numbers* (1922) showed the basis of how central bankers could conduct and review monetary policy. Modern mainstream economists today would view any other approach to monetary policy as unscientific. And they are in agreement with Fisher that price-level inflation and deflation are inherently bad things, and that the value of the dollar (as measured by price indexes) should be

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<sup>6</sup> On the connection between Fisher and Friedman (who declared Fisher “the greatest economist of the twentieth century”) see Rothbard [1971] 2002.

stabilized like physical measurements such as the meter or kilogram. Fisher (1925) can also be credited with one of the first attempts to dismiss the business cycle as an independent economic concept.<sup>7</sup> He even discovered the famous Phillips curve (which depicts an inverse relationship between inflation and unemployment, which long dominated public policy debate) decades prior to A. W. Phillips.<sup>8</sup> In this light, modern macroeconomics can be seen as nothing but a thick layer of dust on the foundations laid by Fisher.

In addition to all this academic success, Fisher was a successful inventor and entrepreneur. He was a successful writer, inventor, multimillionaire, and notable public figure. However, he was not without his problems. He had severe health problems early in his adult years and devoted several years to developing healthy living styles and new-age health diets. He was the leading academic proponent of alcohol prohibition—writing three books in its support—only to see it repealed as a failed “experiment.” He was a proponent of eugenics, but social engineering via genetics fell into disrepute after the actions of the Nazis.<sup>9</sup> Fisher also had severe financial setbacks during the Great Depression and had to be supported by family members at the end of his life.

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<sup>7</sup> See Fisher (1925) where he attempt to empirically show that it is the instability of the purchasing power of the dollar that is the problem, not the business cycle per se. Mainstream economists also dismiss the idea of the business cycle and that the cycle is really just “shocks” and “real factors” that cause changes in the economy. See for example Milton Friedman’s (1993) plucking model.

<sup>8</sup> Fisher’s paper was reprinted by the *Journal of Political Economy* in 1976.

<sup>9</sup> On the place of eugenics in economics see Leonard (2005a, 2005b, 2005c).

## The Great Case Study: Predicting the 1930s Depression

The first “new era” of the twentieth century took place during the 1920s. World War I had ravaged the developed world, central banks had been established across the globe, and the U.S. had become an economic and military world power. The Progressive Era had reinvented America, giving women the right to vote, establishing a federal income tax, and prohibiting alcohol across the nation. However, with the world at peace and a series of tax cuts in place, the U.S. had a prosperous if not stable economy during the 1920s.<sup>10</sup>

The 1920s was also a decade that involved a technological revolution as important as the world has ever experienced. This was the decade when the airplane and automobile went into mass production. In communication, it was the onset of mass availability of the telephone and radio. Motion pictures were invented, along with electric household appliances such as the electric toaster and refrigerator. The use of petroleum products and electricity increased dramatically while the use of manual power decreased. Assembly-line production became ubiquitous and was seen as the key to industrial progress.<sup>11</sup>

This decade of economic boom and stock market bubble is often referred to as the Roaring Twenties. Rothbard ([1963] 1983) has persuasively shown that the principal cause of the boom and bubble was the Federal Reserve management of the nation’s money and banking systems. The nation, and indeed the world, had been fundamentally changed during the Progressive Era and the world economy no longer functioned automatically according to market discipline. Central banks could now engineer

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<sup>10</sup> For more on the impact of the tax cuts see Ekelund and Thornton (1986).

<sup>11</sup> See Parrish (1994) for a description of the important changes in the economy during this period.

unnatural swings in money supplies, interest rates, and foreign exchange rates.<sup>12</sup>

Therefore the best explanation of the Great Depression is that Federal Reserve policy led first to overly optimistic capital investments and then to the inevitable correction via the bust in the stock market and unemployment in the economy.<sup>13</sup> The length of the Great Depression is attributed not to the initial cause, but to subsequent government policies that were used to counter the symptoms of depression—policies that instead stymied the readjustment process.

