Keynote Address

Federalism in Securities Regulation: An Economist's Perspective

By JOSEPH E. STIGLITZ*

THE SECURITIES MARKETS, and the financial markets more generally, are the brains of the economy. They are responsible for the allocation of scarce capital. How, and how well, they do that job has enormous implications for the economy's performance. Markets also affect the incentives of corporations and therefore their conduct. The success of capital markets, securities markets, and the economy as a whole, requires regulation. Markets alone do not lead to economic efficiency. Regulation is necessary. In the 1990s, the balance between markets and government was lost, with enormous consequences for the economy. This is one of the major themes of my 2003 book, *The Roaring Nineties.*[1] Well designed regulation is critical to achieving the appropriate balance between markets and government.

My talk today concerns the levels at which regulation ought to be. I will argue that strong regulation is needed at both the federal and the state level; in fact, a multiplicity of levels of regulation is required. The way I will approach this is in three parts.

First, I will discuss some general aspects of the theory of markets, including the lessons of the nineties. More recently, I have worked under New York State Attorney General Eliot Spitzer to attack securities regulation abuses. Spitzer has achieved considerable success. I will explain some of the legal foundations of his success, and why I think

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1. JOSEPH E. STIGLITZ, THE ROARING NINETIES: A NEW HISTORY OF THE WORLD'S MOST PROSPEROUS DECADE (W.W. Norton & Company 2003).

his work is so important. These experiences illustrate why relying on the Securities and Exchange Commission ("SEC") is not enough.

The second part of my talk will, accordingly, discuss the general theory of federalism. I will examine theoretical work that I did some thirty years ago and the insights that it provides.

Finally, I will draw parallels between issues of federalism and globalization. Much of the debate at the global level parallels the debate within the United States. What should regulation be on the global level? I think examining regulation at a slightly different level helps clarify some of our own thinking about the issue of federalism.

I. Regulation and the General Theory of Markets

Let me begin with the general theory of markets. There is probably no idea more important or more influential than Adam Smith's notion of the invisible hand—that individuals, in the pursuit of their own self-interest, lead to economic efficiency.[2] It would be a remarkable theorem if it were true: a remarkable theorem, because it would mean that people in the business community do not have to think about morality, all they have to do is think about what is in their own best interest. By being better at being selfish, they are being better for society. In this framework, the only imperfection that someone might have is that they are not selfish enough. I think that, in the nineties, American CEOs really took that lesson to heart and worked extremely hard at greed. Neither corporate greed nor CEO greed, though, led to economic efficiency.

In that sense—was Adam Smith wrong? We have known for decades that Adam Smith was wrong. My Nobel Prize-winning research focused on the question of how markets would work if we accepted all of the assumptions that go into the standard neoclassical model except one—perfect information. I do not know a single person who believes there is perfect information. In fact, if there were perfect information in financial markets, those markets, by and large, would not exist. One of the key rationales for these markets is that the information that the markets provide improves society's resource allocation.

In a nutshell, my research showed that the reason Smith's invisible hand often appears invisible, is that it is not there. There is no invisible hand that leads to economic efficiency. The technical way economists phrase this phenomenon is that unfettered markets alone

2. Adam Smith, An Inquiry into the Nature and Causes of the Wealth of Nations (R.H. Campbell et al., eds., Oxford Univ. Press 1976) (1776).

do not lead to Pareto efficiency.[3] Even taking into account the cost of information, and the cost of acquiring information, among other costs, government interventions can make everyone in society better off. Adam Smith was simply wrong.

Let me make clear that Adam Smith, the scholar, actually was much better than the Adam Smith portrayed by modern economists. Smith was much more aware of his theory's limitations than latter day followers of "his" theory, who systematically tried to forget the qualifications he applied to it. In fact, Smith wrote a book, *The Theory of Moral Sentiments,* in which he argued that in fact morality was relevant to economic behavior.[4]

Underlying our belief in the market economy—and I do think a market economy has enormous virtues—is the price system. Prices provide signals. As prices go up, producers should produce more, as prices go down, producers should produce less; prices are an efficient signaling device so people know what and how much they ought to produce. But prices can fulfill that role in our society, and in our economy, only if the information that is imbedded in those prices is good information and the price reflects reality. The question is—do markets provide the incentives for information to be produced, analyzed, and transmitted in ways that enable prices to reflect reality? The answer is that they do not, or at least not as well as one might have hoped, and at least not without appropriate government regulation.

