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Portfolio Theory, Capital Markets, and the Marginal Effect of Federal Margin Regulations

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The margin prohibitions of the Securities Exchange Act of 1934¹ severely restrict the availability of credit for the purchase of securities. Pursuant to section 7 of the Act,² the Board of Governors of the

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1. 15 U.S.C. §§ 78a-77kk (1970).

2. 15 U.S.C. § 78(g) (1970) provides in pertinent part:

Margin Requirements.

(a) For the purpose of preventing the excessive use of credit for the purchase or carrying of securities, the Federal Reserve Board [Board of Governors of the Federal Reserve System] shall, . . . from time to time thereafter, prescribe rules and regulations with respect to the amount of credit that may be initially extended and subsequently maintained on any security (other than an exempted security). For the initial extension of credit, such rules and regulations shall be based upon the following standard: An amount not greater than whichever is the higher of—

(1) 55 per centum of the current market price of the security, or

(2) 100 per centum of the lowest market price of the security during the preceding thirty-six calendar months, but not more than 75 per centum of the current market price.

Such rules and regulations may make appropriate provision with respect to the carrying of undermargined accounts for limited periods and under specified conditions; the withdrawal of funds or securities; the substitution or additional purchases of securities; the transfer of accounts from one lender to another; special or different margin requirements for delayed deliveries, short sales, arbitrage transactions, and securities to which paragraph (2) of this subsection does not apply; the bases and the methods to be used in calculating loans, and margins and market prices; and similar administrative adjustments and details. . . .

(b) Notwithstanding the provisions of subsection (a) of this section, the Federal Reserve Board [Board of Governors of the Federal Reserve System], may, from time to time with respect to all or specified securities or transactions, or classes of securities, or classes of transactions, by such rules and regulations (1) prescribe such lower margin requirements for the initial extension or maintenance of credit as it deems necessary or appropriate for the accommodation of commerce and industry, having due regard to the general credit situation of the country, and (2) prescribe such higher margin requirements for the initial extension or maintenance of credit as it may deem necessary or appropriate to prevent the excessive use of credit to finance transactions in securities.

(c) It shall be unlawful for any member of a national securities exchange or any broker or dealer, directly or indirectly, to extend or maintain credit or arrange for the extension or maintenance of credit to or for any customer—

(1) on any security (other than an exempted security), in contravention of the rules and regulations which the Board of Governors of the Federal Reserve System shall prescribe under subsections (a) and (b) of this section;

(2) without collateral or on any collateral other than securities, except in accordance with such rules and regulations as the Board of Governors of the

Federal Reserve System can limit the credit extended on security purchases by broker dealers,³ banks,⁴ and other persons.⁵ Also, borrowers⁶ are subject to margin restrictions. The desirability of these complex restrictions placed on margin trading is, however, questionable.

This article analyzes the desirability of margin prohibitions in light of modern capital market theory. First, the reasoning behind margin provisions generally, and the transactions subject to regulation will be analyzed. Second, utilizing modern capital market theory, it will be shown that the margin limitations are worse than ineffectual. Presently, margin restrictions actually contribute to stock market instability. Finally, an approach will be proposed to remedy the gap between the present scope of margin prohibitions and investor requirements under existing economic conditions.

Federal Reserve System may prescribe (A) to permit under specified conditions and for a limited period any such member, broker, or dealer to maintain a credit initially extended in conformity with the rules and regulations of the Board of Governors of the Federal Reserve System, and (B) to permit the extension or maintenance of credit in cases where the extension or maintenance of credit is not for the purpose of purchasing or carrying securities or of evading or circumventing the provisions of paragraph (1) of this subsection.

