Financial regulation in the aftermath of the bubble

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1. Introduction

The stock market bubble of the 1920s was accompanied by questionable conduct by security issuers, underwriters, brokers, and investment companies. Stock in sham companies was issued and pushed on novice investors by aggressive stock brokers, and the prospects of established firms were knowingly exaggerated.[2] Shareholders in investment companies had their assets diluted by self-dealing managers.[3] The subsequent crash motivated the creation of the institutions and laws that form the core of modern U.S. financial regulation.

History has to some extent repeated itself. A set of abuses by accountants, equity analysts, brokers, and investment companies during the market boom in the late 1990s has motivated a major new law (the Sarbanes-Oxley Act of 2002), new rulemaking by the Securities and Exchange Commission (SEC), and newly vigorous enforcement of existing laws and rules by the SEC and other regulators. It has also led to a surge in interest in further refining financial regulation, especially among generalists. As a crude

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[2] For example, in the conference report accompanying the 1933 Securities Act, the House of Representatives (1933, p. 2) claims that "fully half or $25,000,000 worth of securities floated during this period [the decade following World War One] have been proved to be worthless."

[3] See Baumol, et. al. (1990) and Securities and Exchange Commission (1992) for more details.

proxy of generalist interest, Figure 1 plots mentions of the phrase "Securities and Exchange Commission" in the *New York Times*. Mentions spiked with the collapse of Enron in late 2001 to levels not seen since the 1930s, and they remain at high levels almost four years later.

This chapter reviews some recent issues in the regulation of financial services and markets from the perspective of an industrial organization economist. The field of financial regulation is vast, so I focus on three issues with parallels in other industries: the regulation of pricing, antitrust, and firm boundaries and their implications for conflicts of interest. While these issues may have analogues in other industries, several relatively unique features of the securities industry that are central to understanding the rationale for regulation merit some initial discussion. The first is the industry's size and crucial role in facilitating economic growth and innovation; the second is the informational disadvantages and behavioral biases suffered by investors, which generate many of the market failures regulation aims at redressing.

The remainder of the chapter is outlined as follows. Sections 2 and 3 discuss the scope of the securities industry and unique aspects of its consumers' behavior that together provide much of the motivation for financial regulation. Section 4 provides a brief overview of the main institutions and laws, while Sections 5-7 discusses the three issues outlined above. A conclusion follows.

2. The scope of the securities industry

Financial services are a larger piece of the economy than many economically literate Americans realize. Most regular newspaper readers are aware that health care

expenditures are about 15 percent of GDP and that this ratio is about 1.5 times higher than in other advanced countries (OECD, 2005). This figure is the centerpiece of an active debate about the extent to which it reflects high quantity and quality, high prices and economic rents, or waste.

Very few are aware, however, that the corresponding figures for financial services are about as high. Because financial services are an intermediate good as well as a final good, a direct comparison of expenditure data is not meaningful. Table 1 reports the gross value added of the financial intermediation sector (which includes banking, insurance, and securities), which is 8.1 percent of GDP for the U.S. and an average of 5.1 percent in the rest of the G-7. For comparison, gross value added figures for "health and social work" are provided. Gross value added excludes purchases of materials, services, and capital equipment, and so these figures are not directly comparable to the expenditure data, but they do suggest that finance and health care are roughly comparable in size.

An alternative measure of the sector's size is provided by revenue data from the 2002 Economic Census. The total revenue of the financial intermediation sector in 2002 is $2.7 trillion, or about 25 percent of GDP (Table 2). This figure includes both revenue from interest on loans and double counts revenue from intermediate goods and services, so it may overstate the size of the sector. The Economic Census data show that the sector accounts for 12.8 percent of revenue, 10 percent of payroll, and 6 percent of employment reported in all industries. The last two ratios do not suffer from double counting and the first includes it in both numerator and denominator, so these are probably better indicators of its share in the economy. The conclusion that the sector is about as large as health care still seems at least roughly valid.