I observed earlier that the nineties provides an illuminating illustration, not just in the United States but all over the world, of the failures of financial market regulation. The important thing to observe about this period was that it was not just a few people, a few rotten apples, that contributed to the failure of the financial markets. There will be a few rotten apples in every society. But, with every ac-

3. If an economic system is Pareto efficient, then it is the case that no individual can be made better off without another being made worse off. *See* GEORGE CASPAR HOMANS & CHARLES P. CURTIS, JR., AN INTRODUCTION TO PARETO, HIS SOCIOLOGY (H. Fertig, reprint, 1970) (1934). One of the major achievements of economic science in the mid-twentieth century was to find the assumptions which were required to prove that Adam Smith's "invisible hand conjecture" was true. *See* KENNETH J. ARROW & FRANK H. HAHN, GENERAL COMPETITIVE ANALYSIS (Holden Day, 1971); GERARD DEBREU, THEORY OF VALUE: AN AXIOMATIC ANALYSIS OF ECONOMIC EQUILIBRIUM (Wiley 1959). This early work, however, assumed that information was perfect. Bruce Greenwald and I proved that whenever information is not perfect, markets are not pareto efficient, even taking into account the costs of acquiring information and creating markets. *See* Bruce C. Greenwald & Joseph E. Stiglitz, *Externalities in Economies with Imperfect Information and Incomplete Markets,* 101 Q. J. ECON. 229 (1986).

4. ADAM SMITH, THE THEORY OF MORAL SENTIMENTS (D.D. Raphael & A.L. Macfie, eds., Clarendon Press 1976).

counting firm, almost every major investment bank, and large numbers of CEOs engaging in behavior that is clearly anti-efficient, one has to conclude that there is something systemic and systematically wrong. This leads one to inquire—what was wrong? One of the principle purposes of my book, *The Roaring Nineties,* was to answer that question.[5]

The market was providing incentives, but they were the wrong incentives. In particular, the market was characterized by conflicts of interest that provided incentives to distort information. Many of these conflicts of interest had long been apparent, and many of them we knew something about. There were efforts in the early nineties to circumscribe these conflicts of interest, but the forces that were benefiting from them tried to stop the reforms—and were largely successful.

The worst example of the problem of wrong incentives is stock options. During the nineties, many corporations believed that stock options provided incentives for employees to behave in the best interest of their firm so as to increase the value of their firm. In the seventies and eighties, I wrote a great deal about designing optimal incentive schemes for managers.[6] The theory was based on the theory of imperfect information, an area that had been the basis of my research for years.

The fact is that stock options are really bad incentive systems. Why are they bad? For the most part, a good incentive system tries to reduce the white noise in the incentive pay. A person wants to be rewarded for doing the right thing. However, stocks go up and down based not only on a CEO doing the right thing, but also on the randomness of investor sentiment. Stock options reward (and punish) CEOs for changes in stock prices that are not the result of their own efforts.

That is why a good incentive structure is not based on stock price performance alone but on, for instance, *relative* performance. If a company's stock does better than their competitor's stock in a similar situation, this is an indication that the company's management is doing something right. If airplane stocks go down because the price of oil goes up, that is not the CEO's fault. A company cannot control wars in the Middle East—that is beyond the company's control. But a company's ability to respond to shocks in the economy can show its strengths and weaknesses.

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5. STIGLITZ, *supra* note 1.

6. Barry J. Nalebuff & Joseph E. Stiglitz, *Prizes and Incentives: Toward a General Theory of Compensation and Competition,* 14 BELL J. ECON. 21 (1983).

When I met with managers and human resources people who determine firms' compensation schemes in the seventies and eighties, I would ask, 'Are you stupid or are you trying to deceive your shareholders by using these stock option schemes?' Most of them would say, 'Well, until you explained it, we thought we had designed efficient compensation schemes. We now realize we were stupid, or at least not as smart as we thought. As stupid or foolish as we may be, our shareholders are even more so; they think that stock options are necessary to motivate our executives, and under the guise of stock options, we can give them far higher compensation than we could in any other way. So, as interesting as your analysis may be, we will not change what we do. Call it what you will—deception—we will continue on as we have.'

The stock option was a wonderful tool because it was based on deception. The CEOs knew they were getting something of value. They knew that they were effectively diluting the stock owned by the rest of the shareholders. If a company gives twenty percent of itself in the form of stock options to the CEOs, for example, the shareholders have twenty percent less of the company. With stock options, money is indirectly being taken from the shareholders. The executives understood that, but they also knew it was something that the shareholders did not understand (especially as stock options did not have to be acknowledged as an expense). It was the ideal form of theft, because the persons from whom they were stealing money did not know it until it was too late!