(d) It shall be unlawful for any person not subject to subsection (C) to extend or maintain credit or to arrange for the extension or maintenance of credit for the purpose of purchasing or carrying any security, in contravention of such rules and regulations as the Federal Reserve Board [Board of Governors of the Federal Reserve System] shall prescribe to prevent the excessive use of credit for the purchasing or carrying of or trading in securities in circumvention of the other provisions of this section. Such rules and regulations may impose upon all loans made for the purpose of purchasing or carrying securities limitations similar to those imposed upon members, brokers, or dealers by subsection (c) of this section and the rules and regulations thereunder. This subsection and the rules and regulations thereunder shall not apply (A) to a loan made by a person not in the ordinary course of his business, (B) to a loan on an exempted security, (C) to a loan to a dealer to aid in the financing of the distribution of securities to customers not through the medium of a national securities exchange, (D) to a loan by a bank on a security other than an equity security, or (E) to such other loans as the Federal Reserve Board [Board of Governors of the Federal Reserve System] shall, by such rules and regulations as it may deem necessary or appropriate in the public interest or for the protection of investors, exempt, either unconditionally or upon specified terms and conditions or for stated periods, from the operation of this subsection and the rules and regulations thereunder.

3. Regulation T, 12 C.F.R. § 220 (1976).

4. Regulation U, 12 C.F.R. § 221 (1976). See also Note, *Federal Margin Regulations as a Basis For Civil Liability*, 66 COLUM. L. REV. 1462 (1966).

5. Regulation G, 12 C.F.R. § 207 (1976).

6. Regulation X, 12 C.F.R. § 224 (1976); see Note, *Civil Liability for Margin Violations—The Effect of § 7(f) and Regulation X*, 43 FORDHAM L. REV. 93 (1974).

MARGIN CONTROLS: LEGAL PARAMETERS

The Objectives of Margin Regulation

Section 7(a) of the Securities Exchange Act of 1934 empowers the Board of Governors of the Federal Reserve System to "prescribe rules and regulations with respect to the amount of credit that may be initially extended and subsequently maintained on any security. . . ." Pursuant to this authority, the Federal Reserve Board has promulgated several rules regulating the use of credit in securities transactions by establishing the maximum loan value for a securities purchase.⁸ Regulation T⁹ determines the initial margin requirements that broker-dealers¹⁰ may extend to their customers. In substance, Regulation T requires a broker-dealer to obtain the required margin from a customer in general account transactions¹¹ as promptly as possible, but in no event later than five business days after the date of the transaction.¹² If the creditor fails to receive deposits sufficient to satisfy this requirement within the specified maximum period, he must "promptly cancel or otherwise liquidate the transaction or the unsettled portion thereof."¹³

Regulation U¹⁴ applies to all banks. It provides: "No bank shall make any loan secured directly or indirectly by any stock for the purpose of purchasing or carrying any margin stock in an amount exceeding the maximum loan value of the collateral."¹⁵ Thus, banks are subject to regulations similar to those of broker-dealers under Regulation T.

7. 15 U.S.C. § 78g(a) (1970); see note 2 *supra*.

8. The margin represents the capital which must be furnished by the investor in a purchase or short sale. The margin currently required is 50%. 12 C.F.R. § 207.5(a) (1976).

9. *Id.* § 220.

10. Regulation T applies to all brokers and dealers as defined in sections 3(a)(4) and 3(a)(5) of the 1934 Act. 15 U.S.C. § 78c(a)(4), (5) (1970).

11. Credit purchases are made on general or margin accounts. The customer pays only a portion of the purchase price in cash and receives credit for an indefinite period from the broker-dealer for the balance. The regulation also provides for a number of special accounts, the most significant of which is the special cash account. The special cash account is essentially a delayed payment account whereby the broker-dealer extends credit upon the reliance that the customer will make full cash payment for securities within a short time. See 2 L. LOSS, *SECURITIES REGULATION* 1248-53 (2d ed. 1961) [hereinafter cited as Loss]. See also Judson & Emerson, *The Effect on Regulation T on Cash Transactions in Securities*, 44 MICH. L. REV. 997 (1946); Loss & Vernon, *When-Issued Securities Trading in Law and Practice*, 54 YALE L.J. 741, 758-60 (1945).

12. 12 C.F.R. § 220.3(b) (1976).

13. *Id.* § 220.4(c)(2). Moreover, pursuant to the preservation of the right of any exchange to establish margin requirements, the New York Stock Exchange has promulgated its own initial extension of maintenance margin requirements. New York Stock Exchange Rule 431, CONSTITUTION AND RULES ¶ 2431 (1975).

