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Symposium on Public Policy Issues in Finance

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Symposium on Public Policy Issues in Finance

HAYNE E. LELAND, MARTIN FELDSTEIN, ROBERT R. GLAUBER,
DAVID W. MULLINS, JR., AND STEVEN M. H. WALLMAN*

ABSTRACT

The thesis of this symposium, organized by James Bicksler, was that while finance theory will surely inform practitioners, it seems appropriate to pay some attention to the opposite flow: practitioners can inform theory. Contributors include a distinguished group of practitioners with extensive backgrounds in economics, and economists with extensive public policy experience: Martin Feldstein, Robert Glauber, David Mullins, and Steven Wallman. Their topics range from privatizing social security, to managing market crashes, to the regulatory agency cost problem, to regulatory constraints in a technologically advanced world.

Introduction to the Symposium on Public Policy Issues in Finance **Hayne Leland**

JADED BY THEORY? Dubious of data? Of course not—they are our profession's life-blood. We know that real world policies will be shaped by some economists, defunct or not. We're just not sure which ones. So it is entirely appropriate to cultivate a diversity of economic models, even if only a small fraction ultimately may bear fruit.

While finance theory will surely inform practitioners, it seems appropriate to pay some attention to the opposite flow: practitioners can inform theory. That was the purpose behind a special session at the January 1997 American Finance Association meetings, organized by James Bicksler. Several of the topics that were explored in that session are presented here. Contributors include a distinguished group of practitioners with extensive backgrounds in economics, and economists with extensive public policy experience. Martin Feldstein, George F. Baker Professor of Economics at Harvard and President of the National Bureau of Economic Research, was Chairman of the Council of Economic Advisors from 1982 to 1984. Robert Glauber is Professor at the John F. Kennedy School of Government at Harvard, and headed the staff of the Brady Commission's study of the 1987 crash. David Mullins, a principal of Long Term Capital Management, was formerly Professor of Finance at the Harvard Business School. And Steven Wallman is a Commissioner of the Securities Exchange Commission (SEC). Their papers reflect their opinions on

* This symposium was organized by James Bicksler, Rutgers University. Hayne Leland is at the University of California Berkeley, Martin Feldstein, Harvard University and President of the National Bureau of Economic Research; Robert Glauber, Harvard University; David Mullins, Long Term Capital Management; and Steven Wallman is a Commissioner of the Securities and Exchange Commission. All the views expressed are those of the authors and do not necessarily reflect the positions of their respective institutions.

a range of topics that face today's decision makers. They challenge our profession to further develop the appropriate theory and data needed to make informed decisions.

Public Policy and Financial Markets: Privatizing Social Security **Martin Feldstein**

The public policy change that could have the greatest effect on financial markets over the next decade would be the shift of Social Security from an essentially unfunded program to a system of mandatory IRAs or 401k plans in which retirement income is based on investment in private debt and equity markets. Although the recent official 1994–1996 Advisory Council on Social Security (1997) did not reach a unanimous conclusion, all three of the proposals offered by members of the Council involved investments in private securities and the largest group of Council members supported a plan that would involve creating individual mandatory accounts.

The potential advantage of such a change would be enormous (Feldstein (1996), Feldstein and Samwick (1996), and Kotlikoff (1996)). It is therefore a major challenge to financial markets to develop the institutions and products that would permit private markets to replace some or all of the current unfunded program with such a privatized system.

Social security today imposes a 12.4 percent tax to finance pensions, life insurance, and disability insurance. Because of the demographic change that will occur over the next 25 years, maintaining the current relation between retirement benefits and preretirement earnings would require raising that tax rate to about 20 percent by the year 2030. Such very high payroll tax rates, added on top of the existing marginal personal income tax rates that range between 15 percent and 40 percent, impose very large deadweight burdens. They do so by distorting labor supply (not just the labor force participation rate and number of working hours but also effort, occupational choice, education, risk taking, etc.) and by distorting the form in which compensation is taken (inducing individuals to substitute fringe benefits and enhanced working conditions for the cash that they would prefer if it were not subject to high marginal tax rates). Some rough calculations suggest that the annual deadweight loss caused by the payroll tax will soon reach \$200 billion a year and that the relative deadweight loss would be even higher in the future as the required tax rate is increased.

These large deadweight losses would be avoided if the current unfunded pay-as-you-go system was replaced by a funded system based on real incremental saving. The total real return on additions to the capital stock (i.e., the real return before all corporate and personal taxes) has averaged 9.3 since 1960. While that sounds high because we are accustomed to thinking about a real return on a portfolio of equity and debt that has averaged about 5.5 percent over the same period, those two figures are quite consistent when one takes into account the fact that taxes paid by corporations to the federal, state

and local governments have averaged about 40 percent of pretax income during those years.

With a real return of 9.3 percent, the future payroll tax of 20 percent could be replaced by mandatory contributions to IRAs or 401k type plans of just 3.2 percent (Feldstein and Samwick, 1996). Even if the rate of return were only 5.5 percent—the return after all corporate taxes—the 20 percent payroll tax could be replaced with a mandatory contributions of only about 5.2 percent.

