Margins of Safety and Weight of the Argument in Generating Financial Fragility

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No one who has heard Hy Minsky describe the negotiations between a bank loan officer and a potential business borrower will ever forget it. The dissection of the pro forma statement of prospective cash receipts and commitments for the proposed investment project is the focal point of the process that determines the acceptable margins of safety for both the borrower and the lender. And the idea of financial fragility is built around changes in these margins of safety.¹ It is the slow and imperceptible erosion of these margins of safety that produces financial fragility. When margins have been reduced to the minimum, even the smallest departure of realizations from expectations creates conditions in which firms have to deviate from their planned actions in order to meet fixed cash flow commitments. This can mean delayed payment or distress borrowing. If this is unsuccessful, investment plans may be delayed, and distress sales of inventory or of productive assets may be necessary. The result is a Fisherian debt-deflation process, which produces falling prices, rising real debt burdens, and the reversal of the normal laws of supply and demand. Lower prices increase supply and reduce demand.

Minsky’s main contribution to the description of these events was to point out that they were inevitable. He formulated them as an endogenous process in which sustained economic stability produced financial fragility. It has become common to describe this process of endogenous creation of financial fragility as one of mutual contagion in which the entrepreneur’s optimism, reinforced by his past record of success, eventually overcomes the natural scepticism embodied in the banker’s query “How are you going to repay the loan?” Thus, as tranquil conditions turn to

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upswing, bankers are induced to sanction lending based on pro formas with lower margins of security. Projects in which receipts always covered outflow commitments by a large margin are followed by projects in which expected earnings in some particular periods may fall short but over the life of the project cover gross cash commitments by a large margin. The result is a shift from hedge to speculative financing units. In this account, bankers are willing to sanction this decline in margins because their appetite for risk has risen along with that of their clients. In the final step, bankers throw caution to the wind and lend against projects that do not cover their commitments in any period. The only margin of safety is the expectation of being able to borrow to meet the shortfall. Fragility turns to instability since there is no solution except a debt deflation or a structured workout in which the banks absorb the losses over time while the firms restore their balance sheets.

The problem with this story is that it requires that bankers are disingenuous or that borrowers are dishonest. The former has an explanation in speculative bubbles, the latter in asymmetric information. But Minsky always maintained that bankers were inherently skeptical and insisted on margins of safety because they doubted the borrowers' estimates of future cash flows. One of the reasons was that the banker was usually better informed about the overall market environment and potential competitors than the borrower. In short, bankers are neither gullible nor irrational.

Thus, for such an endogenous, evolutionary process of the reduction of margins of safety to take place, it would seem that it should be based on something more than the susceptibility of the banker to the siren song of the borrower and his/her inflated pro forma. Even though bankers may have a better general knowledge of local competitive conditions or the future plans of competitors, they will have no better knowledge of future conditions than anyone else. As a result, the basic determination of the decision to lend will be based on the J. P. Morgan rule of the creditworthiness of the borrower. A "good credit" can be identified only by looking backward at past repayment performance, not by making hazardous future predictions.

Further, since a bank is an ongoing enterprise, the banker wants to know how he/she will get the money back from a borrower, but he/she is more interested in the answer to the question, "Can I lend to this client again?" And this will be decided primarily by past repayment performance, by "credit history" as much as by the figures on the pro forma. There are thus a number of factors that will cause the banker to give more importance to evaluation of the "credit risk" of the borrower than to the evaluation of the risks inherent in the use of the funds for a particular investment project. This, of course, implies looking backward rather than forward and assuming that the future will repeat the past.

Now, it is a characteristic of a period of stable expansion that the population of borrowers with good repayment histories is increasing. Errors that would have emerged in more difficult times are converted into success by the growth of the
market and income. In such conditions, it is not necessary to assume that the banker becomes less skeptical or diligent in making his/her credit assessments or that he/she becomes more enthusiastic and optimistic in evaluating future earnings for margins of safety to be reduced. It is just that the universe of borrowing experiences becomes increasingly positive. It is the expansion that validates more risky projects, rather than any change in evaluation on the part of the lender.

