

1973: Financialization and the Conditions of Postmodernity

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Let's talk about money. When we discuss Financial Revolutions and the Primal Scenes of Capital, we probably should examine the creation of money in the attempt to trigger cycles of debt. Something of this sort transpired in Dutch business practices in the seventeenth century; it happened again around the end of the eighteenth century and led to the first theories of credit. And it is tied to the 1970s; to a moment, which more than any other in history, has been proclaimed an epic change in financial economy. It has been called a **historical watershed**, a **major discontinuity in the history of money**, a **unique process**, an **unprecedented** occurrence, a break with 2500 years of monetary history, in short: the beginning of a new economic era. You can probably guess what I mean here: it was a crisis of representation, performed by the dissolution of the Bretton Woods System. Let me quickly remember what Bretton Woods once was. On July 23, 1944, the representatives of 44 nations came together in the Mount Washington Hotel of Bretton Woods, New Hampshire, to discuss measures for establishing a new world financial order after the end of the war. The International Monetary Fund, the World Bank, and the World Trade Organization, all developed out of this meeting. With the goal of fostering unhindered circulation of capital and goods, the representatives there agreed upon a new currency system and financial automatism. All currencies were forced into a fixed relation to

the US dollar, and the dollar itself into a stable exchange relation with gold. This Gold-Dollar-System rested upon the concept of a fundamental equilibrium: the balanced exchange of money and gold. Through the mediation of the dollar, the gold standard was expected to take on an anchoring function; all of this was bound up with the hope that shocks in the financial system could be leveled out with a money supply – price mechanism.

No matter how to evaluate this post-war economic order, whether as a fruitful arrangement, an historical necessity, an economic enigma, or simply as a miscarriage – in the end one must acknowledge that its hopes went unfulfilled; the history of Bretton Woods is written as a story of demise. In the 1960s, against a backdrop of American foreign debt, the industrialized nations could no longer exchange their US dollars for gold; the USA itself threatened to prohibit the convertibility of the dollar; the Yen and the Deutsche Mark were greatly undervalued, and, when France and Great Britain demanded to exchange their dollar reserves for gold, Richard Nixon closed the so-called **Gold Window** in August of 1971. In 1973, the Bretton Woods System formally came to an end.

1973 not only marked the dismissal of an economic post-war order that bound the currencies of developed countries to a stable relationship with the US dollar and the dollar to a fixed exchange rate with gold; this break was also seen as a **condition postmoderne** in economics - a situation where turbulence and instability moved toward a flexible system of exchange rates, a regime of floating signifiers without an anchor, without the foundation of a transcendental signified. A system would now emerge in which currencies only related to currencies without reference and finally rested upon the uncertain standard of unsecured "fiat money."

To what extent, then, does the year 1973 mark the birth date of our present era? How can it be understood as the beginning of a financial system that even today holds us in thrall? What are the social experiments that it opened onto? And what sense, if any, does it make to speak here of a **postmodern condition**? -- Let me attempt to give an overview of some elements of this new global financial order.

However one may interpret the discharge of the international gold standard, it opened the way to a theoretical and practical testing ground and to the programs of a new liberalism. In 1971, Milton Friedman presented one of the most influential and basic papers in the history of economics. It distinguished itself by providing clear answers to the new

financial state of affairs. Friedman formulated the following argument on behalf of the Chicago Mercantile Exchange: after Bretton Woods, floating exchange rates and currency risks had become a precarious fact in international capital transactions. They created uncertainty and volatility, which resulted in high insurance costs for the transactions. It therefore seemed appropriate to make suitable financial instruments available, while leaving insuring procedures to the market mechanism itself. This could only occur through the creation of new financial markets and futures trading in foreign currencies. Floating rates would be hedged with currency futures contracts - price differences insured with bets on price differences. And if there is a new speculative market based on the difference between current and future prices, its consistent expansion would create a balancing effect. Here the need for insurance is combined with opportunities for risk and profit. "The larger the volume of speculative activity," Friedman said, "the better the market" will work, hedging trade and investment at low costs. Monetary policy is left to the dynamics of the market itself.