Shifting from a 20 percent tax on which taxpayers earn a very poor pay-as-you-go implicit rate of return of less than 2 percent to a much smaller mandatory contribution that earns a high real rate of return would avoid an enormous deadweight loss due to distortions in labor supply and in the form of compensation.

The current unfunded system also means that we as a nation are foregoing a major opportunity to increase the rate of capital formation and to earn a high real return. Because of anticipated social security benefits, most Americans do little or no saving for retirement. The median financial assets of households at age 60 is less than six months of income.

One way to measure the loss from reduced national saving is to note that if we now had a funded system, the current social security benefits to today's retirees could be financed with a 2 percent of payroll contribution instead of the 12.4 percent tax. That means that if the United States now had a funded system, retirees would have the same benefits as they now get from the pay-as-you-go system while current employees would have higher current consumption equal to about 10 percent of payroll earnings, i.e., the difference between the current 12.4 percent tax today and the contribution rate of about two percent that would be required in a funded system. That increase in current consumption would raise consumption of the typical employee by about 15 percent, equivalent to the cumulative growth of more than a decade.

The gain in national income would also be equal to about 4 percent of GDP. Another way to state this is to note that because we do not have such a funded system, GDP today is \$300 billion less than it would otherwise be—an amount that will grow in proportion to GDP in the future. And that extra real income is in addition to the reduced deadweight loss caused by the decrease in the tax distortions in labor markets.

So the reward for shifting to a funded system based on individual accounts is potentially enormous. Can it be done?

I am convinced that such a shift is feasible and that with U.S. economic and demographic conditions, the transition to a fully funded system would require only a very modest increase in the combined total of the current payroll tax and the new mandatory contribution, an increase that might be kept as low as 1.5 percent of payroll (Feldstein and Samwick, 1996).

There are, however, three important technical challenges to financial markets that need to be solved if this is to be politically acceptable:

1. *Individual Annuities.* How can a market in actuarially fair (or near fair) individual annuities be created? What is the best way to solve the prob-

lem of asymmetric information and self-selection? Would making individual annuities mandatory be sufficient? Is it necessary?

2. *Financial Market Risks.* How can funded individual retirement accounts protect the savers from the risks of very low market values during retirement years? Those who object to privatization of social security often emphasize that retirees cannot accept the full risk of typical debt-equity portfolios. What kind of safety net is desirable? Can markets help? Can they do so without too much loss of expected return?
3. *Real Annuities.* Equity based annuities are becoming more common in practice. But if individuals want real annuities linked to the Consumer Price Index (CPI) or some other price index, what can be done without a substantial sacrifice of yield of the sort that would be entailed in basing an annuity on the new Treasury inflation protected securities?

These are three real problems that must be faced. Although I do not have answers to the questions that I have posed, I do not think that these are insuperable problems. The social and private rewards for finding the answer are potentially enormous.

REFERENCES

- Advisory Council on Social Security, 1997, *Report of the 1994–1996 Advisory Council on Social Security Volume I: Findings and Recommendations* (Washington, D.C., U.S. Government Printing Office).
- Feldstein, Martin, 1996, The missing piece in policy analysis: Social Security reform, *American Economic Review*, 86:2, 1–14.
- Feldstein, Martin, and Andrew Samwick, 1996, The transition path in privatizing Social Security, NBER Working paper No. 5761, forthcoming in Martin Feldstein (ed.), *Privatizing Social Security* (Chicago: Chicago University Press).
- Kotlikoff, Lawrence, 1996, Privatization of Social Security: How it works and why it matters, in J. Poterba (ed.), *Tax Policy and the Economy* (Cambridge: MIT Press).

Systemic Problems in the Next Market Crash

Robert R. Glauber

The stock market finished last year near an all-time high. During the year, investors' rapture with stock mutual funds seemed to know no bounds. The previous record of \$129 billion of net new money into stock funds was surpassed before mid-year. By the end of November the amount had reached \$217 billion. With all these new investors doing the same thing, one can't help but wonder at the potential for systemic problems if many of these investors ran for the exit at the same time. The public policy question is what can, and should, regulators and mutual funds themselves do about this concern?

In the stock market we worry about situations where lots of traders are explicitly or implicitly using the same model, where similar actions can be triggered by some event. In this situation of model-induced, herd-like behavior, prices will move a lot or a little depending first, on how many traders follow the same model and second, on how supply and demand behave. If supply and

demand are relatively price-insensitive, that is, inelastic, then prices can move a lot on relatively small volume.

For example, in a selling vortex, supply will be inelastic if sellers continue to sell—perhaps even accelerate—in the face of falling prices. And demand will be inelastic if new buyers are not brought from the sidelines by the sight of rapidly falling prices. In essence, if both sellers and potential buyers take the evidence of falling prices as information that prices are falling for good reason, then supply and demand will be price insensitive, that is, inelastic.

What would make a large number of investors follow the same model? First, and most likely, they could be unaware of how many are in fact doing the same thing. But alternatively, they could make particular and misleading assumptions about supply and demand. On the demand side, an investor could assume that others will want to buy if he wants to sell—i.e., lots of liquidity. On the supply side, he could assume if prices fall, selling pressure from others will evaporate—i.e., competing sellers won't use up what liquidity there is. Essentially, investors assume that supply and demand are both price-sensitive.