Progressives such as Irving Fisher were the vanguard of the “new era” of the 1920s, proclaiming it to be nothing less than the early stages of a real-world utopia. Fisher was an enthusiastic supporter of Herbert Hoover and believed that the great economic prosperity of the 1920s was attributable to alcohol prohibition and, more importantly, the “scientific” stabilization of the dollar that had been undertaken by the Federal Reserve. In his view, this new technocracy would employ price indexes to measure the value of the dollar, and Federal Reserve policies would maintain a stable dollar. Using this approach Fisher believed that business cycles would be a thing of the past, and with his policies firmly in place Fisher was completely blindsided by the Great Depression.

Not only did he fail to predict the crash and depression, his predictions were consistently wrong and completely at odds with the course of actual events. Just two days after reaching the peak of the bull market of the 1920s Fisher reassured investors that he foresaw no problem in the stock market:

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<sup>12</sup> Rothbard (2002, parts 3 & 4) shows how money and banking were changed, and why.

<sup>13</sup> Rothbard ([1963] 1983). Interestingly, economist Steve Liesman described on CNBC (November 16, 2006) Rothbard’s explanation for the Great Depression when supposedly describing Milton Friedman’s contribution on the cause of the Great Depression.

There may be a recession in stock prices, but not anything in the nature of a crash. Dividend returns on stocks are moving higher. This is not due to receding prices for stocks, and will not be hastened by any anticipated crash, the possibility of which I fail to see. (Fisher, September 5, 1929)

In addition to alcohol prohibition and a “stable” monetary policy, Fisher placed a great deal of emphasis on the role of investment trusts. According to Fisher the market for stocks would remain buoyant because the small investor could now hold a diverse number of stocks that were professionally managed by purchasing shares of the investment trust companies (which were similar to today’s mutual funds). He thought that it was the trusts that brought more money into the stock market and that the trusts would allow investors to remain invested during bear markets.

A few years ago people were as much afraid of common stocks as they were of a red-hot poker. In the popular mind there was a tremendous risk in common stocks. Why? Mainly because the average investor could afford to invest in only one common stock. Today he obtains wide and well managed diversification of stock holding by purchasing shares in good investment trusts. (Fisher, September 5, 1929)

Even after stocks started to fall in value, Fisher (October 16, 1929) stated on October 15<sup>th</sup> that stocks had reached a “permanently high plateau,” and that he expected “to see the stock market a good deal higher than it is today within a few months” and that in any case he did “not feel that there will soon, if ever, be a fifty or sixty point break below present levels.” However, on October 22 he was quoted as saying that he believed “the breaks of the last few days have driven stocks down to hard rock. I believe that we will have a ragged market for a few weeks and then the beginning of a mild bull movement that will gain momentum next year.” However, on October 24 he was quoted as saying that if “it is true that 15 billion in stock quotation losses have been suffered in

the present break I have no hesitation in saying values are too low.” And yet once again, on the next day the *New York Times* reported the “Worst Stock Crash” with nearly 13 million shares swamping the market.

Less than a week later, on October 28<sup>th</sup> and 29<sup>th</sup>, the Dow Jones Industrial Average (DJIA) plummeted, with almost a 70 point “break” and a two-day loss of almost 25%. The stock market lost one-third of its value during October 1929, and on November 3<sup>rd</sup> Fisher was quoted as saying that stock prices were “absurdly low.” However, stocks had much further to fall, and in the two years following his predictions the DJIA lost almost 90% of its peak value and the market value of the leading investment trusts lost 95% of their market value. Not until the modern-day pundits of the technology stock bubble of the late 1990s was such a dismal record of predicting stock markets replicated. The stock market crash signaled the beginning of the Great Depression, the longest and most severe economic decline in modern history.

Well after the fact, Irving Fisher (1932, p. 75) identified what a “New Era” really was. In trying to identify the cause of the stock market crash and depression he found most explanations lacking. What he did find was that such new eras occurred when significant technological improvement resulted in higher productivity, lower costs, more profits, and higher stock prices: “In such a period, the commodity market and the stock market are apt to diverge; commodity prices falling by reason of the lowered cost, and stock prices rising by reason of the increased profits. In a word, this was an exceptional period—really a ‘New Era.’” The key development of the 1920s was that monetary inflation did not show up in price inflation as measured by price indexes, or as Fisher (1932, p. 74) noted: “One warning, however, failed to put in an appearance—the

commodity price level did not rise.” He suggested that price inflation would have normally kept economic excesses in check, but that price indexes have “theoretical imperfections.”

