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Issue Article

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THE DEVELOPMENT OF FINANCIAL MARKETS AND FINANCIAL THEORY

Abstract: *The second half of the 20th century, up until the start of the financial and economic crisis in 2007, was characterized by a very dynamic development in financial markets and banking. This dynamic development began in the early 1980s and continued until 2007. This paper studies the evolution of financial markets and theories related to it.*

Key words: *finance, financial markets, capital market, financial theory, securities, CAPM, EMT, adverse selection.*

Language: *English*

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Introduction

Because of its inherently "dangerous" nature, which has been acknowledged for a very long time, the banking industry has traditionally been subject to a higher level of regulation than many other sectors of the economy. On the other hand, this was not the case for many other aspects of the financial markets. In addition, following World War II, there was a widespread belief in the advantages of free markets, and there was a push toward privatization, liberalization, and globalization. This belief and this push meant that the regulation of banking and financial markets did not keep up with the rapid evolution of banks and financial markets. Having said that, regulation and taxation have also been a driving force behind the development of new products and vehicles, which seek to evade restrictions and "optimize" taxation in an international setting.

The idea that financial theory, the practice of banking and financial markets, and the regulation and supervision of financial markets all influence one another is the premise upon which this article is based. They did so both as a proactive step toward globally liberalized and ever more advanced banking and financial markets and as a reactive measure in response to the global financial crisis.

The past half-century has seen a tremendously fast-paced expansion of financial theory. The relationship between theory and practice has undergone some remarkable developments. The functioning of financial markets and the behaviors of investors have been better understood thanks to research conducted in academic institutions. Academic research has been a major driver of both the development of new financial instruments and markets as well as the stimulation of innovation in the financial sector. Portfolio theory, capital asset pricing theory, interest rate structure theory, capital structure theory, agency theory, efficient markets theory, and option pricing theory have been particularly important areas of research in finance over the past five decades. The number of books and articles based on research that have been published is very high. A small selection, which can be found below, has been made, and it includes several contributions from people who have won the Nobel Prize in Economics.

Portfolio Theory

In the ground-breaking article that Harry M. Markowitz wrote and published in 1952 (Markowitz, 1952), he argued that the traditional application of one-dimensional investment criteria such as the Net Present value (NPV) criterion should be replaced by

two dimensions: expected returns and risk defined as the standard deviation of the return distribution. This article was published by Markowitz in 1952. In the decades that followed, he developed his model further and incorporated it into a well-known book (Markowitz, 1991). In addition to this, he argued that investors should avoid considering securities in isolation. It is a fallacy to believe that investors or financial advisors can accurately forecast the return that will be generated by individual stocks in the future. However, it is possible to make portfolio decisions, based on empirical analysis of the co-variation of the returns of several different securities, in which the incomplete correlation between the securities can be exploited for the purpose of diversification. These portfolio decisions can be made. The impact that combining different securities should be front and center for investors' attention. When dealing with the real world, investors are forced to make a choice between the returns they anticipate and the amount of risk they are willing to take. An efficient frontier is a representation of the available investment universe. It has a slope and shape that reflect the interaction in the financial market of all investors who have varying degrees of aversion to risk. This interaction creates the shape and slope of the frontier. If a private investor wants a higher anticipated return, he must be willing to take on additional levels of risk. It is a well-known piece of advice that one should avoid putting all of one's eggs in a single basket. Markowitz was awarded the Nobel Prize in Economics in 1990 for developing a solid analytical basis for that sage recommendation, which can be followed by individuals, companies, mutual funds, and institutional investors. This recommendation is applicable to all of these types of investors.