In 1987 all the pieces came together to produce devastating price declines. Large numbers of investors followed the same models—institutions in the case of portfolio insurance and individuals in mutual funds. And these models produced price-insensitive supply and demand.

Let me remind you quickly of the major findings of the Brady Commission's study of the 1987 crash. First, precipitous price declines occurred on relatively small volume. Prices declined 31 percent, \$1 trillion, which was 1/3 of market value, in four days of trading. And this price collapse was triggered by small volume—turnover of only 3 percent. The commission concluded that as liquid as U.S. markets are, they are less liquid than many thought. In essence, supply and demand behaved as if they were very inelastic.

The second finding was that selling was very concentrated in the hands of two kinds of institutions: portfolio insurers and mutual funds. Three portfolio insurance sellers sold \$2 billion of stock on the New York Stock Exchange and three portfolio insurers sold about \$3 billion of stock index futures contracts on the futures exchanges, about 10 percent and 15 percent of respective total volumes. Mutual funds, responding to fundholder redemptions, sold \$900 million of stock, about two-thirds of it in the first half-hour of trading.

Both portfolio insurers and mutual funds as sellers operated on potentially dangerous disciplines: the assumption that others would buy what they wanted to sell and selling behavior that was insensitive to declining price.

Portfolio insurance was a reactive technique that sought to insure value in the face of declining prices by rapid liquidation of stock positions. Perhaps because they viewed their selling as informationless, portfolio insurers expected others to buy what they were selling. On the supply side, the portfolio insurance model dictated selling which was price-insensitive. Indeed, rather than dry up as prices declined, portfolio insurance selling accelerated. Between \$60 and \$90 billion was run by portfolio insurance in this world of inelastic supply and demand.

How about mutual funds? The major selling point was that fund investors had liquidity. Advertising invited investors to expect that positions could be sold near the per-share price published each day in the newspapers. The source of the liquidity? Either new fund investors or cash held by the fund.

So how did it work out in 1987? On October 19 alone, mutual fund net redemptions were \$2.3 billion, just under 2% of assets. About two-thirds were met from cash reserves, leaving just under \$800 million to be dumped on the markets. On the supply side, mutual fund portfolio managers faced a situation similar to portfolio insurers. Confronted with massive redemptions, limited cash, and fundholders to cash out, mutual fund managers had to sell their stock holdings *whatever the price*. Just as the portfolio insurance model called for price-insensitive selling, so did mutual funds. As prices fell, the supply of stock didn't dry up; if anything it increased.

In both cases—portfolio insurance and mutual funds—as prices fell, demand dried up and selling increased. Supply and demand behaved as if inelastic. The result was, as they say, history.

So much for the unhappy past. What's to worry. That was the 80s. This is the 90s—the longest bull market of the century. A bull market with no declines as great as 10 percent since 1990. Indeed, one sage analyst was recently quoted as saying Traders should be ready to quickly buy pullbacks. And, of course, that's just what mutual fund investors have done, most recently in the July and November dips. Of course, the pullbacks have hardly been noticeable. But that's just carping. Another analyst recently said, Investors are *now* going to benefit from corporate downsizing, government cutbacks, and the discipline of eliminating the threat of inflation from the economy. This is the *beginning* of the stock market's best 15 years for the small investor.

The fears of the 80s are not with us today. The rules that applied then apply no more. The models which induced price-insensitive selling that accelerated the collapse are out-of-date. Or are they?

Portfolio insurance is certainly not a problem. The experience of 1987 inoculated institutional investors against a strategy of massive, price-insensitive selling that made liquidity demands on the market it could never meet. And presumably enough time has not yet passed for the inoculation to wear off. Of course, equity derivatives, if hedged dynamically, could cause a similar problem, but that's for another day's discussion.

How about mutual funds? The last several years have seen an unprecedented torrent of money flow into stock mutual funds. Over the last two years, net new money into stock mutual funds has totaled about \$350 billion. Most of this new money has, not surprisingly, gone to purchase common stocks, supplying much of the fuel for the market's rise. In the last year, mutual fund net purchases of common stock as a percentage of market capitalization has been about twice the level it was in the nine months leading up to the 1987 crash.

About one-fifth of all mutual fund investors made their initial investments within the last two years, and haven't seen a 10 percent decline since. And 85 percent of the money in equity mutual funds has been invested in the last five years; it too hasn't seen a 10 percent decline. Strikingly, however, a recent

survey by Smith Barney, the brokerage firm, found that fully 40 percent of mutual fund investors would sell all or some of their holdings in the face of a 15 percent decline. This raises the question: could massive redemptions by mutual fund investors cause fund managers to liquidate carloads of stock holdings without regard to price, producing the same kind of price-insensitive selling experienced in October 1987?

What's at stake? At the end of November, stock mutual funds held \$1.76 trillion in assets. If one-day redemptions were 1.5 to 2 percent (as they were on October 19, 1987), about \$30 billion would be cashed in. How much of those redemptions could be met by cash holdings in the funds rather than portfolio stock sales depends on cash levels. But if funds met two-thirds of redemptions from cash holdings and only one-third from sale of portfolio stocks—as they did in 1987—that still means they would sell almost \$10 billion of stocks, equal to over 60 percent of average daily volume on the New York Stock Exchange. (In 1987, mutual fund sales totaled only 10 percent of average daily volume.)