Of the $2.7 trillion in revenue reported in the Census, about $600 billion falls into the scope of this chapter: the $348 billion in revenue of the "securities and related activities" and "real estate investment trusts" sectors (NAICS 523 and 52593) and $88 billion, $14 billion, and $150 billion in the securities-related product lines of commercial banks, non-depository credit institutions, and insurance companies, respectively. This $600 billion represents about 5.5 percent of GDP and 3 percent of the stock of financial market assets held by households.[4]

Table 3 provides a product level breakdown of the subset of this revenue accounted for by commercial banks and securities firms. These activities also form the value chain for the industry: securities are originated ($19 billion) and traded on secondary exchanges by brokers ($161 billion) and proprietary traders ($41 billion). They are purchased either by the investing public directly or indirectly via investment managers and trusts ($138 billion) or annuities and other investments managed by insurance companies ($150 billion). These investment products are in turn often purchased with the assistance of financial planners or advisors.

As with health care, it is impossible to infer over or under spending from the $600 billion number alone. But these figures are useful in roughly sizing what is at stake. To make the point that inefficiency in this sector can have disproportionate macroeconomic consequences, I indulge in the following exercise. Suppose that this 5.5 percent of GDP either includes one percent of GDP in pure waste or, alternatively, reflects an underinvestment in intermediation services that leads to a misallocation of capital that

[4] The stock of financial market assets held by households is calculated as $19.6 trillion for 2002 by taking total financial assets ($29.7 trillion) less bank deposits ($4.0 trillion), equity in non-corporate business ($5.2 trillion), and insurance reserves ($0.9 trillion). Source: Federal Reserve, *Flow of Funds Accounts for the United States*, Table L100.

leads to a net waste of one percent of GDP. Recall from the Solow (1956) growth model that the steady state capital-output ratio is equal to $s/(d + n + g)$, where s is savings as a percent of GDP, d is the depreciation rate, n is population growth, and g is total factor productivity growth. Taking reasonable values for the last three parameters of five, one, and two percent respectively implies that waste or misallocation that lowers the savings rate by one percent reduces the steady state capital output ratio by 12.5 percent. Assuming Cobb-Douglas production with a capital share of 0.3, this lowers steady state output-per-capita by about six percent.[5] This six percent reduction, which occurs over time as a lower net savings rate leads to slower accumulation of capital, is in addition to the direct waste of the one percent of GDP.

This Solow model exercise actually understates the importance of an efficient and effective financial sector in several ways. Savings is exogenous in the Solow model; if savers react to financial-sector inefficiencies by reducing their saving, the effects could be greater. In addition, the Solow model assumes that capital accumulation and technological progress are independent. It thus ignores that fact that new firms and new vintages of capital equipment are a primary means through which new technologies are developed and deployed, respectively. In short, all of the arguments that can be made in favor of lower taxation of capital can also be made in favor of an efficient financial sector.[6] The key question, of course, is where are the inefficiencies and how can better regulation reduce them?

[5] If the Cobb-Douglas production function is Y=A*K^a*L^a, then (Y/L) = (Y/K)^[a/(1-a)]*A^[1/(1-a)]
[6] For an example of the former, see Council of Economic Advisers (2003), Chapter 5.

3. Consumer behavior in finance

In addition to its macroeconomic importance, the other unique feature of the securities industry that influences how it is regulated is the informational and behavioral handicaps faced by its customers. Standard arguments about the optimality of competitive market equilibria rely on rational agents who perfectly observe product characteristics. When buying securities or financial services, most consumers are at a greater informational disadvantage than when buying almost any other product. In addition, they exhibit behavioral biases, particularly naïveté about the incentives of experts.

For many financial products, the majority of customers do not understand the rather central concept of a "price." For example, in a 2002 survey by Vanguard and Money magazine, only 25 percent of investors correctly identified the expense ratio as the annual fee they pay for a mutual fund (on a multiple choice question with no guessing penalty). Likewise, an OCC/SEC survey reported on by Alexander, Jones, and Nigro (2001, p. 164) found that only 19 percent of mutual fund investors reported knowing the (approximate) expense ratio of their largest fund investment. Hortascu and Syverson (2004) find that a large proportion of investors choose S&P index funds as if they had very high search costs. An alternative interpretation of their results would be investors observing price imperfectly when choosing their funds (Busse, Elton, and Gruber, 2004).

A similar percentage in the Vanguard-Money survey misunderstood loads (sales commissions paid to the broker who sells a fund). This might help explain the recent popularity of "B" shares, in which the broker's commission is deducted gradually from shareholder's assets as opposed to being deducted from their investment upfront. It is

alleged that many brokers misrepresent “B” shares as being no-load funds or steer investors into “B” shares where there are lower commission alternatives. But while expense ratios and loads may be misunderstood by many investors, at least they are disclosed to investors who take the time to read the fund’s prospectus. Mutual fund investors also pay other costs, such as brokerage commissions and transactions costs, that are difficult for even experts to obtain full information on.