Arthur Levitt, the chairman of the SEC from 1993 to 2001, believed the role of government was, in some sense, to protect the small investor. Levitt recognized that stock option accounting was a major problem. What was designed to be an independent regulatory body, the Financial Accounting Standards Board ("FASB"), recognized the problem and proposed the disclosure of these stock options in a way that shareholders might be able to appraise the effects on share prices. Levitt did not try to stop the stock options. That would have been a strong intervention. But what he said, in effect, was, 'at least you should report to your shareholders what you are doing in a way that they can understand—not with four hundred footnotes in a way that nobody can read, let alone understand and calculate what it might mean. Just report what you are doing in a form that shareholders can see that stock options represented an "expense."'

This notion of reporting sparked an enormous amount of conflict within the Clinton Administration when I was on the Council of

Economic Advisors ("the Council"). The Council took up this subject very forcefully. No one in the White House could understand why the Council pushed this as an important issue. After all, the only subject that is generally viewed as more boring than economics is accounting. We did not think accounting was boring, though. We got involved because we knew that accounting provides the information that is necessary for an effective marketplace. We thought the FASB and Arthur Levitt were right.

But many people benefited from bad information. Wall Street and Silicon Valley benefited enormously from it. The Secretary of the Treasury, Lloyd Bentsen, used all his force on the side of the financial industry and corporations to stop this reform.[7] Their argument was that disclosing stock options in a way that investors understood would lead to a diminution in the value of stocks. Ironically, the Council of Economic Advisers thought that this was an argument for its side. We thought they were saying, 'Yes. This is important information. People are being deceived, and if we reported this it would lead to lower stock prices.' We thought there could not have been a more convincing argument for our side. The Treasury thought it was an argument for its side: there was a party and no one wanted to stop the party. And that is exactly what they thought we were trying to do.

However, our view was that every party like this—every party based on deception—eventually comes to an end. Every pyramid scheme comes to an end. It was not a question of being able to deceive people forever, but how long the deception would last. The longer it went on, the higher the bubble climbed, and more damage would eventually be done when it crashed. And we were right. Eventually this all came to light. The bubble burst and the economy sunk into a recession.

The slowdown did not have to be quite so deep or prolonged, but the mismanagement of the Bush Administration almost surely caused it to be deeper than it otherwise would have been. However, no matter how well the economy had been managed, there would have been significant costs. As it was, the loss to the United States economy was enormous. Between 2001 and 2004, the economy underperformed by approximately 1.7 trillion dollars. This is the difference between what the economy could (conservatively) have produced and what it actually did produce. That is a lot to lose. There are lots of things you could do with 1.7 trillion dollars, such as improve health care or edu-

7. STIGLITZ, *supra* note 1, at 117.

cation. You could almost buy another war with Iraq with that money. No matter what your values are, wasting money is wasting money.

It was not just that distorted information—the failure to properly account for the dilution of share value as a result of the issuance of stock options—led to unrealistic stock prices. Incentives were distorted—with stock options, the incentive was to get the price of the stock up. Economists believe that people respond to incentives. Give people the wrong incentive and you get the wrong behavior. It is easier to give distorted information—to increase stock prices—than it is to actually do something that may be socially useful. CEOs of company after company discovered that it is easier to provide distorted information than to do anything more productive and efficient for society or for your company. The practice of issuing stock options created enormous incentives for distorted information.

In my book, *The Roaring Nineties*, I discuss a number of examples of how these incentives for distorted information played out.[8] Since this book was published, I have become more involved in the New York state scandals involving initial public offerings ("IPOs"), investment banks, and analysts.[9] These cases illustrate the perversity of the financial abuses and the form in which "theft" occurs. Perhaps theft is strong language, but in my mind it is clearly theft.[10]

There has long been an awareness of problems with IPOs, analysts, and conflicts of interest—that something peculiar was going on. But it was not until the nineties that these problems came so much to the forefront. Some people express this as 'everybody has their price and in the nineties almost everybody met that price.'

