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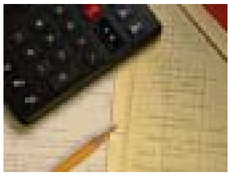

Economics & Financial Markets

United States Equity Markets

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Financial Regulatory Reform: and the Challenge to Modern Portfolio Theory (MPT) - Part II

I. Introduction

On June 17th 2009 the Department of Treasury rolled out its working proposal entitled the *Financial Regulatory Reform a new Foundation: Rebuilding Financial Supervision and Regulation (FRRP).* The proposed contains five major suggested areas for reform:

1. Supervision and Regulation of Financial Firms
2. To establish comprehensive supervision of Financial Markets
3. Protect Consumer and Investors from Financial Abuse
4. To Provide the government with the necessary tools to manage financial crises
5. Raise International Regulatory Standards and improve international cooperation.

There are two central themes that run through the entire reform package:

1. Control of Leverage is critical to stabilization of the international economy and
2. Much less central there needs to be more oversight protection for the consumer, but the converse is also true that the consumer sold products must be of higher quality for the financial community to survive successfully.

These two themes are at the center of the reform package that cuts to the very core of Modern Portfolio Theory (MPT) which is the centerpiece of every portfolio risk model.

From the work of Harry Markowitz in the late 1950's to the introduction of Arbitrage Pricing Theory (APT) in the late 1970's, these approaches were major catalysts for the expansion of Hedge Funds in the 1980 and 1990's. The proposed regulations and their recommended restrictions on leverage, is likely to be a challenges to the very the core of modern portfolio theory, and its application within the financial industry. MPT or more specifically the Capital Asset Pricing Model (CAPM) and its extension and modifications like APT, are approaches to reduce risk for well diversified portfolios.

CAPM strove to reduce risk by reducing the risk of a particular portfolio based on its Beta and its covariance to other assets. While this approach was intended to capture both market risk or portfolio risk and systemic risk, it performs better on portfolio risk and much worse the more sever the systemic risk becomes, because at the extremes all asset correlations approach one (1).

APT, interesting was developed as a way to measure systemic risk by using multifactor models which went beyond the covariance of a given asset and or its Beta. MS Barra is one of the more success participants in what had become an attempt to interpret the risk of a portfolio and developed a highly successful compliance business around the evaluation of managed portfolio risk.

With respect to both CAPM and APT approach once the portfolio risk was determined and the efficient frontier risk reward was assessed one would choose the portfolio closet to the risk free portfolio and then leverage the portfolio with the low risk portfolio several or multiple times to achieve a higher return. If the risk was low one could improve the returns by leveraging the portfolio by in essence keeping a low risk portfolio, while increasing the return through leverage, making a 2 to 3% return workable since it was leveraged and returning 10, 15% or more depending on the leverage.

Herein we have the intellectual foundation of the current financial crisis. If one creates a risk free asset there is no risk so one can leverage that asset many times turning a very small return into an acceptable return. If one could indemnify that asset or low risk portfolio further and have enough return after paying for the insurance you could leverage that asset even more. And that is how 180 Billion dollars of bailout money wound up at the doorstep of AIG, and how Goldman Sachs survived this crisis almost untouched.

This leaves us with the question: Should we contact the Nobel Prize committee and suggest that Markowitz should return his prize because his theory failed, or was the theory sound and the application flawed? The application was flawed, the theory was sound. The application became flawed because the bundling of assets were no longer equities with highly diversified efficient markets but bundled mortgages, derivatives, and various swaps where the markets were not nearly as efficient and systemic risk was harder to hedge.

The main difference between APT and CAPM is that APT does a better job than CAPM on systemic risk. The problem with APT is that it is more limited and needs a highly efficient and liquid market to work. Even then APT really has not been very successful.

It is this hole that Philip Miller at SISR attempted to close. We observed what happened to NASDAQ based portfolio's in the crash of 1999 to 2000. We understood the risk of diversified portfolios, with all markets and assets going down. From that point we developed an APT type approach that would alert us prior to the decline in earning where the trouble signs were and in good times where the growth is. In this respect our entire focus at NES is on the macro picture, but not in a traditional manner but with a complete focus on sectors and sector performance.