Much depends on how much cash mutual fund managers are holding. The present situation is not reassuring. As of November, stock mutual funds held 5.8 percent cash, down from 6.4 percent in the previous month and 10 percent in October 1987. Cash reserves are the lowest in 20 years. The plight of the prudent portfolio manager who tries to build cash as the market gets to increasingly high levels is not a happy one. A recent *Wall Street Journal* article quoted a senior Fidelity manager as saying, Am I worried about the market? Yeah, I'm worried about the market. Am I fully invested? Yeah. My investors want me to be. That same article told the plight of another manager who has defensively accumulated cash, only to receive letters from his irate investors labeling him a brain-dead bear.

With cash levels low, mutual funds are vulnerable to massive redemptions if investors ever get frightened and sell into a decline to seek the safety of certificates of deposit, from whence they came. Remember, on October 19th, in the first half hour of trading several mutual fund groups sold about \$600 million of stocks (just under \$2 billion at today's levels) on the New York Stock Exchange.

What can and should be done about this potential danger? First, there are steps the private sector can take and indeed has taken. The exchanges have invested heavily to increase capacity and the specialists have added capital to better handle bursts of trading. The New York Stock Exchange is said to be able to handle a two-billion-share day without interruption. And the exchanges have instituted circuit breakers to allow for orderly, preplanned time-outs when trading activity overwhelms the ability of traders to process information. The trigger points of these circuit breakers have recently been broadened (not far enough in my view) to reflect the tripling of the stock market indices since 1988, when they were first set. Finally, the options and futures exchanges have agreed on limited cross-margining procedures.

The regulators have also taken some effective steps. The Working Group has provided a mechanism for enhanced cooperation and coordination among the various regulatory agencies. Actual consolidation of several of the regulators,

or at least the consolidation of all stock-related instruments under one regulator, would be a further improvement in my view.

Since Chairman Greenspan's comments on a possible market bubble in early December, some have asked if it is appropriate for the Fed to concern itself with stock market excesses. I think it clearly is appropriate. The need to provide emergency liquidity to the market in the face of a market collapse poses the risk to the Fed of losing control, if only temporarily, of the money supply and monetary policy. And a rapidly collapsing market bubble can affect the real economy for a long time—just look at Japan. The real message to me of the Chairman's comments on irrational exuberance is that words, unaccompanied by action on rates, don't count for much.

But it is mutual funds themselves that hold the key to cushioning the impact of massive fundholder liquidations. The funds have taken some steps to deal with the potential disruptions. They have run stress tests on portfolios to see what can be liquidated and how quickly; one hopes these tests are really informative. Fund groups have increased telephone capacity, which will reduce investor confusion, frustration, and fear, but ironically may make redemptions easier.

Funds can increase cash levels, but competitive pressures for performance and fear of ridicule will likely dull portfolio managers' willingness to do much of this. Closing funds to redemptions—they are allowed to do this for a week—is an alternative. But this has happened rarely and only for a few days, because mutual funds want to preserve at almost any cost the image of liquidity they project to investors. A related device is to provide redemptions in *kind*. That is, when the investor opens the envelope, he finds stock, not cash. But, as Hallmark says, When you care enough to send the very best—stock is no substitute for cash.

The best device to cushion the impact of portfolio stock liquidations in response to fundholder redemptions is *committed lines of credit*, which funds arrange in advance and which the banks must honor. The effective cost of these need not be great—a couple of basis points in yield—and most mutual fund by-laws permit credit lines. Such credit lines would give the manager the capacity for limited borrowing on a temporary basis to ride out the storm of selling pressure and await the bounceback in prices he anticipates. Of course, whether the portfolio manager would borrow or sell stocks to meet redemptions is a decision he gets paid to make. But temporary borrowing is an option which could prove very valuable. Anecdotal evidence suggests some funds have done this, but not many.

So bottom line, can the same kind of perverse processes accelerate a market break today as they did in 1987? Probably not, but we really don't know. Equity derivatives, if hedged dynamically, could produce selling similar to portfolio insurance. Of perhaps greater importance is the possible selling by stock mutual funds. These funds, grown fat on the new money of individual investors convinced for now that stocks are no riskier than bonds, could confront immense needs to liquidate portfolio stocks as these new investors retreat back to bond funds and certificates of deposit.

The Regulatory Agency Cost Problem **David W. Mullins, Jr.**

In my discussion I would like to focus on financial regulation—that is the regulation of financial firms.

From a narrow perspective, financial regulation has made great strides in recent years. Particularly useful developments include the trend toward the supervision of internal control systems, specifically the supervision of risk management systems to encourage firms to focus on risk exposures and correlations, measures of value at risk. This approach supplements and supplants the older style focus on trying to assess the static quality of individual assets. These developments mirror the private sector developments and encourage regulated firms to implement the same sorts of risk control systems as private incentives have led unregulated firms to implement. I think these are healthy developments likely to increase the chances of sound regulation in a rapidly evolving financial system.