14. 12 C.F.R. § 221 (1976).

15. *Id.* § 221.1(a).

Regulation G¹⁶ was promulgated in 1969 to cover all other domestic lenders previously unregulated by Regulations T and U. Regulation G requires registration of every person who in the ordinary course of business during any calendar quarter extends or arranges for the extension of a total of \$50,000 or more in credit, or has outstanding at any time during the calendar quarter \$100,000 or more, secured directly or indirectly, in whole or in part, by collateral that includes margin securities.¹⁷ These registrants then become subject to general requirements similar to those provided by Regulation U.

To prevent the frustration of margin regulations by foreign land immune to domestic margin controls, Regulation X¹⁸ was enacted. Basically, it provides that the borrower is prohibited from borrowing if the lender is prohibited from lending by Regulations T, U, or G, or in the case of a foreign lender, if he would have been prohibited from lending by Regulation G if he had been subject to it.¹⁹

The above margin restrictions have three separate objectives.²⁰ First, on a macroeconomic level, they seek to limit the amount of credit directed by speculation into the stock market and out of more desirable uses of commerce and industry.²¹ Second, the regulations attempt to protect the borrower by restricting his possible leverage, thereby making it impossible for him to buy securities on too thin a margin.²³ Finally, the margin controls seek to stabilize stock market fluctuations by regulating the supply of investment capital.²³

Although seemingly dissimilar, the above stated goals share a common desire to reduce risk and speculation through limits on the use of leverage. Due to the incomplete nature of the controls, however, margin regulations are poorly related to the achievement of satisfactory risk reduction.²⁴ This has led directly to the current dissatisfaction with the controls.

16. *Id.* § 207.

17. *Id.* § 207.1(a).

18. *Id.* § 224.

19. *Id.* § 224.2

20. See 2 LOSS, *supra* note 11, at 1242-43.

21. H.R. REP. NO. 1383, 73d Cong., 2d Sess. 8 (1934). The statute itself speaks in terms of "preventing the excessive use of credit for the purchase or carrying of securities." 15 U.S.C. § 78o(a) (1970).

22. S. REP. NO. 1445, 73d Cong., 2d Sess. 11 (1934). See, e.g., *Landry v. Hemphill, Noyes & Co.*, 473 F.2d 365 (1st Cir. 1973), *cert. denied*, 414 U.S. 1002, *rehearing denied*, 415 U.S. 960 (1975).

23. For the view of the Federal Reserve Board, see 1 JOINT COMM. ON THE ECONOMIC REPORT, MONETARY POLICY AND THE MANAGEMENT OF THE PUBLIC DEBT, S. DOC. NO. 123, 82d Cong., 2d Sess. 409-10 (1952). It appears in recent years, at least, that the chief emphasis is on the stabilization of stock market fluctuations. See 2 LOSS, *supra* note 11, at 1243.

24. See Moore, *Stock Market Margin Requirements*, 74 J. POL. ECON. 158 (1966). Moore's

Dissatisfaction with the Margin Regulations

There is serious question whether margin controls are effective in achieving their formal objectives. Conclusive evidence that margin restrictions have contributed to sounder capital markets is lacking. On the other hand, preliminary evidence suggests that margin controls have little or no effect on risky or speculative behavior.²⁵ This is predictable in light of the incomplete nature of the margin controls. Margin restrictions seek to limit speculative fever by restricting the amount of leverage that may be used to purchase stocks. Leverage, however, is but one way of increasing the risk of a purchase. An alternative that margin controls fail to reach is to hold an unleveraged portfolio of high-risk securities.

Like many partial controls, margin controls may be worse than ineffectual. The margin controls may prohibit an investor from holding a strongly leveraged portfolio of relatively safe securities, although his investment may be less risky than an unleveraged portfolio of risky securities.²⁶ Furthermore, these controls may contribute to instability by creating an artificial demand for the more volatile stocks listed on stock exchanges, resulting in the bidding up of the prices of those stocks to the point where their expected return is below that of less volatile, less risky, stocks,²⁷ thereby distorting the supply schedules of equity funds and interfering with the efficient allocation of capital. To evaluate better the effects of margin restriction on investors and securities markets, it is necessary to discuss modern capital theory.