During and after the World War, it (wholesale commodity price level) responded very exactly to both inflation and deflation. If it did not do so during the inflationary period from 1923–29, this was partly because trade had grown with the inflation, and partly because technological improvements had reduced the cost, so that many producers were able to get higher profits without charging higher prices. (Fisher, 1932, p. 75)

Fisher had stumbled near a correct understanding of the problem of new-era thinking. Technology can drive down costs, increase profits, and create periods of economic euphoria. What he would not understand is that artificial monetary inflation is what prevents true economic signals (i.e. market prices and interest rates) and the rational economic calculation that they provide. Fisher’s so-called scientific approach of using price indexes to manage the economy and the money supply was what actually caused the biggest economic policy mistake in history.

Naturally this insight could not penetrate Fisher’s ego because he had recommended those monetary injections to prevent any decrease in the price level, and he never lost faith in scientific management of the economy or his devotion to the idea of a stable dollar. Fisher’s detailed analysis and painstaking investigations of the crash also did little to improve his economic forecasting.

As this book goes to press (September 1932) recovery seems to be in sight. In the course of about two months, stocks have nearly doubled in price and commodities have risen 5½. European stock prices were the first to rise, and European buyers were among the first to make themselves felt in the American market. (Fisher, 1932, p. 157)

He (1932, p. 158) attributed this “success” to inflationary measures undertaken by the Fed that were of deliberate “human effort more than a mere pendulum reaction.”

Unfortunately, not only was his prediction wrong—the world was only at the end of the beginning of the Great Depression—the “human effort” that he thought was the tonic of recovery was actually the toxin of lingering depression.

Fisher scoffed at the “mere pendulum reaction” of the market economy that actually can correct for the excesses in the economy by liquidating capital and credit—a concept that he clearly opposed. However, the facts suggest otherwise. In previous depressions the market economy liquidated the malinvestments of the boom, leading the economy quickly back to prosperity. During the Great Depression, the Fed cut the discount rate from 6% to 1.5% and Federal Reserve credit outstanding almost doubled between 1929 and 1932, but their efforts were the equivalent of blowing air into a broken balloon: money pumping at the Fed could only prolong and worsen the problem that they created during the 1920s.<sup>14</sup> Looking backward into history, Milton Friedman (a disciple of Fisher’s economic views) actually condemned the Fed for not doing enough (i.e. monetary inflation) in the early phase of the Great Depression. Likewise Friedman (1997) joined Paul Krugman in condemning the Bank of Japan for not doing enough monetary inflation to drive it out of its economic malaise during the 1990s despite the Bank’s zero interest rate policy.

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<sup>14</sup> Friedman and Schwartz (1963, p. 197) show that the money stock increased under the Federal Reserve from less than \$20 billion in 1914 to over \$60 billion in 1929.

## Mises on the Money

Was the Great Depression predictable? Was it preventable? The failure of the market economy to correct itself in the wake of the Great Crash is the most pivotal development in modern economic history, and its impact has continued to shape mass ideology and the structure of public institutions and economic policy. Unfortunately, very few saw the development of the stock market bubble or its cause, or predicted the bust and the resulting depression.

In Austria, economist Ludwig von Mises saw the problem developing in its early stages and predicted to his colleagues in 1924 that the large Austrian bank, Credit Anstalt, would eventually crash. More importantly, he wrote a full analysis of Irving Fisher's monetary views, published in 1928, where he (1928, p. 93) targeted Fisher's reliance on price indexes as a key vulnerability that would bring about the Great Depression, concluding: "because of the imperfection of the index number, these calculations would necessarily lead in time to errors of very considerable proportions."