The Theory and Practice of Financial Regulation

Since financial regulation at a micro-level seems to be going reasonably well, it may be useful to address financial regulation from a broader and more conceptual level. Much of financial regulation was originally rooted in reasonably sound economic principles. The original purpose was to increase economic efficiency. The rationale involved focusing on imperfections in the financial markets and using regulatory intervention to improve the functioning of the financial system.

While financial regulation may be originally designed to promote economic efficiency, an interesting thing happens once it is created. Regulation takes on a life of its own; regulating entities become living, breathing economic agents.

Constituencies emerge endogenously and regulators like any economic agents pursue their own best interests. They create economic benefits for constituencies which in many cases produces wide departures from the original objective of economic efficiency and indeed often adversely affects economic efficiency.

Regulatory Constituencies

Who are these constituencies that affect regulation? I think they are pretty well known. First, there is the regulated industry itself, which can use regulation as a barrier to entry, a shield to competition, and in the extreme regulated industries have, on occasion, simply captured the regulatory process to extract value from taxpayers. The classic case is, of course, the S&L industry that captured its independent specialized regulator, producing large losses for taxpayers and substantial cost to the economy. Other constituencies include competitors of the regulated industry, which use regulation as a shield against competition. The activities of banking competitors (i.e., securities firms, the

insurance industry) in thwarting the long overdue repeal of the antiquated Glass-Steagall restrictions would be an example.

An impressive array of consumer constituencies have been successful in extracting specialized regulatory benefits. These constituencies include the usual suspects with political clout: agriculture, small businesses, and especially the housing industry.

Then there are many constituencies one would not think of as intimately connected to banking and finance. As on-budget expenditures on social programs were reined in due to budget constraints, social constituencies simply turned to regulation to extract benefits from regulatory entities.

Examples include the Community Reinvestment Act, the Home Mortgage Disclosure Act that many view as forms of and attempts at credit allocation to worthy groups. This socially related regulation now aggregates to a burden in terms of cost to the industry that rivals and may exceed the compliance cost of traditional safety and soundness regulation.

Time constraints preclude my continuing with the list of constituencies who have taken a bite of regulation. One must mention the most central constituency guiding regulation—that is, regulators themselves. Over the past several decades regulation has been a growth industry, and regulatory initiatives have produced growing employment, incomes, prestige, and influence as well as attractive postregulatory employment opportunities in compliance. Regulators are skilled at advancing new conceptual frameworks like functional regulation that provide an approach for expanding regulatory authority from institutions with an economic regulatory rationale—such as exposure to the Federal safety net—to institutions that perform similar functions but do not have access to the safety net; where the economic rationale for regulation is weak.

The Cost of Regulation

What is the cost of all of this? It is substantial. There is, of course, the direct cost of the regulators and the much larger cost to regulated institutions of compliance with the traditional safety and soundness regulation and with social regulation. Still, on a global basis the largest costs are the least visible—the economic distortions produced by regulation benefiting constituencies, the costs of regulatory failures (e.g., the S&L debacle) and the implicit opportunity cost to consumers of financial services and to the economy when regulation impedes institutions in the marketplace from producing the best products at lowest cost (e.g., Glass-Steagall restrictions). More generally, the pervasiveness of financial regulation and the well known bureaucratic bias against risk-taking have impeded the development of financial services. Thus, one can argue the case that financial regulation has veered far from its economic origins and is quite costly and potentially risky for the economy.

Disciplinary Mechanisms for Regulation

So the question I would raise, is the agency problem—who regulates regulators? What is the governance process? What mechanisms are there to keep

regulation on a sound economic course; to keep it from veering off and adversely affecting economic efficiency?

Here, unfortunately there is very little. There are the courts, but they are limited to interpreting the laws that Congress passes. So one must look to Congress as a potential disciplinary mechanism. But, of course, Congress is a chief source of the problem because congressional constituencies see regulation as a vehicle for expression of their political objectives. Congressional intervention can be depended upon only when regulatory damage is quite severe. Examples include Congress' tardiness in addressing the S&L crisis and its inability to enact Glass-Steagall reform.

If Congress cannot be depended upon, what about regulatory competition—not competition in laxity, but regulatory regimes that promote efficiency should produce institutions that perform well, gain market share, and ultimately force the shrinkage or improvement of the inefficient regulator.

Unfortunately, regulators have discovered a not too novel defense for competition—collusion. There has been an active trend both within countries domestically and internationally toward regulatory coordination and regulatory harmony. U.S. regulators coordinate banking and securities regulation; international regulatory coordinators include the Basle Supervisors Committee, the BIS, and IOSCO, which seek to produce a level regulatory playing field. In other settings these might be called collusive cartels. While they have done much good, they have, I fear, proved an effective defense against regulatory mavericks and regulatory innovation. It is quite difficult for any regulator to break from the pack to innovate. The trend is to move toward more uniform regulation with U.S. regulators setting the pace. Compared with the invisible hand of the market economy, this does not produce much competitive discipline for regulation.

Thus, there is very little one can point to as reliable mechanisms to govern regulation and channel regulatory efforts toward economic efficiency. Moreover, since regulators have substantial discretion, there is some risk of abuse. Regulatory authority misused is an unpleasant prospect in a democratic society.