IPOs represent a special problem for financial markets. When a company makes an IPO, it typically will not have a track record and often will never have shown a profit. This is why investment banks are supposed to play an important role. Analysts at investment banks are supposed to look at the company's prospects, analyze the data, and predict what is going to happen, thereby providing the market with the information necessary to judge the future profitability of the enterprise. A company's initial stock price is the outcome of analysts' research. If the analysts were properly performing this function, they

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8. Stiglitz, *supra* note 1, at 126–127, 142–144.

9. *See* Ben White, *Research Settlement Completed; Two More Banks Agree to Pay $100 Million*, Wash. Post, Aug. 27, 2004, at E1; Joshua Chaffin, *'Smoking Gun' E-mails Will Cost Firm Dear in the Courts*, Financial Times, Apr. 29, 2003, at 32; Susanne Craig and Charles Gasparino, *Morgan Stanley Puts Settlement on 'Spin' Cycle*, Wall St. J., March 31, 2003, at C10.

10. Stiglitz, *supra* note 1, at 122.

would say, 'We think the value of the stock, when you issue it, is going to be $100.' Then, when the stock is offered, the market would reflect that judgment. A year or two later, it may become apparent that the price was over or underestimated, but at the time of the offering the price is supposed to represent the best estimate of the value of this enterprise.

Economists had long noted that investment banks systemically slightly under-priced stocks in IPOs. In the first days and months following an IPO, there would be a greater than normal rate of return. It is an economic puzzle. In the nineties, what had been a puzzle turned out to be a problem. In the nineties, the under-pricing became enormous. The under-pricing was at a level of twenty-five percent to fifty percent. The investment banks, amazingly in my mind, tried to make a virtue out of a vice. They said, 'Look at them. The stocks we are selling you are so great that in the first day they increased by fifty percent.' What the banks did not say is, 'Our analysts are so bad that we misjudged the price by fifty percent, by one hundred percent.'

The analysts were supposed to provide an accurate price. What does it mean if a stock that is worth $100 is being sold for $50? That means that existing shareholders are transferring to new shareholders stock worth $100 dollars but getting only half that amount in compensation. Money is being stolen from them. And, in the nineties, this was going on in almost every company.

It was, and I hate to use this word, almost a conspiracy among the investment banks and the CEOs of the companies. By selling stock for $50, the CEOs or executives gave the investment bank an additional $50 of money, which they could do with as they pleased, subject to regulations. In effect, even with the regulations, the investment banks found ways so they could pocket some of the additional money for themselves, and ways that the CEOs of the company issuing the IPO could pocket some for themselves.

There were, of course, regulations that said the difference between the issued price and market price at the IPO could not be given to the CEO directly, and that the bank could not pocket the difference (or at least much of the difference) directly. However, indirect ways to turn the money over to the CEOs—and indirect ways in which the bank could itself recapture some of the money—were widely used. For example, if the investment bank issued shares for ten different IPOs, it could give shares in these IPOs to some of its clients, particularly CEOs of other companies that the investment bank recently took public. The CEOs would be so pleased with their overall banking relationship that they could look the other way at what might otherwise appear to be huge banking fees associated with IPOs and other banking services. Since all of the banks and most of the corporations were doing exactly the same thing, it all seemed innocent: just the way ordinary business is conducted. It was the evolving face of capitalism, American style.

The result was slightly different from what would have emerged had the investment banks and CEOs actually conspired. The investment bankers effectively said to the CEOs: 'I have just stolen $50 million dollars from your shareholders. Unfortunately, I cannot give it to you because the nasty guys at the SEC do not allow that kind of blatant theft. But they do allow me to give you $10 million from each of a number of other companies. So, if you come to me and allow me to under-price your shares, I will make this a little sweeter for everyone involved in the deal. Give me this extra money to play with, and I will spread it around so everyone is happy. I will give you some of the "allocations" from similar arrangements I make with other firms. Of course, we here at the investment bank are going to keep some of this in profit for ourselves—without us, you could never do this on your own—and we are going to overcharge the company for our investment fees and charge additional fees for all kinds of things such as issuing new stock and bonds.'

Issuing bonds should be a relatively low profit-making enterprise, but investment banks were making billions of dollars a year. Competitive theory says that the return on bonds should be driven down to the normal rate of return. But banks were getting an excessively high rate of return in this period. My students, who knew nothing about anything, were making millions of dollars. That was, to me, convincing evidence that our market was not working as it should.