Friedman's short capitalist manifesto clearly defined the expectation about the new financial markets: the hope for a system of stable exchange rates is replaced by the hope of a stable system of exchange rates. In fact, in 1972 the spot market on the Chicago Mercantile Exchange was expanded to include an international market for currency futures. And within three decades, financial derivatives trading - which did not exist before 1970 - developed into the world's largest market. From an annual value of a few million dollars in the early seventies, its volume increased to 100 billion in 1990 and to 100 trillion dollars by the turn of the century, three times the global sales volume for consumer goods. On the one hand, the stock market became the model for financial economy, while the financial market became the model for all markets. On the other hand, this apotheosis implies the principle of risk transfer and therefore the expectation of being able to insure price risks by spreading them around and hedge speculative trading through speculative trading. The earlier promise of stability offered by glittering gold is now redeemed by the "magic" of the financial markets.

Within a few years, markets, products and operations were created that did not previously exist. And what starts to function by the beginning of the eighties was comprised of a wide variety of components that introduced a new business routine and took on the

character of a globally operating system. Let me consider some of these elements and their interactions more closely.

First: this foundational moment of modern finance is initially the result of some theoretical assumptions that relate to the mechanics of the market. The old economic hypothesis still prevails today that free markets are governed by an “invisible hand” and tend toward equilibrium. Since the 1930s, this classic theory has been reformulated as a “hypothesis of efficient markets” and based on the dynamics of financial economy. In this interpretation, the financial markets represent the markets as such and in their greatest purity. Unburdened by the complications of transport and production, they are ideal venues to set prices, to perfect competition, and to let rational, i.e. profit-oriented and reliable actors interact. That is why the movement of prices on these markets reflects immediately all available information. Insofar as all actors under these optimal conditions of competition have access to all relevant information, prices always express the truth of underlying economic events; the corresponding equities are never over- or undervalued. The ups and downs of the market are either due to annoying impediments to the dynamics of free markets, or to new, unforeseen information. Crises are only steps in the process of adaptation; they document the ineluctable march of economic reason. The market is the real is the rational.

The financial market is presented as a frictionless universe - where information, prices, and purchases in turn generate information, prices and purchases. So, a further essential condition is associated with this process that has an effect on modern financial economic models: the assumption of efficiency implies the assumption that within market events a stochastic random walk is produced. A dissertation from 1900 was rediscovered in the sixties in which the mathematician Louis Bachelier, under the supervision of Henri Poincaré, formalized the oscillation of stock prices following the example of a molecular drift (as in Brownian motion). In his *“Théorie de la spéculation”* successive price changes are independent from each other and determined by random variables; and the sum of speculative actions follows a movement that is similar to the diffusion of particles in gases. In the second half of the 20th century, these considerations were given a discursive framework and merged with the hypothesis of efficient financial markets. If the prices of these markets always contain all relevant information, then any change in them is due only

to new information that requires new decisions. And that means: when all entrepreneurs have access to all the circulating information, each isolated chance of making a profit is immediately used; and provided that each of these operations is reflected immediately in market prices, price variations can only appear randomly. Inherent to the rationality of the market is that information (i.e., price differences) is annulled in being utilized. The blessing of competition results in individual speculations cancelling out the speculative nature of the whole system - arbitrage abolishes the effects of arbitrage.

The path that price series follow between different time periods now falls in the field of probability and stochastics. It resembles a non-linear "random walk." On the one hand, the rationality of financial markets causes the bets on future prices to look like a chimpanzee throwing darts at the financial section of a newspaper blindfolded. The more efficient the market, the more random the oscillations. On the other hand, a kind of equilibrium is created in which random fluctuations arrange themselves around the average and follow the dispersion of a normal distribution, a bell curve. The **invisible hand** of Adam Smith gets a new theoretical form.