ECONOMIC APPROACH TO INVESTMENT CHOICE: THEORY AND APPLICATION

Modern capital market theory seeks to determine the prices of securities under conditions of uncertainty in a market which is in equilibrium.²⁸ It is in reality a combination of separate theories

preliminary statistical study concludes that "not one of the arms of the legislation establishing margin requirements has been established." *Id.*

25. *Id.* Even if effective, at what cost? See text accompanying notes 51-60 *infra*.

26. Note, *The Regulation of Risky Investments*, 83 HARV. L. REV. 603, 608 (1970); see note 27 *infra*.

27. See R. POSNER, *ECONOMIC ANALYSIS OF LAW* 200 (1973) [hereinafter cited as POSNER]; Black, Jensen & Scholes, *The Capital Assets Pricing Model: Some Empirical Tests*, in *STUDIES IN THE THEORY OF CAPITAL MARKETS* 79 (M. Jensen ed. 1972) [hereinafter cited as Black, Jensen & Scholes]. See generally Bines, *Modern Portfolio Theory and Investment Management Law: Refinement of Legal Doctrine*, 76 COLUM. L. REV. 721 (1976); Clark, *The Soundness of Financial Intermediaries*, 86 YALE L.J. 1 (1976).

28. Equilibrium is a state of rest, *i.e.*, the attainment of a position from which there is neither incentive nor opportunity to move. The equilibrium price is one from which there is no tendency to move, so long as the underlying supply and demand conditions do not alter.

concerning risk, investor reaction to risk, and the efficiency of securities markets. The following discussion will establish the analytical underpinnings of modern capital market theory, derive implications as to investor behavior, and evaluate its application to the margin regulations.

Modern Capital Market Theory

Inherent in the concept of investor behavior is the element of risk. Margin regulations are essentially legal standards regulating the maximum level of acceptable risk appropriate for a given investment; however, the regulations are based upon an incomplete concept of risk, the risk of capital loss. This concept of risk assumes that investors are concerned exclusively with capital losses, rather than with all possible future values of their investments. Consequently, this approach ignores the probabilities associated with these other possible values. Economic risk is concerned not only with the risk of capital loss, but also with all possible future deviations from that which was expected. This uncertainty measure of risk²⁹ is in marked contrast to the legal approach which concentrates exclusively on capital loss. The narrow legal concept of risk is but a subcategory of the more general concept of uncertainty risk. Exclusive concentration on capital loss can lead to imprudent investment decisions since it is possible that one portfolio may exhibit greater economic risk than another, even though that portfolio has a lower probability of capital loss.³⁰ By not limiting its inquiry to capital loss, the economic concept of risk incorporates more available investment information and, therefore, provides a more complete measure of risk. The economic concept of risk is thus a more appropriate index of risk because it considers every possible future deviation.³¹

See R. LEFTWICH, *THE PRICE SYSTEM AND RESOURCE ALLOCATION* 358 (1970); G. STIGLER, *THE THEORY OF PRICE* 93 (3d ed. 1972); Cohen, *The Suitability rule and Economic Theory*, 80 *YALE L.J.* 1604 (1971); Kassouf, *Towards a Legal Framework for Efficiency and Equity in the Securities Markets*, 25 *HASTINGS L.J.* (1974); Mundheim, *Responsibilities of Broker-Dealers: The Suitability Doctrine*, 1965 *DUKE L.J.* 445.

29. The statistical measure of uncertainty risk, standard deviation, measures the width of the random variables' probability distribution. For the purpose of simplicity this article will assume a normal distribution. This assumption does not detract from the analysis which can be generalized to non-normal symmetric stable distributions. See Fama, *Portfolio Analysis in a Stable Paretian Market*, 11 *MANAGEMENT SCI.* 404-19 (1965).

The use of the term risk for the remainder of this article will be restricted to its economic connotation, unless otherwise specified.