Mises (1928, p. 95) found that Fisher's attempt to stabilize purchasing power was riddled with inherent technical difficulties and was incapable of achieving its goals. "In regard to the role of money as a standard of deferred payments, the verdict must be that, for long-term contracts, Fisher's scheme is inadequate. For short-term commitments, it is both inadequate and superfluous." He then demonstrated how Fisher-type monetary reforms do not cause stabilization and are actually the cause of booms and the inevitable busts that result in crisis and stagnation. He attributed the popularity of Fisher's reforms and the resulting business cycle to political influence and bad ideology:

The fact that each crisis, with its unpleasant consequences, is followed once more by a new “boom,” which must eventually expend itself as another crisis, is due only to the circumstances that the ideology which dominates all influential groups – political economists, politicians, statesmen, the press and the business world – not only sanctions, but also demands, the expansion of circulation credit. (Mises, 1928, p. 143)

In addition to demonstrating the inevitability of the crisis, he clearly identified its cause, where most others could not. The cause was not the rise in interest rates that accompanies the crisis, but rather the artificially low rates that caused the economic boom in the first place:

It is clear that the crisis must come sooner or later. It is also clear that the crisis must always be caused, primarily and directly, by the change in the conduct of the banks. If we speak of error on the part of the banks, however, we must point to the wrong they do in encouraging the upswing. The fault lies, not with the policy of raising the interest rate, but only with the fact that it was raised too late. (Mises, 1928, p. 147)

He showed that the central bank’s attempt to keep interest rates artificially low and to maintain the boom only makes the crisis worse. Despite the tremendous odds against the adoption of his solution, Mises ends his analysis with a prescription for preventing future cycles.<sup>15</sup>

The only way to do away with, or even to alleviate, the periodic return of the trade cycle – with its denouement, the crisis – is to reject the fallacy that prosperity can be produced by using banking procedures to make credit cheap. (Mises, 1928, p. 171)

In addition to Mises, his student F. A. Hayek apparently published several articles in early 1929 in which he predicted the collapse of the American boom. Felix Somary, who like Mises was a student at the University of Vienna, issued several dire warnings in the late 1920s, and in America economists Benjamin Anderson and E.C. Harwood also

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<sup>15</sup> For further explanation of the Austrian Business Cycle Theory and its application to the Great Depression see Rothbard (1963).

warned that the Federal Reserve policies would cause a crisis, and like Somary, they were largely ignored. (Skousen, 1991, p. 104-6)

### Calculation and Prediction in Economics

This case study clearly shows that Fisher failed to predict the Great Depression, made public predictions on investments that lost almost their entire value, and indeed helped create the mechanism that caused the Great Depression. Mises did predict the Great Depression and provided a clear diagnosis of why it would happen and how it could have been avoided. The result is a clear indictment of Irving Fisher and the neoclassical macroeconomics and monetarism that he created. His approach failed and continues to fail. The same results can be seen in the Great Inflation (i.e. “stagflation”) of the 1970s, the Japanese Bubble of the 1980s, the Technology Bubble of the late 1990s and the current Housing Bubble. Austrians have correctly predicted these critical bubble/depressions while the neoclassical mainstream economists have not.<sup>16</sup>

The motto of the Econometrics Society is “science is prediction.” The primary tenet of modern mainstream or neoclassical economics is that economics is an empirical science and that economic theory is an empirical construction. Positivism is the hallmark of modern economics, and the goal of mainstream economics is to be able to predict the future. Therefore the quality of economic analysis is judged not with the realism of your

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<sup>16</sup> See Thornton (2004a, 2004b, 2004c, 2004d, 2006) for a recap of how well economists predicted these important economic events.

assumptions or the quality of your constructions, theories and models, but only with the quality of your empirical results and forecasts. As such, it is a very pragmatic approach in that it disregards realism in favor of results. The hope of the neoclassical approach is that over time they will learn how to predict the future and this, in the words of Irving Fisher (1906, p. 261), allows us to “tamper with economic conditions.” The evidence presented here clearly suggests that Fisher and the Neoclassicals have not passed their own “market test” and that Mises and the Austrians have passed the neoclassical test.<sup>17</sup>

Finally, to more clearly draw the lines of debate it should be recognized that Fisher (1906, p. 257) explicitly denounced the Austrian *a priori* method and all “those who maintain that economics is not and never can be a true science (and who) base their contention on the fact that social phenomena are not constant.” He went on to declare the end of laissez-faire economics and to endorse the entire gambit of government intervention based on his so-called scientific approach. Fisher was as unguarded in his optimism as he was arrogant in his abilities when he advocated the supremacy of technocracy:

The world consists of two classes—the educated and the ignorant—and it is essential for progress that the former should be allowed to dominate the latter. But once we admit that it is proper for the instructed classes to give tuition to the uninstructed, we begin to see an almost boundless vista for possible human betterment. (Fisher, 1907, p. 20)

I would imagine that in Fisher’s worldview there would also be compulsory school attendance laws.