Solutions and Suggestions

As far as solutions, I have none. I would flag the governance of financial regulation as an important public policy issue and offer a couple of tentative suggestions. First, I think self regulation works better than government regulation where feasible. There are examples such as the development of Eurobond market with endogenous self regulation motivated by economic self interests where market participants—issuers, investors, and securities firms came together, established rules and procedures, and produced a quite efficient wholesale market.

Of course, this market has slowly succumbed to traditional governmental regulation. The derivatives market, despite all its publicized problems, has worked reasonably well with market participants leading the way with ISDA and the Group of Thirty playing useful roles. This is again a wholesale market

and again, traditional governmental regulation is moving in. Where possible private regulation works better from a governance perspective because once regulation is part of government the governance process is more likely to be driven essentially by political motivation not economic efficiency. Unfortunately the creation of government regulation seems to be almost irreversible. One cannot be optimistic that privatization will sweep through the regulation industry. Still for new markets, especially wholesale markets, it is useful to encourage self regulation and resist as long as possible the establishment of government regulation.

My second suggestion goes against many observers' analysis. In my view regulation works best as part of a multipurpose organization where regulation serves as a means to a more fundamental end objective. From a governance perspective, there is a case that banking regulation works better as part of the central bank as opposed to a separate specialized banking regulatory institution. The central bank's objectives include the stability of the financial system and the management of business cycle, as well as the ultimate goal of price stability. If the central bank does a poor job in financial regulation, the central bank will have to deal with the adverse consequences for its fundamental objectives. It will have to pay the price in terms of dealing with instability, bailing out weak institutions, and dealing with damage to the business cycle and the economy. This constitutes a mechanism that tends to keep regulation on track. Other advantages include the independence of central banks, which provides some protection from political constituencies. Moreover, it is useful to have the ultimate decision on regulation made not by regulators but by someone like Fed's Board of Governors who possesses a broader professional background and perspective. With input from professional staff regulators, this "civilian review board" is more likely to produce sensible regulation; less likely to depart from economic objectives. A similar but less convincing case can be made for placing banking regulation in the Treasury or Finance Ministry. While the Treasury must pay the fiscal bills, it lacks the political independence and professionalism of many central banks.

I do think having regulation as part of a larger purpose organization is superior to having separate, specialized financial regulatory institutions, which tend to be weaker politically and more vulnerable to political constituencies.

Conclusions

Let me conclude with a few summary observations. Surveying financial regulation, one finds an impressive global industry that pervades the financial services business and possesses substantial power and authority. Over the past several decades the United States has experienced several serious regulatory failures that have produced large explicit and implicit costs. Examples include the S&L debacle and the failure to reform Glass-Steagall restrictions.

In my view the most challenging task for financial economists and practitioners is not to determine optimal regulation, the economically correct an-

swer. That is the easy task. The more challenging task is the agency problem—to design mechanisms which encourage, if not insure, that regulation stays on track, pursues economic efficiency, rather than veering off and producing large costs for the industry and the economy. The currently available mechanisms to control the massive machinery of financial regulation seem weak and unreliable. When it comes to controlling financial regulation, one fears that much like Blanche Dubois in *A Streetcar Named Desire*, we are very much “dependent on the kindness of strangers.”

Regulatory Issues in a Technologically Advanced World **Steven M. H. Wallman**

Technological innovation and enhanced competition among traditional broker-dealers and new entrants, such as banks and commercial companies, have led to the development of new products and services to satisfy investor needs. As a result, we continue to move from a nation of savers to one of investors, with mutual fund holdings now exceeding commercial bank deposits, and one in three households directly or indirectly owning stocks. Our markets have never been as robust and competitive as they are now.

Nevertheless, there is cause for concern. Stated bluntly, the ability of investors to receive the benefits expected from technology may be impeded by “regulatory underbrush.” Rules of the Securities and Exchange Commission (the “Commission”) and self-regulatory organizations (SROs) that were well-intentioned and well-designed for another day may now in fact slow progress, or even be anticompetitive. While the partnership between the Commission and SROs has been successful, and remains a critical factor in overseeing and inspiring investor confidence in our markets, fresh looks at governing rules are periodically needed. In this context, detailed research and analysis by the academic community would be extraordinarily valuable.

For example, for over two hundred years, rules and policies of the various exchanges and Nasdaq—rules approved by the Commission—generally have required that stocks in this country trade in one-eighth dollar increments. Some argue there is little to support this requirement other than a desire to keep spreads artificially wide. It has been argued that by precluding finer quote competition among market participants, one-eighth dollar quoting costs investors billions of dollars annually in excess spread costs. Some have also noted that such fractional trading encourages practices such as payment for order flow, which is merely symptomatic of spreads for many stocks being too wide.

Others argue that moving to finer increments, such as would be expected with a move to decimals, would reduce liquidity and depth. Without a large minimum spread, fewer market professionals would be willing to make a market in a stock, and fewer shares would be available for purchase or sale at a given price. Among other concerns is that under a decimal system, later submitted orders might be executed before earlier ones if they are priced only a few cents better. Are these results likely? Are they in fact problems? Are

there other benefits such as less overall price “stickiness,” or other detriments such as reduced depth, that need to be considered? Other markets have converted to finer increments (most recently the Toronto Stock Exchange, with decimal quotes and a nickel tick). Information is available. Both empirical and theoretical research in these areas, including into the conversion costs to the industry versus the alleged benefits to investors of reduced spreads, would help to clarify the arguments on both sides and would help resolve what appears to be a multi-billion dollar policy debate.