Greed knows no end. As investment bank profits and CEO compensation rose, the investment banks discovered still more ways of aggrandizing themselves. They, in effect, said: 'Well, you know, there is more money lying around here for us to cheat people out of. Let us cheat the ordinary investor by providing him with distorted information. These guys are really, really stupid. We can provide deceptive information and they will not know it.' And, in actuality, some e-mails within investment banks had disparaging remarks similar in spirit.[11] So, rather than provide accurate information to shareholders, the ana-

11. *See* Gretchen Morgenson and Patrick McGeehan, *Wall Street Star May Face Suit by Regulators*, N.Y. TIMES, Jan. 4, 2003, at A1. *See also* STIGLITZ, *supra* note 1, at 142–143.

lyst provided distorted information about these companies. Analysts got very good at presenting fancy spreadsheets. That is one of the things we did teach them in business school. But the information content was questionable. We gave them the tools to lie, but perhaps not the ethics to refrain from doing so.

Now the analyst, as the name suggests, was hired to analyze. That is what everyone thought. But if you are an analyst, what should your pay be based on? The quality of your analysis as it now exists. What does that mean? That if an analyst forecasts that a stock will go up and the analyst is accurate, he gets a bonus; but if the analyst forecasts that the stock goes down and it does not go down, he gets penalized. So the accuracy of an analyst's forecast is his measure of success.

In general, the investment banks did not disclose how analysts were compensated, but in the process of prosecuting the IPO scandals, information about analysts' compensation schemes was uncovered. The problem was that compensation depended little, if at all, on the analyst's ability. There was a clear understanding: if you issue your IPO through us, our analyst will treat your company well; he will give optimistic reports. There was real "grade" inflation: almost all of the recommendations were buy or hold; there was almost never a sell recommendation. In effect all stocks were treated as great, really great, and really, really great.

One could say investors were really stupid to not know this was going on. The precept of "caveat emptor"[12] is long standing; why should buying stocks be different from buying anything else?

The CEOs also did not disclose to their boards that they were making off like bandits with the money from investment banks.

Investment banks knew, or at least must have suspected, that much of what they were doing was bordering on the illegal, if it was not actually illegal. Clearly, if the investment banks understood markets—and that is what they claim to be their expertise—they must have known that the money they and the CEOs were getting was not manna from heaven; what they were getting was coming out of the pockets of someone—out of the pockets of shareholders. But they knew that most shareholders would never realize what was going on.

The investment banks tried to be careful not to leave a paper trail that would allow them to be convicted. But every once in a while, they would do things like keep a record of how much money they had given a particular executive—like $2 million here, $5 million there.

12. Let the buyer beware. BLACK'S LAW DICTIONARY 236 (8th ed. 2004).

They did keep a record, and it does not take a lot to figure out there was a quid pro quo for what was going on.

There were many other parts of this "conspiracy" to enrich CEOs and investment banks at the expense of ordinary shareholders. Arthur Levitt made a big deal of what is called "fair disclosure." Firms would disclose information to some analysts, but not make that information publicly available. This meant that companies could create information asymmetries. Information asymmetries not only distort markets, but give rise to market power. Ordinary investors might have felt that they had to deal with investment banks and brokers due to the latter's informational advantage; the investors knew that their analysts had information that was not more generally available. Analysts might have felt that they had to treat the company reasonably well, lest they be excluded from access to information. The companies and the investment banks (through their analysts) had a mutually reinforcing system, a system of rewards and punishments, which preserved asymmetries of information and market power—and incentives to provide distorted information—all intended to increase incomes and profits of companies, investment banks, and analysts, all at the expense of ordinary investors.

Though it was easy to see the dangers of this system, the system was hard to change. Arthur Levitt tried, but the interests that benefited from its continuation overwhelmed those who wanted to create better functioning and fairer capital markets—at least until the scandals that marked the end of the nineties made these positions untenable.

I was on a commission that the SEC appointed to look at problems of accounting in the new economy and broader issues of regulation. Ken Lay was a member of the commission, and his views, expounded with extraordinary fervor, reflected the view of the investment banks and analysts—trust the market, the information will come out. In the case of Enron, he was right. But not before enormous costs were borne, for instance, by those who had invested their pensions in Enron stock.

Accountants were the final active participant in this interdependent system which benefited CEOs, investment banks, and analysts, at the expense of shareholders. Arthur Levitt recognized this problem and noted that when accountants are hired by a company, their incentive is to please the CEO. Making the most of their money from consulting rather doing what they should be doing—reviewing the accounts of firms to make sure that they are accurate and informative—accountants have an even greater incentive to please the CEO than investment bank analysts. Because of stock options, CEOs had every incentive to provide distorted information that would result in an increase in share price; they had every incentive not to challenge the company's accounts.