We at NES use a method that was developed by Philip Miller while at Strategic International Securities Research (SISR). The work of Philip Miller at NES and before was an attempt to modify the APT models with sector data so as to see and anticipate these disasters as they began to unfold to recommend to our clients to "Head to the Hills" which we did once we saw the 10 year note less the Fed Fund rate (FFBond) rate go below Zero in 2007. In April 2008 when almost everyone else was looking for a soft landing we argued get a life we are in a recession since November. Four months later the NBER dated the recession from December 2007 (SISR, Labor contractions and Recessions, April 5, 2008).

The model also works in the converse to identify sectors early when they appear to be outperforming. (For a full description of the Cross-section Economic Factor Analytic (CEFA) please consult the SISR website www.sisresearch.com and in the near future the NES website). Part III of this report will focus on how to solve the issues with systemic risk but for current purposes we will focus exclusively on what we believe will be the impact of the proposed regulations.

We are fearful that the regulators are about to change the way in which financial products are created with the likely result that the financial firms will no longer be able to successfully arbitrage risk and will be forced to take on riskier base assets while moving up the efficient frontier to make their numbers. The net effect of the regulations we fear is that by regulating a reduction in leverage which is intended to reduce system risk the net effect may well turn out to be great risk taking by the portfolio manager, a rather counterintuitive conclusion.

II. The Financial Crisis of 2007 to 2009

On June 18, 2009 we argued that President Obama in the presentation of these reforms argued that the FRRP was a set of reforms resulting from a culture of "a culture of irresponsibility." In that report we stated that:

> The backbone of the plan would give additional powers to the Federal Reserve for oversight of the financial system and create a new consumer protection agency. The set of reforms are being sold as a solution to future Financial Crisis similar to the crisis of 2007 to 2009. Our objective in this introductory piece is to begin to establish a major concern with the logic and attention that is going to be directed at the financial sector, without a similar focus to the codependent cause of this recession the high price of energy (p. 1, NES, *The Proposed Financial Reforms,* June 18, 2009).

We argued that the Obama administration may be fighting the wrong war in that the high cost of energy was at minimum a codependent cause of the crisis and most likely when the historians are finished with this period the catalyst that intensified the housing and ultimately the financial crisis. The central problem was that under the pressure of the high gasoline prices the mathematical models that were at the center of CAPM models failed on the pressure of the extreme condition. What were believed to be low risk assets, especially when bundled, at the extreme came apart and the unfolding was magnified by the level of leverage that was used in these instruments.

We furthered argued that there may be a rush to regulation from this experience. The Legislature has become focused on the cause of the crisis almost from the perspective of why Lehman Brothers failed. In an excellent statement by Professor Luigi Zingales of the University of Chicago Business School on October 6, 2008 before the House of Representatives, he argued that Lehman failed because of "bad regulation, lack of transparency, and market complacency brought about by several years of positive returns." He hit all the high points:

1. Low Interest rates
2. Increasing home prices
3. Deterioration Lending Standards
4. Failure to consider that in a crisis the correlations all go to 1.
5. Large amount of issuance by a limited number of participants created leverage against the rating agencies leading to AAA ratings that were less logical.
6. Regulators encouraged banks and other institutions to invest in these CDO's
7. Loans by backs required zero capital to be allocated to loans hedged with credit default swaps.
8. Problem of counterparty risk with the possibility that the insurer will default.
9. The lack of transparency with credit default swaps as a hedge mechanism reducing risk.

The interesting aspect of the Zingales presentation is that the current Treasury working paper is an attempt to close some of the direct causes of the financial crisis which they believe has a tremendous parallel relationship to the decline of Lehman. This report will not focus on the codependency of oil on the crisis but will attempt to focus on the goals of the regulations and attempt to interpret the effect of those regulations.

III. The Financial Regulatory Reform Working Proposal

The Department of Treasury proposal the FRRP has five major components:

1. Promote Robust Supervision and Regulation of Financial Firms
2. Establish Comprehensive Regulation of Financial Markets
3. P:ortect Consumers and Investors and Financial Abuse
4. Provide the Government with the Tools it Needs to Manage Financial Crises
5. Raise International Regulatory Standards and Improve International Cooperation.

As noted there are two unifying themes to: 1) reduce leverage and 2) protect the consumer from making poor choices that can have had a devastating effect on the financial institutions.