Second: as the situation in the early seventies was characterized by the question of how price risks can be hedged by betting on price risks, futures transactions accordingly assumed a central function in the history of the financial economy. They should be recognized as perfect capitalist inventions; they are as old as capitalism itself, and the tendency toward the future had been an essential motor for the development of ever-new financial instruments. On the one hand, futures are trivial and a long-standing element in the functioning of a stock exchange: they are contracts about the buy-off of commodities at a future date, but at a determined price; a contract, that binds both parties to the acceptance of a contingent future. On the other hand, the history of futures trading shows that it implies a non-trivial detachment of time trading and commodities exchange. Futures and options trading avoids the physical conditions of production and dissolves the identity of commodity and price. In other words: somebody who does not possess a commodity and neither expects nor wants it, sells this commodity to someone who does not want it and never gets it.

The dynamics of futures trading, the motor of capitalist economy, rests on two main presuppositions. First, on a self-referential communication: prices refer not to commodities

and goods, but to other prices such that present prices for absent goods are determined by the expectation of future prices for absent goods. This kind of trade is freed from all material impediments. It performs an act that culminates not in the re-presentation but in the de-presentation of world. As part of the circulating money supply, futures ensure maximum liquidity and complete the logic of the modern capital and credit economy. Secondly, transactions of this kind rely on what in the tradition of Roman Law are called gambling contracts – contracts that pertain to transactions with unclear outcomes to unclear future events. This leads to the indistinction between trading, betting and gambling; the name for this phenomenon is 'speculation'. The risky bet, the gamble with the future, is at the very core of all economic activity. A speculator is one who does not speculate. Speculation is the norm of all financial transactions.

Third: futures transactions represent a logical pendant to capital and credit institutions, as financial derivatives are a cash-independent form of money. This poses a fundamental problem for the financial economy. On the one hand, the market is supposed to realize old ideas of equilibrium and stabilize itself by offsetting price risks with price risks. On the other hand, located at the center of this market are futures transactions with financial assets that are distinguished by the fact that they shift current price risks to uncertain futures. Contingent futures - that is, the forces of time - have become a critical factor in this system, and indeed these issues have occupied economists since the seventies more than any others. The logic of the modern financial economy demands a process wherein economic decisions are linked with future expectations. It must be able to ensure that time will be controlled, uncertain futures being mastered. Only if the uncertainty of future prices can be offset by the prices for the uncertainty of these prices, the equalizing force of futures transactions will succeed in taming time and maintain stability in the system. This leads to the question which calculation makes the transition between present futures and future presents probable - how the dissimilarity of the future can be transformed into a similar present. It is not surprising that the most prominent of these experiments coincided with the end of Bretton Woods. These methods focused on introducing probabilistic figures into the heart of financial and economic business practices. At issue was a well-known formula developed by the mathematicians and economists Robert Merton, Fischer Black and Myron Scholes in the early seventies.

This calculation, which was honored with a Nobel Prize and said to be as significant to the financial markets as Newton's mechanics was for physics, addresses the stated problem: How can one eliminate the risks of the financial markets by trading in risks (such as financial derivatives)? It involves creating expectation products with which the values of future yields may be converted into present values; it concerns stabilizing the dynamic imbalance of the credit economy and floating currencies. The price calculations for particular types of financial derivatives demonstrate the efforts of Black, Scholes and Merton to manufacture a theoretical object that combines the mathematical formalization of certain regulatory ideas with some hypotheses on the mechanism of financial markets. This means they formulated a general model for the structuring of trade in financial derivatives and for the equalizing trends of the entire system.

The aim is to calculate a price horizon from existing prices (such as for stocks), which, from the standpoint of a future present, can become the basis of evaluation for a present future. The current price of a derivative is only justified if a possible future with regard to its underlying value recurs in it. Only this replication of future developments validates the expectation that the risks of floating prices can be compensated by trading with these risks. And that influences the parameters of the famous differential equation that tries to grasp the stochastic processes with a function for logarithmic normal distribution (Fig.). Simply put, besides some well-known quantities, the problematic item, the unknown volatility (σ) is calculated according to the random movements of the underlying values in historical time periods. One does not have to guess at the events of possible futures, but only calculate the oscillation within which they could take place. In this calculation, in other words, the assumption is built in that the unpredictable about the future will behave according to the distribution of past unpredictabilities. There are no specific predictions, but only the predictions of distribution patterns.