Arthur Levitt proposed a drastic reform that said accounting firms should get back to accounting.[13] The accounting industry said, however, 'No, we make more money by having this strong conflict of interest, not by doing what we are supposed to do.' Although the conflict of interest was apparent, it was not until 2002, when Sarbanes-Oxley was passed, that something was done about the problem.[14]

Each of the players—CEOs, accountants, and investment banks—had strong incentives to jointly create a system to provide distorted information, to design compensation schemes, and otherwise to act in ways that took money from the ordinary investor and turn it over to the participants in this cabal. The members probably never got together to explicitly conspire. Had they done so, they perhaps would not have constructed a system as clever, pervasive, and as successful as the one that evolved. It was not a system designed to promote economic efficiency. Nor was it a system that was, in any sense, fair. If a government put in place a system that created anywhere near this level of waste, people would say, 'Look how inefficient the government is!' But when the waste is in the private sector, we simply look the other way and say, 'Oh well, that happens.' The cost to our economy and our society has been enormous.

Clearly, our securities regulatory system has failed. There have been reforms, but they, for instance, only go a little way to reducing the scope of conflicts of interest. There is much more that needs to done; but this is not the only subject of my address today. I am also concerned over who should regulate.

13. In 2000, Arthur Levitt proposed reforms that would have prevented accounting firms from providing both auditing and consulting services to the same company—the very thing that Arthur Andersen did for Enron. Accounting firms predictably reviled Levitt's proposal, and they lobbied against it. When President George W. Bush entered office in 2001, he named Harvey Pitt as the New Chairman of the SEC—Pitt had lobbied against Levitt's accounting reform. *See* Peter Beinart, *Accounting*, THE NEW REPUBLIC, Feb. 11, 2002, at 6; Saul Hansell, *S.E.C. Chief Defends Accounting Board*, N.Y TIMES, Oct. 9, 1997, at D9; Melody Petersen, *Greenspan Endorses Accounting Board Decision*, N.Y. TIMES, June 15, 1998, at D2.

14. The Sarbanes-Oxley Act of 2002, Pub. L. No. 107-204, 116 Stat. 745 (2002).

II. The Principles of Federalism

I will now turn to the second part of my talk, which has to do with federalism and the levels at which regulation occurs.

I hope that the first part of my talk convinces you, at least, that there is a potential scope for regulation. Regulations are needed to make markets work. If the regulations are designed right, they actually lead to the better functioning of markets.

But the question is—where should regulation occur? There is a model that has been prevalent in economic literature, and that has had some influence elsewhere, that argues that competition among communities leads to economic efficiency. This model is called the Tiebout Model.[15] Competition among communities is important, but the conclusion that such competition necessarily leads to efficiency is based on the same naïve analysis (and unrealistic assumptions) that underlies the contention that unfettered markets lead to economic efficiency. Competition among communities would lead to economic efficiency if Adam Smith's assumptions actually existed—no externalities, no collusion, perfect information, and perfect markets. No economy I know anywhere has any semblance of those characteristics.

The major advance of economic science over the last two hundred years has been to understand the limits of Adam Smith's conjecture. The same thing is also true for the Tiebout Model. I began working on the Tiebout Model over thirty years ago. The basic results are those that I just described. The neo-classical model is an extremely non-robust model. Make slight changes in the underlying assumptions and all the results fall apart. When you are working with economic theory, you want to look for robust models, in which slight and plausible variations in the assumptions do not lead to major changes in conclusions. For instance, with a robust model you can say, 'yes, we know there is not perfect information, but the model still holds true, or almost true, even if there is just a little bit of imperfect information.' That turns out not to be the case with non-robust models. Even a little bit of imperfect information completely destroys most of the results of the conventional neo-classical model.

This notion of the robustness of an economic theory is extremely important. I want to provide one more illustration in a slightly different area: that of antitrust. One idea that has attracted considerable attention among scholars of law and economics is contestability. The

15. *See* Charles Tiebout, *A Pure Theory of Local Government Expenditures*, J. POL. ECON. 416–424 (1956).

theory of contestability holds that markets are contestable, and that even in the case of a monopoly, potential competition can discipline the market just as well as actual competition. This notion of contestability enjoyed considerable popularity, and it still does, but not among economists. It is a theory that argues that we need not worry much about monopolies.