1989 was the year that J.P. Morgan made the decision to develop a portfolio model that would be able to measure and explain the risks that the company faced on a daily basis. (J.P. Morgan/Reuters, 1996) states that J.P. Morgan made the RiskMetrics methodology available to the market at no cost in the year 1992. The staff at the company updated the internet with the most recent spot prices, volatility estimates, and correlation estimates on a daily basis. They explained that they did this because the company was interested in promoting greater transparency of market risks, they wanted to establish a benchmark for market risk measurement, and they wanted to use the RiskMetrics methodology to assist clients in better understanding the risk that is associated with their portfolios. J.P. Morgan revised their technical document and popularized the concept of value-at-risk (VaR) as a portfolio risk measure to be applied by financial institutions in the calculations of capital adequacy to be presented to financial regulators between the years 1993 and 1994. This was done by J.P. Morgan. The value at risk, also known as VaR, is a measure of potential negative outcomes that is calculated by compiling historical data on the correlations and volatility of a selection of financial assets and concentrating on the likelihood of incurring losses. The value of the value at risk (VaR) is defined as a threshold value for a particular portfolio, probability, and time horizon. This value can be used to instruct the manager of the portfolio to keep the probability of incurring losses below a particular level. Actually, VaR ended up becoming the standard for the measurement of portfolio risk after receiving official support in a proposal from the Basel Committee in 1993 and in the Capital Adequacy Directive (93/6/EEC) from the European Commission. Both of these documents were released in 1993. Philippe Jorion is largely responsible for the rise in popularity of VaR as a measure of portfolio risk (Jorion, 2006).

Capital Asset Pricing Theory

In 1964, William F. Sharpe wrote and published an article titled "Sharpe, 1964," which was based on the Markowitz Model but also included additional assumptions. The estimation of a variance-covariance matrix, which becomes very large if the number of available securities in the investor's investment universe is high, is one of the challenges associated with the Markowitz Model. This challenge is one of the reasons why the Markowitz Model is not widely used. By making the assumption that the returns of individual securities are only interrelated through their sensitivity to a common factor, typically the return of a broad market index, Sharpe was able to simplify the laborious estimation procedure. Sharpe assumed further that all investors have access to lending and borrowing at the risk-free interest rate, that they are in agreement on the shape of the efficient frontier, and that there are no transaction costs involved. All investors, taking into account these simplifying assumptions, will choose an investment strategy that includes both the market portfolio and the risk-free asset (or borrow at the risk-free interest). The "Capital Market Line" is where all portfolios will be found, and the slope of this line will indicate the price of risk as determined by the market at the time. The "Capital Asset Pricing" model (CAPM) that Sharpe developed became the foundation for many different studies that were conducted on the pricing of assets in financial markets. The "betas" of the model, which measure the sensitivity of the individual stock to movements in the return on the stock market as a whole, became widely used by financial analysts and stock brokers. These "betas" measure the sensitivity of the individual stock to movements in the return on the stock market as a whole. The so-called "Sharpe Ratio" is a metric that is utilized by investment advisors and mutual funds all over the world. This metric is defined as the historical return of a portfolio subtracted by the risk-free interest rate and then divided by the standard deviation of the

portfolio return. The Sharpe Ratio, along with other performance indicators, is utilized in the process of evaluating the effectiveness of mutual funds and other types of portfolio managers.

The CAPM has been put to the test in a number of empirical investigations over the course of its existence. (Roll, 1977) has expressed skepticism regarding the testability of the model using strong language. The results of the tests have been inconsistent, and this has led some authors to express skepticism regarding the usefulness of the model (Ross, 1978). Because the market participants in the model are assumed to only look one period ahead in time, this assumption represents a significant flaw in the model. It has also been criticized for using a single risk factor, as this is not sufficient for describing the cross-section of expected returns in the financial market. This criticism stems from the fact that it uses a single risk factor (Miller, 1999). Several authors have attempted to circumvent these shortcomings by including additional risk factors in addition to the market factor and by extending their analysis over more than one period (Cox et al., 1985 and Merton, 1973a). The CAPM, according to the viewpoints of some other authors, ought to be dismissed entirely. After the events of the recent financial crisis, the author of (Dempsey, 2013) makes the argument that the CAPM and the theory of efficient markets may need to be replaced with a paradigm of markets as being vulnerable to capricious behavior in order to adequately explain what happened.