Among investment products, however, mutual funds are probably the most transparent. Variable annuities carry a variety of fees that are in many cases collectively large enough to pay sales commissions of 10 percent of the amount invested. In July 2004, the *New York Times* reported on the sales of a set of extremely disadvantageous contractual mutual fund and life insurance products on military bases (Henriques, 2004). In both types of products, the fees that finance sales commissions are not deducted from an investor’s investment upfront in a transparent manner, but instead are spread across various administration fees, expenses charged to the underlying investments, and fees for death benefits that are well above the cost of a comparable amount of term life insurance.

In brokerage accounts, many investors understand commissions, but other trading costs such as the bid-ask spread and how it is affected by order handling rules are much more difficult concepts. When investors buy bonds from a brokerage at no commission, many do not realize that the brokerage is charging a markup that usually exceeds the commission on comparably-sized stock transactions (see e.g., Harris and Piwowar, 2004). Likewise, when investors buy shares in public offerings, some are unaware that the company is paying an underwriting commission on the proceeds, creating a wedge

between the amount they pay and the funds that management is able to invest on their behalf.

Apart from difficulty understanding prices, the field of behavioral finance has documented a variety of psychological biases that affect consumers when making financial decisions.[7] Investors, especially males, trade too frequently (Shefrin and Statman, 1994; Odean, 1998). Investors also react to news inefficiently. At short-to-medium time horizons (e.g., one year) investors suffer from the disposition effect, holding on to losing investments too long and selling winners too quickly (Shefrin and Statman, 1985). This is the reverse of what would be optimal given the tax treatment of capital gains and the longstanding findings of momentum in stock prices at the one-year time horizon (Jagadesh and Titman, 1993). Investors also display the disposition effect in their mutual fund investments, holding on to underperforming mutual funds despite the fact that these funds tend to repeat their underperformance (Carhart 1997; Kacperczyk, Sialm, and Zheng, 2005). A psychological reason for avoiding selling a losing investment is that it creates cognitive dissonance – booking a loss is an acknowledgement that the initial investment was a mistake.[8] Firing a financial advisor that one once trusted requires a similar acknowledgement and creates a stickiness that some advisors exploit.

Many investors also appear to be excessively influenced by and naïve about the incentives of financial advisors, equity analysts, and the financial media. Across a

[7] A full review of the field is well beyond the scope of this chapter – Shefrin (2002) and Barberis and Thaler (2003) provide excellent summaries. The findings of behavioral finance about consumer behavior in this industry has motivated some to consider the implications of boundedly-rational consumer behavior in other industries, see, e.g. Gabaix and Laibson (2005).

[8] Investors overreact to positive news at longer time horizons (e.g., 3-5 years), buying stocks that have performed well in the last 3-5 years and pushing up their prices to the point where they underperform in the future (De Bondt and Thaler, 1985 and 1989). This can also be rationalized as being due to cognitive dissonance if investors window dress their own portfolios, removing long-term losing stocks and buying stocks they wish they had bought earlier.

variety of metrics, financial advisors choose funds for their clients that are no better than the funds no-load investors choose for themselves (Bergstresser, Chalmers, and Tufano, 2005), and advisors are particularly unlikely to advise a client to sell a persistently underperforming fund offered by the same firm (Christofferson, Evans, and Musto, 2005). Alexander, Jones, and Nigro (2001) report that many investors have misconceptions about the sign of the correlation between expenses and future returns, the degree of persistence in mutual fund returns, and whether money market funds are FDIC insured, and that in some cases they acquire this misconceptions from their financial advisors.[9] One of the strongest predictors of mutual fund inflows is high 12b1 fees; 12b1 fees are collected from investors and mostly used to finance payments to the brokerage or advisor that recommended the fund (Reid and Rea, 2003). Mutual fund recommendations in personal finance magazines are associated with significant future inflows, despite the fact that positively mentioned funds perform no better than average in the future and that mentions are correlated with a fund family's past advertising (Reuter and Zitzewitz, 2006). Investors in stocks react to media reports, even when they contain no new information. One of the most famous examples is the four-fold increase in the stock price of EntreMed that followed a front-page *New York Times* story, despite the fact that the potential breakthrough in cancer research highlighted in the article had been published in Nature and written up in other newspapers (including the *Times*) over the prior five months (Huberman and Regev, 2001). CEO interviews on CNBC from