Irving Fisher created the neoclassical economics that is embodied in modern mainstream economics. This approach enshrines a nonrealistic approach to economic

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<sup>17</sup> For an in-depth analysis of the role of realism and abstraction in economics that contrasts the methods of Mises and Friedman see Long (2006).

theory and practitioners are often advocates of fascist economic and social policies.

Mises and the Austrian school take a realistic, value-free approach to economic theory and are champions of laissez-faire economic policy. As we have seen in the case of the Great Depression, Mises beat the mainstream at its own game. From this very clear perspective I believe that we can have great hope that Mises's contributions to economic science will one day be recognized for their correctness and usefulness as the guideposts of rational economic policy.

## References

Angly, Edward 1931. *Oh Yeah?* New York, NY: The Viking Press.

Ekelund, Robert B. Jr. and Mark Thornton. 1986. "Schumpeterian Analysis, Supply-Side Economics, and Macroeconomic Policy in the 1920s." *Review of Social Economy* 19, no. 3 (December): 221–237.

Fisher, Irving. [1892] 1925. *Mathematical Investigations in the Theory of Value and Prices*. New Haven, CT: Yale University Press.

Fisher, Irving. 1906. "Economics as a Science." *Science* 24, no. 609 (August 31): 257-261.

Fisher, Irving. 1907. "Why has the Doctrine of Laissez Faire been Abandoned?" *Science* 25, no. 627 (January 4): 18-27.

Fisher, Irving. 1913. *The Purchasing Power of Money: Its Determination and Relation to Credit, Interest, and Crisis*. New York, NY: The Macmillan Company.

Fisher, Irving. [1922] 1927. *The Making of Index Numbers; a Study of their Varieties, Tests, and Reliability*. Boston, New York: Houghton Mifflin Company.

Fisher, Irving. 1925. "Our Unstable Dollar and the So-Called Business Cycle." *Journal of the American Statistical Association* 20 no. 15: 179-202.

Fisher, Irving. [1926]1976. "I Discovered the Phillips Curve: A Statistical Relationship between Unemployment and Price Changes." *Journal of Political Economy* 81, no. 2: 496-502.

Fisher, Irving. 1929. *New York Herald Tribune*, September 5 (in Angly 1931).

Fisher, Irving. 1929. "Fisher Sees Stocks Permanently High," *New York Times*, October 16: 8 (in Angly 1931).

Fisher, Irving. 1929. *New York Herald Tribune*, October 22 (in Angly 1931).

Fisher, Irving. 1929. *New York Herald Tribune*, October 24 (in Angly 1931).

Fisher, Irving. 1929. Quoted in "Overeager 'Shoestring' Traders Caused Crash in Market, Says Fisher," *New York Herald Tribune*, November 3<sup>rd</sup> (in Angly 1931).

Fisher, Irving. 1932. *Booms and Depressions: Some First Principles*. New York, NY: Adelphi Company.

Formaini, Robert L. 2005. "Irving Fisher: Origins of Modern Central Bank Policy."  
*Economic Insights* 10, no 1, Dallas TX: Federal Reserve Bank of Dallas

Friedman, Milton. 1993. "The 'Plucking Model' of Business Cycle Fluctuations  
Revisited." *Economic Inquiry* 31, no. 2 (April): 171-77.

Friedman, Milton. 1997. "Rx for Japan," *Wall Street Journal*, December 17.

Friedman, Milton and Anna J. Schwartz 1963. *A Monetary History of the United States:  
1867-1960*. Princeton, NJ: Princeton University Press.

Gertchev, Nikolay, 2004. "Dehomogenizing Mises' Monetary Thought," *Journal of  
Libertarian Studies* 18, no. 3 (Summer): 57-90.