30. Note, *The Regulation of Risky Investments*, *supra* note 26, at 619; see Note, *Economic Analysis and the Prudent Man Rule Under ERISA: Efficiency versus the Public Interest*, 7 *LOY. CHI. L.J.* 683, 705-13 (1976).

31. *Id.*

In addition to being a more appropriate index of risk, the economic concept of risk emphasizes the relationship between the risk of an individual security and the risk of a portfolio.³² This is a significant contribution since the risk of a portfolio is not the simple arithmetic mean of the average risk of the individual securities but rather the covariance³³ among the individual securities within the portfolio. In fact, with a large, well-diversified portfolio, the effect of the independent risk of a security upon the portfolio is likely to be quite small, almost trivial, relative to the effect of the security's covariance with the portfolio.³⁴ Therefore, it is possible to reduce the risk of the portfolio as a whole by the addition of a speculative security.³⁵

Thus, the owner of a diversified portfolio is shielded against factors operating to depress the securities of a particular firm or market because such factors usually tend to improve the earnings of some other firm or market.³⁶ An index of risk which measures a security's risk without consideration of the effect of that security upon a portfolio is incomplete and meaningless³⁷ because the effect of a single security's independent risk upon a portfolio is *de minimis*. Therefore, the true economic measure of a security's risk is its contribution to portfolio risk.

Modern capital market theory also recognizes that investment decision-making under uncertainty is two-dimensional. The two relevant dimensions are the expected return and the degree of risk.³⁸ Every investor faces a trade-off: he will incur greater amounts of risk only if compensated by increased returns. The investor does not choose between risk minimization and return maximization, but

32. *Id.* See Note, *Fiduciary Standards and the Prudent Man Rule Under the Employment Retirement Income Security Act of 1974*, 88 HARV. L. REV. 960 (1975); Note, *Prudence in Trust Investment*, 3 U. MICH. J.L. REF. 491 (1975); Note, *Trustee Investment Powers: Imprudent Application of the Prudent Man Rule*, 50 NOTRE DAME LAW. 519 (1975).

33. Covariance is the degree to which two variables move together. For a more complete discussion of covariance analysis in portfolio theory and investment management see Bines, *supra* note 27, at 741-50.

34. For a demonstration of this fact, see E. FAMA & M. MILLER, *THE THEORY OF FINANCE* 253-55 (1972) [hereinafter cited as FAMA & MILLER].

35. H. MARKOWITZ, *PORTFOLIO SELECTION: EFFICIENT DIVERSIFICATION OF INVESTMENT* 112-15 (1959).

36. POSNER, *supra* note 27, at 192. Approximately 90% of the independent risk in a portfolio can be eliminated through diversification by the inclusion of only 10 randomly selected stocks. Therefore, investors can easily obtain a combination of assets that will approximate the market. See Evans & Archer, *Diversification and the Reduction of Dispersion: An Empirical Analysis*, 23 J. FIN. 761 (1968).

37. See FAMA & MILLER, *supra* note 34, at 291. See also Peltzman, *Capital Investment in Commercial Banking and Its Relationship to Portfolio Regulation*, 78 J. POL. ECON. 1 (1970).

38. See J. LORIE & M. HAMILTON, *STOCK MARKET: THEORY AND EVIDENCE* (1973) [hereinafter cited as LORIE & HAMILTON].

rather seeks the maximization of return for a given degree of risk.³⁹

In equilibrium, the price of any security will be a function of two components.⁴⁰ The first is a risk-free rate of return.⁴¹ The second is a risk premium which compensates the investor for incurring the risk associated with the return. Investors, of course, are compensated only for a particular kind of risk—market risk.⁴² Independent risk⁴³ can be eliminated through diversification.⁴⁴ Since investors do not have to bear independent risk, they are not compensated for it. Thus, an investor who wishes to increase his expected return must do so by increasing his exposure to market risk and not to independent risk.⁴⁵

Then, too, capital assets are priced in an efficient market.⁴⁶ The prices of securities in an efficient market fully reflect available information and adjust quickly and in an unbiased manner to new information.⁴⁷ The implication, here, is not that "every stock is correctly valued at every moment in time but that the cost of finding out whether or not it is correctly valued will usually exceed the

39. *Id.* See Friedman & Savage, *The Utility Analysis of Choices Involving Risks*, 56 J. POL. ECON. 279 (1948).