[9] For example, 35 percent of investors in money market mutual funds who used a broker believe that they are these funds are insured, and 23 percent of those report being told this by their broker (p. 180). The number of investors who believe in a positive relationship between expenses and returns outnumbers those who believe in a negative relationship (19.9 percent to 15.7 percent); the margin widens to 21.0 to 14.0 for investors who invest through intermediaries (banks, brokers, insurance companies, or retirement plans) (p. 165). Twenty-four percent of investors expect a fund with a good performance in the previous year to have above average performance in the next year (p. 166).

1999-2001 were accompanied by a 1.65 percent stock price appreciation that mean-reverted over the next day (Mischke, 2004; see also Busse and Clifton, 2001). The discounts of foreign closed-end funds (the difference between the price of a fund and the value of its underlying assets) react to whether and how extensively foreign news is reported in the U.S. press (Klibanoff, Lamont, and Wizman, 1998). Media-savvy issuers appear to exploit these biases, by directing media attention to the most favorable earnings metric (Dyck and Zingales, 2005) and by announcing bad news on Friday afternoons (Bagnoli, Clement, and Watts, 2005; Della Vigna and Polley, 2005). Investors' reliance on the media has also been exploited through include trading in advance of media coverage and the use of the media to manipulate asset prices.[10]

There are limits to the extent to which regulation can protect investors from their own biases or a lack of sophistication. As we will discuss below, consumer protection regulation has generally taken three different approaches. First, merit and anti-fraud regulations protect the least sophisticated investors by restricting the availability of certain types of securities or financial services that are viewed as particularly abusive (e.g., Ponzi schemes) and limiting others to sophisticated investors (e.g., hedge funds). Second, both the SEC and self-regulatory bodies such as the NASD regulate the behavior of investment professionals such as stock brokers and investment advisors, particularly any exploitation of investors' naïveté and biases. Finally, disclosure and registration regulations force the disclosure of certain characteristics of issuers and investments to ensure that sophisticated investors have access to a certain minimum level of information.

[10] Examples include the insiders who provided tips on the content of the *Wall Street Journal's* "Heard on the Street" and *Business Week's* "Inside Wall Street" columns and financial columnists who have allegedly recommended stocks they hold positions in.

One of the main debates in financial regulation is whether efforts to protect consumers should focus on disclosure requirements or on merit regulation that restricts products and behavior. The SEC generally favors the former, while the state regulators who enforce anti-fraud statues tend to take the latter approach. As Zingales (2004) emphasizes, an advantage of disclosure regulation is that its costs are usually smaller than those of merit regulation, which risks limiting innovation. The problem is that for the unsophisticated investors most in need of protection, the benefits of additional disclosure are often quite small too. The effectiveness of disclosure depends in large part on the diligence and independence of the financial media and of third-party advisers.

The experience of the last few years has not been encouraging on this count. The financial media embraced (and profited from) the late 1990s stock market bubble more or less uncritically. Despite the fact that the conflicts of interest faced by equity analysts working for firms that competed for underwriting business were fairly well understood in industry as well as in the academy (Lin and McNichols, 1998; Michaely and Womack, 1999), the financial media gave prominence to banking analysts and neglected to discuss their conflicts. The academic studies documenting the extent of stale price arbitrage in mutual funds (e.g., Goetzmann, Ivkovic, and Rouwenhorst, 2001; Greene and Hodges, 2002; Zitzewitz, 2003) were known to reporters at major publications, and yet they were discussed extremely rarely until the announcement of New York Attorney General (NYAG) Eliot Spitzer's investigation in September 2003.[11] Third-party advisors have

[11] Two notable exceptions were Stone (2002) and Carhart (2003), although it should be noted that even these articles appeared only in the online editions of *Business Week* and *Forbes*, respectively. Other articles discussed the issue, but framed it in a way that buried the lead (e.g., "Monitoring Trades for the Good of the Fund", *New York Times*, 4/9/2000). After the announcement of the NYAG's investigation, the financial media did report on the issues thoroughly. Miller (2004) also finds that the media's coverage of accounting fraud in an industry is not related to the industry's propensity to advertise.

also been criticized for undisclosed conflicts of interest; examples include financial advisors and consultants to institutional investors who did not disclose special incentives to sell certain investments.