The problem of declining margins of safety would then be the result of a slightly different cause: the method the banker uses to evaluate the risk of a loan. On the Morgan principle, this will in general be to evaluate the credit risk of the borrower and to use the credit history of the borrower to predict the future. It should be clear that this is not irrational, for as Keynes reminds us, in conditions in which the future cannot be known with certainty, the assumption that the future will repeat the past is as good as any other. The banker may be considered to reason as follows: Let the primary proposition, \( p \), be: "the borrower is a good credit risk (will pay interest and principal on time)." A secondary proposition, \( p \mid h \), will indicate the banker's degree of rational belief in \( p \). Included in the information set, \( h \), will be the credit history of the borrower. As a period of expansion goes on, the amount of positive information in \( h \) increases and in doing so increases the weight of the argument in favor of accepting \( p \) as a correct assessment of a borrower's creditworthiness. The borrower will thus be preferred to other potential clients. But, as the expansion goes on, there are more and more "good credits" who represent acceptable margins of safety.

The second factor that the banker will consider is the riskiness of the project itself. This primary proposition about project risk would be that "this investment will meet its pro forma return." But the information content of \( h \) for this proposition is close to zero since "our knowledge of the factors which govern the yield of an investment some years hence is usually very slight and often negligible" [Keynes 1936, 149-50] so that \( p \mid h \) offers little guidance. The decision to lend would in this case be based primarily on convention or average opinion (cf. Keynes's [1972, 156] belief that bankers prefer to fail in a "conventional . . . way"), which means by reference to the types of projects other banks are financing. Again, neither of these depends on excessive enthusiasm or misrepresentation.

Thus over time, bankers will be lending to borrowers they previously would have refused (or would have lent only at higher margins of safety), and they will be concentrating lending to projects in particular areas simply because everyone else is doing so. As in any evolutionary process, the participants need not realize what is actually taking place: the banker does not realize that he/she is reducing his/her margins of safety. Indeed, as far as the banker is concerned, the ability of his/her clients to meet the payment of interest, based on their past performance, is if anything improving. Therefore, the margin of safety is not declining since the weight the banker attaches to the borrower's accumulating positive repayment history in-
creases with continued timely repayment. The banker thus becomes even more convinced in proposition $p$ relating to credit risk, which comes to dominate the proposition relating to project risk since the weight of the evidence is stronger. We might say that there is a tradeoff between the margin of safety and the weight of the argument. The combination of the margin of safety and the weight of the argument remains stable over the expansion, and the banker does not perceive any increase in credit risk exposure. The problem is that the weight of the argument cannot be used to meet the loss of income from loans placed on an accrual basis.

From the point of view of the borrower, a similar process takes place. But, the borrower starts from the second primary proposition of the banker. The primary proposition is that the project will generate sufficient earnings to provide timely repayment of interest and principal and produce the highest possible rate of return of those projects considered. The decision to request financing from the banker will be based on rational belief in a secondary proposition in which $h$ is virtually empty. However, as time goes on, the accumulating experience of actual results meeting or exceeding expectations leads to a more or less automatic reinforcement of the belief that project returns can be forecast correctly. The weight of the argument thus increases, or to put it another way, the borrower becomes more sanguine about believing the estimates of future receipts despite the fact that there is no factual basis for them.

Anticipated future earnings growth thus becomes an increasingly more certain substitute for current liquidity as a margin of safety against fluctuations in earnings due to errors in earnings forecasts. A 2 percent forecasting error can be offset much more rapidly if the economy is expanding at 5 percent per annum than if it is expanding at a half-percent. Indeed, it seems to be a statistical property of expansions that they are less volatile than contractions. Thus, as the cycle proceeds, the expected forecasting errors tend to be reduced as expectations become increasingly confident.