40. See Linter, *The Valuation of Risk Assets and the Selection of Risky Investments in Stock Portfolios and Capital Budgets*, 47 REV. ECON. & STAT. 13 (1965); Linter, *Security Prices, Risk, and Maximal Gains from Diversification*, 20 J. FIN. 587 (1965); Sharpe, *Capital Asset Prices: A Theory of Market Equilibrium Under Conditions of Risk*, 19 J. FIN. 425 (1964). For a clarification of the Sharpe-Linter models see Fama, *Risk, Return and Equilibrium: Some Clarifying Comments*, 23 J. FIN. 29 (1968).

41. The return on short-term federal government securities is a good example of a security with a risk from rate of return.

42. Market risk is that portion of a security's risk which is related to the risk of all other securities in the capital market. See F. Black, *Capital Market Theory: An Introduction* 4 (Feb. 1972) (University of Chicago Graduate School of Business, Wkg. Paper Serv. No. 24B) [hereinafter cited as Black].

43. Independent risk is the risk that a security will decline in price independently of whether the market as a whole is rising or falling. See *id.*; Modigliani & Poque, *An Introduction to Risk & Return, Part I*, 30 FIN. ANAL. J. 68, 69-72 (Mar.-Apr. 1974).

44. See LORIE & HAMILTON, *supra* note 38, at 204; W. SHARPE, *PORTFOLIO THEORY AND CAPITAL MARKETS* 77-103 (1970); FAMA & MILLER, *supra* note 35, at 253-55.

45. This is accomplished through leverage and the use of debt, and not by concentration in riskier securities. See G. BIGGER, *RISK-ADJUSTED PORTFOLIO PERFORMANCE: ITS INVESTMENT IMPLICATIONS* 32 (1971); Lorie, *Diversification: Old and New*, J. PORTFOLIO MANGMT. 25, 27-28 (1975).

46. The term commonly used to describe this situation is that security prices follow a random walk, *i.e.*, the successive price changes are statistically independent. For the evidence on this fact, see Fama, *The Behavior of Stock Prices*, 38 J. BUS. 34 (1965); Granger & Morgenstern, *Spectral Analysis of New York Stock Market Prices*, 16 KYKLOS 1-27 (1963); Fama, *Efficient Capital Markets: A Review of Theory and Empirical Work*, 35 J. FIN. 383 (1970).

47. The implication is not that every stock is correctly valued at every moment in time, but that the cost of finding out whether or not it is correctly valued and the costs of effectuating the transition will usually exceed the profits to be made from knowing its true value. See Fama, *supra* note 46.

profits to be made from knowing its true value."⁴⁸ The analysis of past price changes and public information provides no help in achieving increased returns in an efficient market. Investors can increase their expected return only through risk manipulation and not by attempting to presage general market movements.⁴⁹

The concepts of modern capital market theory, uncertainty as a measure of risk, risk-return relations, and the efficiency of capital markets will now be used to derive a modern standard of investor behavior.⁵⁰

Investor Behavior Under Modern Capital Market Theory

In an efficient market, the expected return on a portfolio will depend more on the amount of risk incurred than on any secret knowledge or the special abilities of the portfolio manager.⁵¹ Therefore, in an efficient market an investor should follow a passive portfolio strategy.⁵² The specific requirements of such a strategy are high diversification, low turnover, risk control, minimization of management fees, and minimization of taxes.

High diversification is a practical necessity since investors are not compensated for bearing independent risk and the only manner in which independent risk can be eliminated is through diversification. In an efficient market, attempts to anticipate market movements will be counter-productive since they will generate needless brokerage expenses and management fees as well as an unstable risk level. Thus, a passive portfolio strategy will generally eschew such actions. Finally, the investor with a passive portfolio strategy must also consider whether any gains or losses should be realized for tax purposes and whether any realized gain can receive capital treatment.⁵³

48. POSNER, *supra* note 27, at 193. See also Blume & Friend, *A New Look at the Capital Asset Pricing Model*, 28 J. FIN. 19 (1973).