Several things must be noted in this calculation concerning the financial system. First, it may be recognized that the usual market logics can be represented mathematically - they are physicalistic, encoded on the model of differential equations for diffusion processes in statistical mechanics. The assumptions of efficient markets and the random walk hypothesis are embedded in this formula. Future expectations are translated into expected futures, and the forces of time are tamed. Uncertainties have not simply disappeared, but

the dynamics of the model suggest that with the expansion of the derivatives market a risk-neutral world is created. Uncertainty can be eliminated if there are enough contingent claims or derivative instruments.

Second, the translation of economic data into integrated systems provides the representation of a world that knows neither jumps nor slumps. The advantage of mathematical formalism corresponds to the theoretical assumption that the system itself functions in a homogeneous, continuous and equalizing fashion. In this respect, the calculation developed by Merton, Black and Scholes is to be understood as a system allegory: the mere representation of a system solution through differential equations must, as the mathematician James Yorke noted, exclude any chaotic course. For this reason, one can see in the Black-Scholes formula a kind of “enacted theory.” It documents the performative quality of a calculus. Financial derivatives generate the condition of their possibility and appeal to a market in which their economic rationality can prove to be true. In talking about adapting economic reality to economic theory, one spoke of the emergence of a “Black-Scholes world” that did not yet exist in the seventies. As a theoretical product the formula provides a compelling argument for trading in financial derivatives: the prospect of a stabilizing the system and, along with it, the validation of its theoretical implications.

A last element must be added here - a necessary condition for the new system. This concerns the creation of technological infrastructures. The circular flow of prices and information made financial markets into the engine for the implementation of new information technologies, and the practices of the current financial economy have been defined by electronic and digital machines, by information processing and telecommunications. The first ideas about establishing electronic financial markets were formulated in the fifties; and after the introduction of electronic trading systems and online brokerage, in 1993 the World Wide Web was made available for stock exchanges and financial transactions. If the emergence of a financial machine can be recognized here in which human welfare is at stake, this machine would become critical for trading in financial derivatives. Calculations such as the Black-Scholes formula call upon its execution in information technology. And ever since the emergence of automated futures trading, an effective fusion has resulted between financial theory, mathematics, and information

technology. The new technologies must be considered as generators of new financial instruments; and apart from the fact that they delocalized the exchange business and provided an unlimited inclusion of players, two important consequences can be noted.

On the one hand, the interaction of the stated elements - option trading, financial mathematics and information technology - caused a historic transformation in which monetary standards of all kinds were replaced by a standard of information. The stabilization of financial economics and monetary systems is no longer guaranteed by a conversion into gold or commodity money, but by an exchange between money and information. Prices in financial markets deliver information on the future of prices, and for this reason information on money has become more important than money itself in business transactions. The market installed an automatism of information, and money is paid for with information. Efficient markets are markets that efficiently distribute information. The financial contest is a summons to informational competition.

On the other hand, this machine reveals an imitation of theory by economic reality. Robert Merton clearly argued: "As real-world intermediation and markets become increasingly more efficient, the continuous time model's predictions about actual financial prices, products and institutions will become increasingly more accurate. In short, reality will (...) imitate theory." Only under new technological conditions the institution of the market can be accomplished. Financial theory, formalization, and technology enter into a productive relationship, and the invention of new financial instruments and the introduction of new markets mutually reinforce their *raison d'être*. And that means: the synthesis of theory and technology promises that maximum liquidity, optimal pricing and efficient data transfer are realized in the stabilization of whole markets.

Let me now summarize and conclude. The end of the Bretton Woods Agreement created a situation in which floating currencies called for hedging against unstable exchange rates. Following the new liberalism, market risks can be insured with market risks. This means, first, that markets in general were assumed to tend toward equilibrium; the thesis of efficient markets was established as a basic premise. Second, derivatives and futures trading became the focus of the new financial system. Since the nineties at the latest, their volume has dominated the economic process. But above all they must be regarded as central to the logic of the financial economy - as the basis of a business routine

that involves a trade with time and risk. Third, this is the stage where financial mathematics became the *arcanum* of economic knowledge. With the example of the Black-Scholes formula, I wanted to show how the old ideas of equilibrium are realized by probabilistic models and taming time. Fourth, this mastery of time however can only be achieved through information technologies: older gold or money standards are substituted by the standard of information.