Interest Rate Structure Theory

Bond portfolio owners are put in a precarious position because of the many risks they face. Relevant types of risk are interest rate risk, inflation risk, default or credit risk, currency risk and political risk. Bond issuers are also vulnerable to the majority of these dangers, but the direction of the potential impact of risk occurrences is typically in the opposite direction. The structure of interest rates at any given date is a reflection of the overall assessment of all of these risk factors made by the participants in the market at that time.

The pattern of interest rates on bonds with different maturities at a given time is what is meant to be referred to when using the term "structure of interest rates." For a considerable amount of time, eminent economists have been investigating the term structure of interest rates as a research topic. In the 1930s and 1940s, influential publications were contributed by John Maynard Keynes, John R. Hicks, Irwin Fisher, Frederick R. Macauley, and Friedrich A. Lutz. They desired an explanation not only for the structure of prices on fixed-income securities, but also for the links between monetary policy and real economic activity. Central banks have traditionally focused their operations primarily on the market for short-term instruments, whereas it is generally accepted that real economic activity is related to long-term interest rates because of the investment behavior of businesses. Because of this, it is essential – also from the point of view of monetary policy – to have a solid understanding of the factors that influence the relative yields on securities with different maturities. Excellent overviews of the evolution of interest rate structure theory were published by B.G. Malkiel and Angelo Melino in 1966 and 1988, respectively (Malkiel, 1966 and Melino, 1988). The "Expectations Hypothesis Theory" states that forward interest rates are determined by the expectations of market participants concerning the future development of short-term interest rates, in addition to an appropriate risk premium. This theory was developed in the 1960s. There is widespread disagreement regarding the best way to model expectations. The assumption of "Rational expectations" has been utilized by a number of the authors, but not all of them (Muth, 1961). The expectations hypothesis suggests that term premia are time invariant when rational expectations are not present because it states that term premia are implied to exist. When rational expectations are used, the implication is that term premia are growing more expensive as they get closer to maturity. (Meiselman, 1962) provided support for the expectations hypothesis in the year 1962. He argued that it was not possible to draw the conclusion that forward rates did not represent the market's expectations of future interest rates based on poor forecasts based on those rates. The majority of empirical studies, including an influential study by J.Y. Campbell and R. Shiller, show that the expected excess return on bonds with long maturity is higher when the interest curve is steeper. (Campbell and Shiller, 1991). [Citation needed] As a result, it is challenging to provide empirical support for the expectations hypothesis. Vasicek (1977) developed a single-factor model based on the idea that the term structure should be based on the absence of opportunities for arbitrage. According to this model, the short-term interest rate is assumed to follow a stochastic process. His model was subsequently modified to account for additional factors by (Dai and Singleton, 2000). In recent years, investment banks have begun using stochastic interest rate structure models for pricing not only bonds with varying maturities but also interest related derivatives such as bond options. These models are used for pricing bonds with different maturities as well as pricing bond options. The central tenet of arbitrage-free pricing is that any derivative can be replicated by a dynamic trading strategy in the underlying assets, and that the value of the replicated portfolio is equivalent to the value of the derivative itself.