49. Costs of search and underdiversification entailed by attempts to "beat" the market will generally exceed the returns of such activity. See Black, *Implications of the Random Walk Hypothesis for Portfolio Analysis*, 26 FIN. ANAL. J. 1 (Mar.-Apr. 1970).

50. Recent empirical tests of the simple capital asset pricing model have generally supported its validity. Bines, *supra* note 27, at 751-58. Nevertheless, the model has been found to be somewhat inaccurate. To remedy this problem a more sophisticated two-factor model has been developed which was found to describe accurately the generation of security returns. See Black, Jensen, & Scholes, *supra* note 27, at 79. See generally Bines, *supra* note 27, at 734-50.

51. See R. BREALEY, *SECURITY PRICES IN A COMPETITIVE MARKET* 211 (1971). See also Ambachtsher, *Portfolio Theory and the Security Analyst*, 28 FIN. ANAL. J. 53 (Nov.-Dec. 1972).

52. A passive portfolio strategy implies that an investor should follow a buy-and-hold strategy, keeping turnover low, and not act on information on specific stocks. This is in contrast to an active portfolio strategy in which the investor concentrates his holdings in stocks he believes will perform well, and exchanges one stock for another whenever he gets new information. See Black, *supra* note 42, at 3.

53. See LORIE & HAMILTON, *supra* note 38, at 258. A logical consequence is the necessity

In an efficient market, an investor can increase his expected return only by increasing his risk exposure.⁵⁴ This can be accomplished in either of two ways. First, the investor could increase the amount of risk incurred by concentrating on stocks of above average risk. Since investors are compensated only for market risk and not for independent risk,⁵⁵ this strategy would be imprudent. Such a strategy would produce an underdiversified portfolio⁵⁶ resulting in the exposure to uncompensated independent risk. The second method is to hold a well diversified portfolio and then to use leverage to increase the amount of risk. This method results only in the increase of compensation market risk and avoids incurring uncompensated independent risk. Additionally, the interest on the funds borrowed to obtain leverage can be offset against the portfolio's investment income to reduce the taxes the shareholder pays on his investment return. Thus, based upon financial and tax considerations, leverage is the preferred method of increasing the amount of risk incurred to obtain higher expected returns.⁵⁷

Modern capital market theory gives content to the legal parameters constraining investor behavior. Emphasis upon uncertainty as a measure of risk, risk-return relationships, and the efficiency of capital markets focuses attention on both the purpose and the reasoning behind every investment decision. This permits the law to be more precise⁵⁸ in determining whether the purpose motivating an investment is acceptable and provides a standard against which the effectiveness of margin restrictions can be measured.

for utilizing tax loss sales. *Compare* Markowitz, *Portfolio Selection*, 7 J. FIN. 77 (Mar. 1952).

54. See text accompanying notes 40-45 *supra*.

55. See text accompanying notes 28-50 *supra*.

56. An efficient portfolio is one that is fully diversified. A portfolio is fully diversified when it is perfectly correlated with a general market index. See LORIE & HAMILTON, *supra* note 38, at 71-87. For example, if the Dow Jones Industrial Index increases by 10%, a fully diversified portfolio would increase by 10%. To obtain a fully diversified portfolio one must approximate the market, *i.e.*, hold broad range of securities in proportion to their relative value in the market. Consequently, an investor who concentrates on high risk securities fails to approximate the market, and by definition holds an inefficient underdiversified portfolio. See LORIE & HAMILTON, *supra* note 38, at 270.

57. See Modigliani & Pogue, *An Introduction to Risk and Return, Part II*, 30 FIN. ANAL. J. 69, 82-85 (May-June 1974).

58. The mathematical specifications are the correlation and the beta coefficients. The prescription of a beta, measure of market sensitivity, would control the relative risks of the portfolio and serves as a measure of the trustees' effectiveness to control risk. The prescription of a correlation coefficient, the degree to which two variables move together, measures the diversification of the portfolio relative to a comprehensive market index. See LORIE & HAMILTON, *supra* note 38, at 265, 267, 269.