But it can be shown that if there are arbitrarily small costs of entering and exiting markets, those markets are never contestable.[16] So you have to believe that there are no sum-zero costs when you are entering a market. It is just not true. At the beginning of this debate, people said airplanes would be an example of the most contestable market. If there were ever excess profits, planes could fly in from another market, driving out profits. The global movement for airline deregulation was partially based on these beliefs. But what have we seen? Almost everywhere, the reality did not turn out to be anything like what we thought it was going to be.

The Tiebout Hypothesis that competition among communities leads to efficiency is based on a model of perfect competition. But perfect competition does not exist. There is imperfect competition among local communities. The result of this is that the equilibrium that emerges is not efficient.[17]

There needs to be some kind of coordination, and this is what federalism provides. In my previous research, I did not look at this question from the point of view of regulatory federalism. I looked at it from the point of view of fiscal federalism. We know that the local communities compete with each other based on cost, and this does not lead to efficiency. In fact, it is worse than that. Not only does cost competition not lead to efficiency, it undermines the scope for redistribution. So allowing fiscal federalism and competition to have free reign will lead to a society which is neither efficient nor fair. I will come back to that at the end of my talk.

Having said that, there are two remarks I want to make based on my experience working on litigation in New York, some of my work in government in Washington, and my theoretical analyses of market

16. *See* Joseph E. Stiglitz, Daniel McFadden & Sam Peltzman, *Technological Change, Sunk Costs, and Competition*, 1987 BROOKINGS PAPERS ON ECONOMIC ACTIVITY (SPECIAL ISSUE ON MICROECONOMICS) 883 (1987).

17. *See* Joseph E. Stiglitz, *Theory of Local Public Goods in* THE ECONOMICS OF PUBLIC SERVICES 17 (M.S. Feldstein and R.P. Inman eds., MacMillan Publishing Co. 1977); Joseph E. Stiglitz, *The Theory of Local Public Goods Twenty-Five Years After Tiebout: A Perspective, in* LOCAL PROVISION OF PUBLIC SERVICES: THE TIEBOUT MODEL AFTER TWENTY-FIVE YEARS, 17 (George R. Zodrow ed., New York: Academic Press, 1983).

regulation. The first is that I believe that security market regulation, particularly New York's Martin Act,[18] has played a very important role. It tries to strike a balance between specifying, very clearly, proscribed kinds of activities and having very strong punishments for those who engage in the proscribed activities; and less specificity in what is proscribed, but weaker punishments. Let me try to explain why these characteristics make the Martin Act particularly effective.

The problem arises from the ingenuity of the private sector, and in particular the never ending quest for innovation in ways of "stealing." There is a close parallel with what happens in our tax system, where tax lawyers are always trying to find ways of avoiding taxation—complying with the letter of the law, but not with the spirit. As tax loopholes get closed, tax lawyers work hard to find new ones. The private sector, inevitably, has more money than the government, and accordingly, often seems to have the upper hand. In the area of taxation, we have passed general laws that allow the tax authorities to look at the economic substance of a transaction, not only the legal form. A set of transactions may be declared a tax scam, even though each transaction itself might seem reasonable; together, the set of transactions is designed with nothing other in mind than to avoid paying taxation.

The Martin Act basically says: 'we are not going to write down every form of bad behavior. It is just too difficult—we know how clever you are—but we also know what theft is and we will take a very broad interpretation of what that means. On the other hand, we will not give you capital punishment. If you steal, we will give you a financial penalty—we will recover your ill-begotten gains, and provide a modest economic punishment, but not necessarily a jail penalty.'

There is an underlying question: if we do not fully specify what is proscribed, is it reasonable to assume the individual should have known? In the area of product liability, the presumption is that the manufacturer should have thought how the product should have been used by even the wackiest person in the world. So we have a very high standard. In the particular area of securities, we have had, outside the Martin Act, very low standards. The Martin Act, at least as it has been more recently used, has been very effective in going after forms of behavior that undermine the functioning of the security markets.

The second problem I wish to discuss is duplication of financial regulation. Banks are regulated by several different regulators: state

18. N.Y. Gen. Bus. Law, Art. 23-A § 352 (West 2006).

regulators, federal regulators, which include the Comptroller of the Currency and the Federal Deposit Insurance Corporation ("FDIC"), and the Federal Reserve. While I served on the Council of Economic Advisers, there was an active debate as to whether this was excessive duplication—and many on the Council were sure it was.