Capital Structure Theory

In 1958, Franco Modigliani and Merton H. Miller wrote an article titled "The Irrelevance of a Firm's Capital Structure in an Abstract Economy

Without Transaction Costs and Taxation," which was published (Modigliani & Miller, 1958). If financial markets are functioning perfectly and at a state of equilibrium, the authors' point of view was that the value of a company, which was defined as the sum of the market values of its equity and its debt, is unaffected by the size and composition of the debt, even if the authors did not explicitly state this. When these conditions are met, the average cost of capital is not affected by the amount of leverage that the company operates under. This unexpected theorem can be understood by noting that, under the premise that certain assumptions are true, shareholders have the ability—at no additional cost—to compose their portfolios in such a way that allows them to realize the return/risk profile that is most favorable to them. When investors have the ability to do this on their own, there is no incentive for them to pay a higher price for shares in companies where the managers try to adjust the capital structure according to what they believe the shareholders want. The "Irrelevance Theorem" had a significant impact on later contributions to capital structure theory, which were made in the 1960s and 1970s. These later contributions centered on the significance of taxation, transaction costs, and the cost of default, as well as other aspects of the financial market that Modigliani and Miller had neglected to take into account in their original model.

Efficient Market Theory

According to the "Efficient Market Theory," or EMT, the prices of securities in financial markets reflect all of the information that is available to investors. This means that investors can make informed decisions. An article written by Sidney Alexander and published in a book on the unpredictable nature of stock prices was one of EMT's earliest contributions (Alexander, 1964). There are a few different ways that one can evaluate the effectiveness of a market. For the purpose of forecasting the future prices of the financial asset in question, a "weak-form efficiency" test makes use of only historical price information. A test for "semi-strong-form efficiency" involves expanding the information set so that it includes not only historical price data but also any and all information that is accessible to the public. Last but not least, a test for "strong-form efficiency" takes into account not only information that is accessible to the public but also information that is known only to a select few, such as the company's managers, employees, bankers, and auditors. A well-known review article on measures of the effectiveness of markets was written by Eugene F. Fama (Fama, 1970).

In the context of investment advice and portfolio management, EMT is an important factor to consider. Investors and financial advisors who do not have access to confidential information will be unable to locate untapped opportunities for profit in the securities trading market if EMT maintains its semi-strong form. Furthermore, according to EMT, making predictions about future stock prices using technical analysis is a complete waste of time. In the context of disclosure requirements for publicly traded companies and regulations governing insider trading, EMT is also an important consideration. The market participants need to be given press releases simultaneously that contain new information about the growth or profit expectations of companies in order to minimize the problems caused by asymmetric information.

The EMT operates under the presumption that investors are logical. This suggests that they are keeping up to date with the flow of information that is pertinent to the pricing of the securities that they hold at the present time. It also suggests that they are actively adjusting the composition of their portfolios whenever new information that is relevant to the market is made public. In the real world, however, determining what information is pertinent and what is not can be a difficult task. Investors and the financial advisors who work with them are faced with an overwhelming amount of fresh information on a daily basis. This information may or may not have an effect on the prices of the financial assets that investors already own or have the opportunity to buy. Although investors may have hypotheses regarding the impact of recent events or political decisions on their holdings, it is impossible for them to know for certain, and mistakes are unavoidable in the process. "Noise traders" are investors who react to random and unpredictable shocks and try to profit from them, according to Fischer Black's description of this type of investor (Black, 1986). It is probably realistic to interpret the actual stock price development and volatility as the combined result of the behavior of rational investors, who follow the "fundamentals," which are profit announcements, dividend announcements, and other disclosures from listed companies, and noise traders, who try to profit from any kind of new information that they believe to be relevant. It is possible to interpret the actual stock price development and volatility as the combined result of these two types of behavior. When considering the implications of transaction costs, it is essential to conduct a realistic assessment of the EMT. When rational investors decide to modify their investment portfolios as a result of new information that has an impact on their expectations, they are required to pay fees to their bank or stock broker, as well as bid-ask spreads and other transaction costs. Because these costs exist, there is a possibility that they will cause some inertia in the composition of the portfolio and delay market reactions to new information.