Thus, both the borrower and the banker become more confident, without any necessity for euphoria or excessive optimism. Increasingly "optimistic" pro formas in a cyclical expansion thus represent a rational reaction to the evaluation of past events as expressed in higher probabilities of success. But, as Keynes points out, success is due to no particular expertise on the part of the entrepreneur, but simply to the fact of investing in an expansionary environment. The problem is not that the banker starts to finance speculative rather than hedge projects, or ponzi rather than hedge projects. Indeed, the pro formas in all probability do not reveal these changes as the borrowers revise earnings estimates upward in the light of past experience, and they will be confidently accepted by the banker. But there need be no misrepresentation, since the banker will be primarily concerned with past credit history as a measure of the reliability of the pro forma. If there are any doubts based on the plausibility of the pro forma, the decision will be circumscribed by the actions of
other banks, since refusing a loan simply means loss of market share. This not only means that the plausibility of the *pro forma* will be of secondary importance, it also leads to the banker failing to fully exploit proprietary knowledge of overall market and competitive conditions. The results are overinvestment and concentration of risk.

It is tempting to say that bankers are using inappropriate methods in evaluating their margins of safety. Instead of looking at credit histories and the behavior of other banks, they should be looking at the impact of unforeseen events, such as changes in monetary policy on the ability of clients to repay. From the point of view of the fragility of the *pro forma* estimates, the margin that they should be looking at is the reaction of prospective cash flows to conditions in which interest rates will have risen to choke off the expansion, so that both interest costs are rising and cash receipts are falling short of expectation, putting pressure on the acceptable margins of safety—or what are now called "stress tests" of bank balance sheets.

The tripartite classification of borrowers would thus be made by reference to the impact on margins of safety of a change in interest rates. A firm for which the margin of safety is positive for any probable (say two standard deviations) increase in interest rates may be classified as having fully hedged its future cash commitments. One in which the margin of safety is insufficient for some periods is speculating that the rise in interest rates will not be such as to increase the number of those negative earnings events to the point that it reverses its positive net present value (or turns its "wind up" value to the banker negative). Finally, the firm that as a result of a probable rise in interest rates has to go back to the banker and capitalize its interest payments in a renegotiation in order to prevent bankruptcy is practicing "ponzi" finance. Hedge, speculative, and ponzi financing positions at current interest rates may all have the same flows of cash commitments, but they will have different margins of safety to protect them from probable changes in future interest rates and increasing future payment commitments.

Here we have added an additional set of forecasts to those in the *pro forma*, the forecasts of the likely change in interest rates and the duration of the change. A 25 basis point change has a much different impact on margins of safety than a 75 basis point change or an expectation of a string of 25 basis point rises spread out over a year. However, this does not solve the problem, for all the models that evaluate balance sheet risk in this way base the probability of a change in interest rates on the past performance of interest rates. In an expansion, these measures will be declining in the same way as the weight of the argument about borrowers' credit history is increasing. Bankers, like most others, seem to be very bad at formulating interest rate expectations. Indeed, the majority of bank failures (before the 1980s avalanche) were the result of the impact on bank investment portfolios of mistaken bets on interest rates [cf. Sprague 1986]. At the end of 1993, surprisingly few bank economists were predicting the rise in interest rates that took place in 1994.
Thus, the process of increasing financial fragility need not be accompanied by misinformation, asymmetric information, excess optimism, or irrationality. The more things change, the more things appear to remain the same as far as margins of safety are concerned. Financial fragility need not necessarily be visible in terms of changes in the composition of the quality or composition of the assets on balance sheets. Nonetheless, margins of safety are being eroded, and risk is increasing. We are thus left with what is the major strength of Minsky’s idea of financial fragility. You cannot prevent it if you try. Indeed, trying is not rational. It is the natural result of the rational operation of a capitalist system.

Notes

1. I have always presumed that Minsky took both the idea and the terminology from Graham and Dodd’s *Security Analysis*, which identifies the earnings coverage of total interest commitments as the most comprehensive measure of the margin of safety. The margin of safety offers protection against the untoward events that confirm the fact that past performance is not a conclusive predictor of the future.

2. "[A] man I do not trust could not get money from me on all the bonds in Christendom" [J. P. Morgan, cited in Chernow 1990, 154].

References