Another area that could be examined is how we regulate access to the markets. Current rules provide market makers and specialists with greater privileges—such as more lenient margin treatment or fewer short sale restrictions—than other traders.¹ In consideration, market makers and specialists are charged with ensuring an orderly and liquid market in their designated stocks and they are required to make two-sided markets at specific minimum sizes.² Ordinary investors, on the other hand, generally are precluded from making two-sided markets without being registered as market makers.

Given the magnitude of institutional orders today, many question whether the primary source of liquidity comes from market makers and specialists. Increasingly accepted is the view that liquidity generally comes from the interplay of investor orders. Who, then, is being helped or hurt by limiting the ability of investors to post two-sided quotes? Similarly, and given the positive correlation between quote size, risk, and spread width,³ are we helping or hurting investors by requiring market makers or specialists to quote in anything other than de minimis sizes?⁴

As a similar matter, and as an example of where research can be productive and have clear policy implications, the Commission recently requested the NASD to reconsider its excess spread rule.⁵ The rule requires a market maker to maintain a quote no greater than 125 percent of the average dealer spread of the three market makers having the narrowest spread in a security. The purpose was to prevent market makers from maintaining spreads that were excessively wide. Unfortunately, after some investigation, it appeared that the rule apparently had the unintended consequence of inhibiting the willingness of firms to narrow the spread out of fear that they would not later be able to increase the spread when it might be necessary or desirable. The NASD recently amended the rule to lessen any anticompetitive effects by changing

¹ For example, qualified market makers receive exemptions from provisions of the NASD’s short sale restrictions. See NASD Manual, Article III, Section 48.

² For example, NYSE Rule 104.10 requires a specialist to maintain, as far as reasonably practicable, a fair and orderly market, as measured by price continuity and depth, and minimization of the effects of any temporary disparity between supply and demand. See also, NASD Manual, Schedule D, ¶1819(a) (requiring market makers to maintain two-sided quotes for each security in which they are registered).

³ Exchange Act Rel. No. 38156 n.73 (January 10, 1997).

⁴ Recently, the Commission approved, on a pilot basis, a reduction in the minimum quotation size requirements of 50 Nasdaq stocks from 1,000 to 100 shares. *Id.*

⁵ This rule was previously approved by the Commission in 1993. NASD Manual, Schedule D, ¶1819(d).

the methodology by which excess spreads are calculated, and limiting the scope of the rule.⁶

These are some examples of regulation that may well have evolved into rules that have adverse consequences. Moreover, they are examples where not only finance, but economics, game theory, information technology and other disciplines need to be brought to bear on an integrated basis to come to a policy determination or to provide a deeper examination and understanding of behavior. There are other examples, such as determining how best to regulate market participants whose actions do not clearly comport with traditional notions of exchange or broker-dealer activities,⁷ and how best to address the collapse of geographic borders occasioned by the Internet and other technology.

Our financial markets are also increasingly experiencing dramatic change from new economic thinking, such as portfolio theory, option and capital asset pricing, risk management, and other new concepts. These changes, together with those stemming from technology, will bring far more significant—and I believe qualitatively, not just quantitatively, different—changes to the competitiveness and the structure of the financial services sector. They will also affect, more than we have seen to date, the ability of financial regulators to implement appropriate public policy decisions. We need to explore, therefore, whether the current financial services regulatory structure is optimally designed, or what alternative regulatory structures exist.

Specifically, our financial services industry is currently regulated on an “entity” basis. This means that banks are regulated by banking regulators (four on the federal level and separate regulators in most states), securities firms are regulated by the Commission on the federal level and state regulators as well, commodities firms are regulated by the Commodity Futures Trading Commission (CFTC) and insurance companies are regulated by state insurance regulators. This regulatory structure dates back to a simpler time when, for example, commercial banks just made loans and provided savings and checking accounts, investment banks sold securities and underwrote stock offerings, commodities firms sold cattle and grain futures, and insurance companies wrote whole life insurance policies. Entity regulation worked well then.

In the 1970s, financial services providers began moving into each other’s areas. These entities no longer simply offered single types of services; rather, they were offering an array of different financial products. Securities firms began offering products like money market accounts, which look and function much like bank savings accounts. Banks entered the realm of underwriting

⁶ Exchange Act Release No. 38180 (January 16, 1997) (changing, on a pilot basis, the calculation to disqualify a market maker if its average spread in a security in any calendar month exceeds 150 percent of the average of all dealer spreads in the issue for the month); Exchange Act Rel. No. 38354 (February 28, 1997) (excluding market maker quotations in Nasdaq Small Cap Stocks from the scope of the rule).