Modern Capital Market Theory and the Margin Regulations

The current law of margin controls is incomplete and unsuited to investor needs. The regulations ignore the relationship between risk and return when evaluating whether an investment is speculative. Moreover, despite the margin requirements, an investor can still position his portfolio at a high risk level by purchasing risky securities with little or no credit, instead of less risky securities with leverage. Similarly, the regulations may prohibit an investor from holding a strongly levered diversified portfolio, although his investment may be less risky than an unlevered portfolio of risky securities.

The erroneous legal approach to risk and the failure of the law to respond to recent investment developments has resulted in the misapplication of the margin regulations. The worst effect of this approach is the narrow legislative concern with particular extension of credit rather than with portfolio risk. This narrow focus fosters two undesirable consequences.

First, the margin restrictions foster costly underdiversification. An investor precluded from his desired degree of leverage⁵⁹ will concentrate on stocks of above average risk to achieve higher expected returns. This produces underdiversification, which actually contributes to increased investor risk, and forces the investor to incur large amounts of uncompensated independent risk.

Second, and perhaps most serious, the margin restrictions contribute to stock market instability. The margin restrictions have created an artificial demand for the more volatile stocks listed on the exchanges, resulting in the bidding up of the prices of those stocks to the point where the expected return is below that of less volatile stocks after correction for the difference in volatility,⁶⁰ thereby distorting the relative value of different risk classes of stock. Furthermore, the underdiversification fostered by the restrictions exposes risk preferring investors to unnecessary independent risk. Consequently, their portfolios will be less stable than a well diversified leveraged portfolio. This, in turn, contributes to the overall instability of the market.

Thus, margin regulations are worse than ineffectual. They actually contribute to stock market instability and unduly discriminate against investors seeking higher expected returns. The law must focus on a more rational concept of investor regulation if this problem is to be solved.

59. See text accompanying notes 25-27 *supra*.

60. See Black, Jensen, & Scholes, *supra* note 27, at 79. See also Langbein & Posner, *Market Funds and Trust-Investment Law*, 1 AM. BAR FOUND. RESEARCH J. 1 (1976).

PROPOSED REMEDIES

The ineffective and counterproductive nature of margin regulation is due to the incomplete nature of the regulations. Assuming that the decision to retain some sort of margin restriction has been made, it is necessary to change the whole regulatory framework to bring the regulations into conformity with investor needs. The regulations must focus upon portfolios as a whole rather than particular extensions of credit. It must consider the risk of the loan in conjunction with the other securities held by the persons regulated.

The necessary reform would have two major sections. First, risk would be defined in terms of uncertainty, rather than simply as risk of loss. Second, emphasis would be shifted away from the risk of capital loss associated with a particular securities loan and toward the risk of the entire portfolio. This would be accomplished by specifying a maximum level of risk, as measured by the beta coefficient of a fully diversified portfolio. Any portfolio involving risk above that specified level would, by definition, be speculative.

This reform would shift the emphasis away from the risk associated with a particular extension of a security's loan to the more meaningful inquiry of the effect on the risk of the entire portfolio. Consequently, diversification would be encouraged and market stability improved, thereby complying with the stated goals of margin restrictions.

CONCLUSION

The economic impact of margin controls is significant and necessitates substantial revision of the controls. Today's investor no longer needs to be protected against himself, but rather needs protection against the undesirable consequences of the current margin regulations. The incomplete nature of the regulations actually promotes market instability and may prevent investors from holding well diversified portfolios.

The solution to this problem is not necessarily the abolition of the controls but the redefinition of the regulations to conform to modern theory. By focusing on portfolios as a whole rather than particular extensions of credit, it would be possible to specify precise standards of allowable risks corresponding to the basic principles of modern capital market theory. The problem cannot be solved unless the goals of modern capital market theory become those of the Federal Reserve Board.