Hoover, Kevin D., "Microfoundations and the Ontology of Macroeconomics" (September  
24, 2006). Available at SSRN: <http://ssrn.com/abstract=932945>

Lavoie, Don. 1981. "A Critique of the Standard Account of the Socialist Calculation  
Debate," *Journal of Libertarian Studies* 5, no. 1 (Winter): 41-87.

Leonard, Thomas C. 2005a. "Retrospectives: Eugenics and Economics in the Progressive  
Era." *Journal of Economic Perspectives* 19, no. 4 (Fall): 207-224.

Leonard, Thomas C. 2005b. "Mistaking Eugenics for Social Darwinism: Why Eugenics is Missing from the History of American Economics." *History of Political Economy* 37, supplement: 200-233.

Leonard, Thomas C. 2005c. "Protecting Family and Race: The Progressive Case for Regulating Women's Work." *American Journal of Economics and Sociology* 64, no. 3 (July): 757-791.

Long, Roderick T. 2006. "Realism and Abstraction in Economics: Aristotle and Mises versus Friedman," *Quarterly Journal of Austrian Economics* 9, no. 3 (Fall): 3-23.

Mises, Ludwig von. [1912] 1981. *The Theory of Money and Credit*. Indianapolis, IN: Liberty Classics.

Mises, Ludwig von. [1928] 1978. *Geldwertstabilisierung and Konjunkturpolitik* [Monetary Stabilization and Cyclical Policy]. Jena: Gustav Fischer. English translation by Bettina Bien Greaves: in *On the Manipulation of Money and Credit*. Dobbs Ferry, NY: Free Market Books.

Parrish, Michael E. 1994. *The Anxious Decades*. New York, NY: W.W. Norton & Company.

Rothbard, Murray N. 1963. *America's Great Depression*. New York: Richardson & Snyder.

Rothbard, Murray N. 1991. "The End of Socialism and the Socialist Calculation Debate Revisited," *Review of Austrian Economics* 5, no. 2: 51-76.

Rothbard, Murray N. [1971] 2002. "Milton Friedman Unraveled," *Journal of Libertarian Studies* 16, no. 4 (Fall): 37-54.

Rothbard, Murray N. 2002. *A History of Money and Banking in the United States: The Colonial Era to World War II*. Edited by Joseph T. Salerno. Auburn, AL: Ludwig von Mises Institute.

Rothbard, Murray N. [1962] 2004. *Man, Economy, and State*. Auburn, AL: Ludwig von Mises Institute.

Salerno, Joseph T. 1991. "Postscript: Why a Socialist Economy is Impossible," in Mises's *Economic Calculation in the Socialist Commonwealth*, Auburn, AL: Ludwig von Mises Institute. Pp. 51-71.

Skousen, Mark 1991. *Economics on Trial: Lies, Myths, and Realities*, Homewood, IL: Business One Irwin.

Thornton, Mark. 2004a. "Uncomfortable Parallels," [www.LewRockwell.com](http://www.LewRockwell.com), April 18, 2004.

Thornton, Mark. 2004b. "The 'New Economists' and the Great Depression of the 1970s," Mises Daily Article, [www.Mises.org](http://www.Mises.org), May, 7, 2004.

Thornton, Mark. 2004c. "The Japanese Bubble Economy," [www.LewRockwell.com](http://www.LewRockwell.com), May 23, 2004.

Thornton, Mark. 2004d. "Housing: Too Good to be True," Mises Daily Article, [www.Mises.org](http://www.Mises.org), June 4, 2004.

Thornton, Mark. 2006. "The Economics of Housing Bubbles," Mises Institute Working Paper, June 12, 2006 and forthcoming in *America's Housing Crisis: A Case of Government Failure* edited by Benjamin Powell and Randall Holcombe.

Tobin, James. 1985. "Neoclassical Economics in America." *American Economic Review* 75, no. 6 (December): 28-38.

Tobin, James. 1987. "Irving Fisher." *The New Palgrave: A Dictionary of Economics*. Edited by John Eatwell, Murray Milgate, and Peter Newman. New York, NY: Stockton Press, Vol. 2: 369-376.