There is, however, a general issue of organizational theory to which I wish to call attention. It arises from human fallibility. In a set of papers I wrote with Raaj Sah, we tried to ask the question: how does the fact that all individuals make mistakes affect organizational design?[19] Consider, for instance, the problem of a regulator trying to monitor whether a bank should be shut down. There will be some cases of banks not being in good shape, but nevertheless escaping the detection of a regulator. This is less likely to happen, of course, if there are many regulators. In looking at that question, one has to balance out the cost of having more regulators. The probability of errors, such as shutting down of a good bank, or not shutting down a bad bank provides a framework of thinking about the cost and benefits of duplication. When there is a very high cost of a mistake, of allowing a bank that should be shut down to continue operating, duplication has a high benefit. This is my view about overlaying of federal and state regulation—it is probably a good thing in the field of securities regulation, just as it is probably a good thing in the field of antitrust.

III. Globalization and Federalism

The final set of remarks I want to make addresses the issue of globalization, which parallels many issues that arise in a discussion of federalism. Much debate is going on at the global level. I talk about this debate in my new books, *Fair Trade for All*[20] and *Making Globalization Work*.[21] The incentives for creating an international cartel are global. The problems of global cartels must be addressed on a global level. It is impossible to deal effectively with global cartels with piece-by-piece, country-by-country regulation. In *Making Globalization Work*, I argue for the need for a global competition authority. But in the meanwhile, it must be possible for all those who are injured to file a class action suit in a single jurisdiction, and since the United States

19. Raaj Kumar Sah & Joseph E. Stiglitz, *The Architecture of Economic Systems: Hierarchies and Polyarchies*, 76 AM. ECON. REV. 716 (1986); Raaj Kumar Sah & Joseph E. Stiglitz, *Human Fallibility and Economic Organization*, 75 AM. ECON. REVIEW 292 (1985).

20. JOSEPH E. STIGLITZ & ANDREW CHARLTON, FAIR TRADE FOR ALL: HOW TRADE CAN PROMOTE DEVELOPMENT (Oxford Univ. Press 2006).

21. JOSEPH STIGLITZ, MAKING GLOBALIZATION WORK (W.W. Norton 2006).

has some of the most advanced antitrust jurisprudence, it makes sense to have such cases adjudicated in the United States.

I was involved recently in a Supreme Court case involving a class action. A number of foreigners were suing in a United States court for an antitrust violation.[22] My argument to the Court was that it must be possible to proceed with such a case even after Americans who have been injured drop their claims; otherwise, it creates a set of perverse incentives: those who have engaged in anti-competitive practices would simply make an out-of-court settlement with Americans. Though the Supreme Court, in this particular case, rejected the argument, Justice Breyer did seem to suggest that there were other situations where the court might be more sympathetic to a similar argument.[23]

The general point I want to raise is this: we have long debated the problems of regulatory federalism, the *level* at which it is most appropriate to have regulations. Globalization means that we are now facing a parallel set of issues at the global level. But there is one key complication: since commerce is increasingly global in nature, there is a growing need for global regulation; but economic globalization has outpaced political globalization. We do not have effective democratic institutions at the global level. There is a democratic deficit evident in many of the international arrangements and agreements, and this should make us wary of global regulation.

Let me conclude by putting this discussion in a more general context. I have provided an economic analysis of some aspects of security markets regulation. The set of ideas that has come to be referred to as "economics and law" has had enormous impact on the legal profession. I welcome the introduction of economic analysis into those areas of the law that touch upon economic behavior; unfortunately, much of the "economics and law" tradition is based on bad economics. Efficiency doctrines ignoring equity—arguing in fact that you can separate out the two—are one example. So too are doctrines suggesting that unfettered markets by themselves would, by and large, lead to economic efficiency. It is important that regulatory laws affecting key aspects of economic behavior, such as those I have discussed today involving securities regulation, be based on economic analysis. On the other hand, relying on a paradigm that is badly flawed, and has been shown to be so, is dangerous. This flawed "law and econom-

22. F. Hoffmann-La Roche Ltd. v. Empagran, 542 U.S. 155 (2004).

23. *Id.* at 166.

ics paradigm" may lead to a set of regulations and laws (including their interpretations) which results in an economy which is neither efficient nor fair. The challenge now is to successfully confront that paradigm, exposing its hidden assumptions and underlying weaknesses, and replace it with an alternative. I hope my discussion of security law regulations—and the market economics which underlies it—has illustrated how this might be done.

Thank you.