1. Promote Robust Supervision and Regulation of Financial Firms

This provision would promote a Financial Services oversight council with one of its main functions that will "conduct a fundamental reassessment of existing regulatory capital requirements for banks and bank holding companies." It would also improve accounting standards to "determine how financial firms should be required to employ more forward-looking loan loss provisioning practices that incorporate a broader range of available credit information.

2. Establish Comprehensive Regulation of Financial Markets

The key concept here is that the attempt to "increase the transparency and standardization of securitization markets and be given clear authority to require robust reporting by issuers of asset backed securities (ABS)." The would regulate all OTC derivatives markets, including CDS markets, should be subject to comprehensive regulation that addresses relevant public policy objectives; (1) preventing activities in those markets from posing risk to the financial system; (2) promoting the efficiency and transparency of those markets; (3) preventing market manipulation, fraud, and other market abuses; and (4) ensuring that OTC derivatives are not marketed inappropriately to unsophisticated parties.

3. Protect Consumers and Investors From Financial Abuse

This provision would create a single primary federal consumer protection supervisor to protect consumers of credit, savings, payment and other consumer financial products and services, and to regulate providers of such services to create: transparency, simplicity, fairness, and access.

4. Provide the Government with the Tools it need to Mange Financial Crises

This is likely to be the most important provision of this regulation in that it will provide the tools to the Treasury and the Federal Reserve to act in a crisis, where during this past crisis much of what they did was quasi beyond the normal limits of their authority (Cajoling BAC to complete the merger with MER).

5. Raise International Regulatory Standards and Improve International Cooperation

Given the level of interconnection between the international capital markets any efforts in this direction is essential. I would not be surprised to see an international central bank with limited powers within the next twenty years.

IV. Possible Unanticipated Consequences of Reduced Leverage

From the presentation to Congress by Zingales to the reforms to the working proposal that the Treasury provided congress, there is a high degree of consistency with Zingales statement of the problem that caused the 2007 to 2009 crisis. The Treasury approach to the crisis in short can be seen as making sure that a Lehman impact on the larger economy never happens again. The Treasury proposal in essence is an attempt to prevent companies like Lehman from failing. Given the amount of leverage that these structured products produced they were capable of bringing down not only particular companies, but the entire economy. This occurrence needs to be eliminated, they believe.

The essence of the approach is to bring greater transparency to the systemic risk of these structured products, but in so doing they are likely to reduce leverage in other areas that will cause additional risk to the markets. These structured products were not as secure from systemic risk as some believed and when pressure from the household was applied to them, everything came apart. We argued that oil was the catalyst that caused the household to become unbuckled which drove the entire system in near kayos. Derivatives, credit default swaps, CMO's, and a host of alphabet soup acronyms, that gave the appearance of reduced risk and allowing leverage for those transaction, caused the severity of the crisis and this is what the regulators are attempting to addressed. They as noted earlier however, are not addressing the codependent cause the high price of oil that hurt the household and retarded their ability to pay their mortgages.

The irony is that all these instruments were attempts to reduce risk to the portfolio of transactions, and the leverage was simply a way to make a normal return on what was assumed near risk free asset. This problem unfortunately cuts to the very core of MPT, and even more ironically the difference between Capital Asset Pricing Model (CAPM) and Arbitrage Pricing Theory (APT) which is the attempt to address systemic events beyond the assets beta (β) that cause the correlation of the variable to begin to approach 1. Our fear is that the amount of leverage that will be reduced by regulation will be system wide and will affect the way that portfolio managers in the future behave, particularly if they are part of a major institution like a bank or bank holding companies.

V. **Market Implications**

Banks, bank holding companies, and other similar financial institutions will in the future be more scrutinized and have their leverage reduced. This will force the portfolio manager to move up on the efficient frontier line to take on greater risk to make their desired returns or the returns that their management would like. This is the reason why there are proposals to cap compensation, to reduce the risk that the manager feels compelled to take on.

In essence than rather than reducing risk portfolio managers will be taking on more risk, unless their compensation does not matter, and in that regard they will not care and produce lower returns for their firms. If this is correct then companies like Morgan Stanley and Goldman will have more volatile earning if they allow their managers to take on the greater risk or if not they will have chronically lower earning.

Even the hedge funds are likely to become affected in this regard as they become registered and regulated. The big impact on the financial institutions is that the large banks and brokerage business will likely show lower returns, and higher volatility in their stock price, which in turn will create greater risk for those institutions own survival, the central issue that is at the heart of these regulations, the preservation of these institutions.

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