⁷ See generally, Market 2000 at 26-27; Exchange Act Rel. No. 35124 (December 20, 1994) (establishing record keeping and reporting requirements for broker-dealers operating automated trading systems).

securities offerings. Insurance companies began selling annuitized products that look and act like securities investments and guaranteed investment products that seemed to many investors like bank certificates of deposit. To accommodate this changing business structure, some advocated a new regulatory structure: “functional” regulation, based on the idea that the same product should be regulated the same way regardless of who sells it. In other words, banking regulators would regulate banking-type products whether offered by banks or other entities. Similarly, the Commission would regulate the securities activities of banks or insurance companies, as well as of securities firms.

While this debate has been occurring in academic arenas and in the Congress for two decades, the financial services sector, in large part due to advances in technology, has continued to change—and moved beyond the premises on which both entity and functional regulation are based. While functional regulation assumes that financial products are distinct and well-defined, new products are being developed or are in the market today that have characteristics of several types of products (insurance or banking as well as securities characteristics, such as certain types of derivatives or variable annuities). The lines between products and entities continue to blur as technology makes it easier for financial services providers to cater to the specific needs of their customers and tailor products and services accordingly. It is this blending of products, erasing distinctions between traditionally well-defined financial services, that poses a challenge to a regulatory structure that, at best, is based on definitions, whether of entities or products, that are increasingly difficult to apply. As this blurring continues, a functional regulation approach, like traditional entity regulation, becomes tenuous. What is the benefit of premising an entire regulatory structure on product definitions that can no longer be easily categorized and are hard to distinguish?

This development of products and services will, of course, continue—regardless of whether there is financial services reform—as dictated by the demands of consumers of financial services. If regulation is going to continue to be optimally designed, therefore, it must be reconceptualized.

Questions such as: “Why is it that we want or need financial services regulation in our economy?” must be asked. As an example of an answer, there are four obvious goals of financial regulation. First, to protect unsophisticated market participants (retail and institutional). Second, to promote the efficiency and integrity of the financial markets. Third, to manage the risk of insolvency when taxpayer or customer funds, either explicitly or implicitly, are at risk. Finally, to manage potential systemic risks. A regulatory structure flexible enough to encompass changes in the financial services industry would be built on these regulatory goals. If different agencies were each responsible for each identified goal, the structure of a “goal-oriented” regulatory structure might look as follows.

The Commission could regulate regarding the protection of unsophisticated market participants. This would involve setting sales practice and disclosure requirements for *any* financial service or product regardless of what type of

entity was selling the product. The result would be a consistent approach to the protections provided to financial services consumers, whether they were opening a checking or savings account, investing in a stock or a mutual fund, or purchasing a variable annuity.

In turn the Federal Reserve, for example, could have exclusive authority over matters of systemic risk posed by the largest financial services firms, again regardless of whether they are currently defined as banks, securities firms, or insurance companies. Concentrating the expertise for such regulation in one agency would be more efficient and provide a higher level of expertise, and thus protection, for the system as a whole, than the current regulatory structure.

The CFTC might be responsible for insuring the efficiency and integrity of our domestic markets. And finally, one or more of the current banking agencies could have jurisdiction over individual insolvency and safety and soundness issues as they might impact federal insurance funds and consumer funds or assets held at a given institution.

This approach to regulation would require a reshuffling of resources within existing government agencies to gather together the necessary expertise for each regulatory goal. It would also require a recognition by each agency, as is the case today, that the requirements necessary to achieve the applicable regulatory goal may differ by type of product or service. For example, the disclosure necessary to sell an insured savings account differs from that necessary for a mutual fund which also differs from that applicable to a risky derivative security.

Obviously, research on issues raised by possible changes in regulatory structure are necessary. Organization theory and political science skills would be useful in determining whether there are other viable alternatives, or whether it would be better to modify the existing structure to make it more effective. Additionally, it would be helpful to have research into the likely effects on financial services providers as well as the potentially increased competition arising from such a new regulatory structure as that described above. Issues in this debate have included the level of systemic risk—what it is and where does it really come from; whether fee income from securities underwriting activities is more or less volatile and more or less risky compared to earned income from traditional banking operations; the cost of capital for suppliers of capital if such suppliers are allowed to integrate services; and the costs of integrated as opposed to discrete services to consumers. Moreover, transnational research would be appropriate. Other countries do not have similar separations of their financial services, or of their regulatory structure. Does that structure provide benefits or disadvantages for consumers of financial services, market participants, and economies?

Research in the areas of finance and related disciplines has and will continue to have profound effects on the business and financial world. For example, portfolio theory has helped the explosion of growth in mutual funds, risk management has benefitted from theories on option pricing, and so forth. The policy and regulatory world, however, has not been as blessed with robust

studies and research as often as should be the case. Research using stock data and centered on “event study” analysis has been too removed from real world understanding of relevance or persistence of effect to have much influence. In addition, too often, the failure to work collaboratively with other disciplines has led to errors, or misunderstanding of the applicable governing regulations or actual behavior, thereby undercutting the utility of the study or destroying the premises on which it is based. Moreover, the lack of interdisciplinary activity has reduced the benefits that can come from a fuller understanding of relevant game theory or other matters. In sum, research, especially unbiased research, provides the foundation for major policy changes that can make the world better. The best research can contribute mightily if it is thorough and thoughtful; and when it is, the complementary obligation is that it needs to be respected and encouraged.