With these considerations, I would like to suggest that postmodern condition must be considered as an economic condition, one that reached a turning point in the year of 1973. I do not mean to describe this condition primarily as a self-referential play of signs that has broken free of anchor and lost its support by a transcendental signified. Nor do I believe it to be a deconstruction of grand narratives or the liberality of an **anything goes** mindset. The end of Bretton Woods was, rather, the starting point of a new liberalism, and the crisis of representation it provoked has led to a new and very strict order. Namely, the prospect of a risk-neutral world was born. As long as the new liberalism holds to the notion that all events and relationships in the human world can be assigned a market value – so the logic goes – then a molecular market with securities, options, and derivatives can hedge against all possible futures and once again guarantee an earthly Providence. This belief lends finance theory its visionary bent. In 2003 Robert Shiller was moved to write:

We need to democratize finance and bring the advantages enjoyed by the clients of Wall Street to the customers of Wal-Mart. We need to extend finance beyond our major financial capitals to the rest of the world. We need to extend the domain of finance beyond that of physical capital to human capital, and to cover the risks that really matter in our lives. Fortunately, the principles of financial management can now be expanded to include society as a whole. [...] Finance can thus be made to address a problem that has motivated utopian or socialist thinkers for centuries. Indeed, financial thinking has been more rigorous than most other traditions on how to reduce random income disparities. (SHILLER, 2003)¹

This new finance economy completes society's adaptation to a state of continuous risk. We see the reformation of older welfare states, which leads to competitive societies and cultures of risk. In this order, there are neither classes nor parties, but only a web of financial participation and economic partners. And herein lies a new social contract: unlike any other social innovation, the network of financial instruments is expected to provide for a

¹ Case, Karl E., and Robert J. Shiller. "Is There a Bubble in the Housing Market? An Analysis." (2003).

“distributive justice”², in all areas of life. What Theodicy once postulated, financial economy now promises: it promises no less than the creation of a harmonious world order and the establishment of an earthly Providence.

So it is little surprise that financial economic thinking leads to the temptation of thinking the end of history. Kevin Hassett e.g., an economist and economic advisor to presidential candidate John McCain, maintains that within the arena of the American financial market in the twentieth century, there were no world wars and no financial crises, no deportations and no mass murder, no Korean War, no Vietnam War – but rather only an unbroken sequence of increasing financial returns, with nothing but steadily increasing revenues to be expected in the future. In the golden years of the new financial economy, in the 1990s, the Clinton Administration determined that in light of flourishing financial markets, the drama of economic cycles would cease, and that the “End of Economic History” was at hand. With information technologies and stable business operations, the US, if not the rest of the world, entered a “beyond history” state of being. Speculation and hedging provided the financialization of a posthistorical epoch, one in which economic stabilizing led to the stabilizing of social, political, and cultural spheres. And these outlooks correspond with the kind of discourse – as in Francis Fukuyama – that invokes the advent of the posthistorical world and the “end of history”, revolving around the reconciliation of old nation states through a new political and economic liberalism. Here the “liberal revolution of economic thinking” comes together with the alliance of liberal democracy and the “free market”, all to be declared a new “gospel”.

Since the 1970s, the aspiration of financial economic theory has been to form a system that wrests stability away from the temporality of its dynamic processes. All futures already have an actual price. A liberal, capitalistic Oikodicy prevails. The year 1973 therefore marks the beginning of a final great Western narrative: economic theory has become the refuge of a philosophy of history that may still know molecular oscillation, but no longer recognizes the possibility of decisive historical change. Since 1973, a system has taken shape whose realization is legitimized by promising preestablished harmonies. It sees a special providence within the market; the economic **condition postmoderne** has thus assumed the character of a profane metaphysics. However, unlike theodicy, which went no further than

² Ibid.

panglossian thought-experiments, this new metaphysics has inspired an immense world-wide experiment, which, at least for now, keeps on going. And while the Lisbon Earthquake of 1755 shook the faith in theodicy and divine providence, it may well be that in the wake of the financial crisis of 2008, we have missed our chance to secularize the markets and call for a new economic Enlightenment.

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