Conclusion

Our financial system's performance has been shown to be unsatisfactory, as evidenced by the recent crisis that occurred. Unemployment affects millions of people across Europe, particularly young people. There are a number of factors at play, one of which is the existence of flaws in the monetary system. Who is accountable for that particular matter? The participants in financial markets as well as the researchers who have made significant contributions to the expansion of financial theory over the course of the past half-century are the focus of this chapter. In addition to this, it discusses the legal framework governing financial markets as well as the incentives offered to market participants by this framework. Arbitrage incentives are frequently the driving force behind substitution between markets. Therefore, people who work in the financial sector, politicians, those who regulate the sector, and academics are all potential candidates when looking for those responsible. The majority of the criticism has been leveled at the managers of the banks. This is justified in a lot of different scenarios. There have been several instances in which the compensation and other incentive structures utilized within financial institutions have encouraged excessive risk-taking behavior on the part of bank employees. However, this is not the only possible explanation for what happened. It is also important that they did not have a sufficient understanding of the risks that they accepted on behalf of their bank. In large organizations, the responsible board members have typically been provided with the output of complex financial models designed to capture the bank's risk-profile by their staff of analysts. These models were developed with the intention of capturing the bank's risk-profile. They have accepted the advice that is based on model calculations as relevant decision support without asking for or understanding the assumptions that were founded on the calculations. The advice was accepted because it was based on models. It would appear that the same considerations should be applied when thinking about regulators. Research departments of large private financial institutions and academic institutions are both common locations for the development of innovative financial products and services. Even though they put a lot of effort into staying current, those in charge of financial regulation are always behind the curve when it comes to their knowledge of the risk characteristics of new financial instruments.

References:

1. Markowitz, H.M. (1952). “Portfolio Selection”, *Journal of Finance*, 7, 77-91.
2. Markowitz, H.M. (1991). *Portfolio Selection: Efficient Diversification of Invest-ments*, 2nd Ed., Basil Blackwell, Cambridge MA & Oxford, UK.
3. Morgan-Reuters, J.P. (1996). *RiskMetrics – Technical Document*, 4.Ed, New York and London.
4. Jorion, P. (2006). *Value at Risk: The New Benchmark for Managing Financial Risk*, 3.Ed., McGraw-Hill, New York.
5. Roll, R. (1977). “A critique of the asset pricing theory’s tests: On past and poten-tial testability of the theory”, *Journal of Financial Economics*, 4, 129-76.
6. Ross, S.A. (1978). “The current status of the capital asset pricing model (CAPM)”. *Journal of Finance*, 33, 885-901.
7. Cox, J., Ingersoll, J., & Ross, S. (1985). “An Inter-temporal General Equilib-rium Model of Asset Prices”, *Econometrica*, 53, 363-84
8. Dempsey, M. (2013). “The Capital Asset Pricing Model (CAPM): The History of a Failed Revolutionary Idea in Finance?” *Abacus*, 49, Special supplement issue (S1).
9. Malkiel, B.G. (1966). *The Term Structure of Interest Rates: Expectations and Behaviour*, Princeton University Press, Princeton, NJ.
10. Melino, A. (1988). “The Term Structure of Interest Rates: Evidence and Theory”. *Journal of Economic Surveys*, 2, No.4, 335 ff.
11. Muth, J.F. (1961). “Rational expectations and the theory of price movements”. *Econometrica*, 29, 315-35.
12. Meiselman, D. (1962). *The Term Structure of Interest Rates*, Prentice-Hall, Eng-lewood Cliffs NJ.
13. Modigliani, F., & Miller, M.H. (1958). “The Cost of Capital, Corporation Finance, and the Theory of Investment”, *American Economic Review*, 48, No.3, 261-97.
14. Alexander, S. (1964). *Price Movements in Speculative Markets: Trends or ran-dom Walks?* In COOTNER, P. (Ed.), The Random Character of Stock Prices, MIT Press, Cambridge, Mass.
15. Fama, E.F. (1970). “Efficient Capital Markets: A Review of Theory and Empirical Work”. *Journal of Finance*, 25, 383-416.
16. Black, F. (1986). “Noise”. *Journal of Finance*, 41, 529-43.