4. The main laws and institutions

The core of modern federal financial regulation is formed by four laws passed during the Great Depression: the Securities Act of 1933 (the "1933 Act"), the Securities Exchange Act of 1934 (the "1934 Act"), the Investment Company Act of 1940 (the "1940 Act"), and the Investment Advisors Act of 1940.[12] These four acts each regulate a stage in the value chain discussed above: respectively, they regulate the issuance of securities,[13] the brokerage and secondary trading of securities and the ongoing disclosure requirements of their issuers, investment companies (open and closed-end mutual funds), and investment advisors (including both advisors who manage client assets directly as well as those who manage the assets of investment companies).

The 1933 Act requires the registration of securities with the SEC (subject to certain exemptions, e.g., for private placements that are not made available to the public) and requires the delivery of a prospectus to investors. Given that investors have a favorable cause of action if the issuer makes materially misleading statements or omissions in its offering documents, the disclosure in offering documents is generally much more extensive than ongoing disclosure by issuers. This generates two substantial costs to an initial offering of securities, 1) the fees and other costs associated with

[12] This brief overview of securities regulation draws heavily on Coffee and Seligman (2002), who I refer readers to for more detail.

[13] Along with the 1933 Act, the Trust Indenture Act of 1939 also governs the issuance of bonds.

generating and delivering these documents and 2) the competitive costs of the extensive disclosure of business information that is usually involved.

The 1934 Act establishes annual and quarterly disclosure requirements for companies, requires SEC preclearance of proxy statements for shareholder votes, and establishes a self-regulatory system for stock exchanges and brokers. The stock exchanges and the NASD, which self-regulates stock brokers, are both overseen by the SEC. The 1934 Act (also referred to as the "Exchange Act") gives the SEC broad rule making authority to proscribe practices of broker-dealers as "manipulative, deceptive, or otherwise fraudulent." The 1934 Act has been amended by Congress multiple times, examples include the 1964 Securities Acts Amendments (which extended disclosure requirements to large over-the-counter [i.e., public, but not stock-exchange-listed] firms), the 1970 amendment creating the Securities Investor Protection Corporate (which provides FDIC-like insurance for brokerage accounts), the Securities Act Amendments of 1975 (which deregulated brokerage commissions), the Foreign Corrupt Practices Act of 1977 (prohibiting bribery by public companies), the Insider Trading Sanctions Act of 1984 and Insider Trading and Securities Fraud Enforcement Act of 1988, the Private Securities Litigation Reform Act of 1995 (which sought to limit certain types of shareholder class action lawsuits), and the Sarbanes-Oxley Act of 2002 (SOX).

The Sarbanes-Oxley Act has been both controversial and an active current research topic and thus merits additional discussion. Most provisions of SOX appear to be a direct response to specific accounting abuses at firms such as Enron and Worldcom. SOX creates a self-regulatory body to regulate the accounting profession, restricts the provision of consulting and other services by an audit firm to an audit client, and requires

the rotation of the lead audit partner every 5 years. For issuers, SOX requires audit committees to be composed entirely of independent directors and requires CEOs and CFOs to certify the firm's accounting numbers and face disgorgement of compensation and stock trading profits and criminal sanctions for misleading earnings or knowingly false statements. SOX requires the SEC to develop rules requiring companies report on the adequacy of internal controls, rules requiring attorneys appearing before the SEC to report security laws violations, and rules governing the independence of security analysts. It also tightens rules on stock trading by directors and executives, extends the statue of limitations for securities fraud, and enhances protections for corporate whistleblowers.

SOX has been heavily criticized by the business community and some scholars for making external and internal auditing more expensive and onerous.[14] Eldridge and Kealey (2005) report that average audit fees for a sample of 648 Fortune 1000 companies increased from $3.5 million to $5.8 million from 2003 to 2004, and they attribute most of this increase to SOX. Leuz, Triantis, Wang (2004) and Carney (2005) argue that costs associated with SOX may have encouraged some firms to delist. Against this cost is the benefit firms with clean accounting received from a restored investor confidence. Li, Pincus, and Rego (2005) and Rezaee and Jain (2005) found positive stock price responses to the act. Engel, Hayes, and Wang (2004) find more positive event returns for larger firms, as one might expect given that the costs of SOX increase more slowly with firm

[14] For example, Romano (2005) claims it ignored the findings of the empirical and accounting literature, attributes its passage to a media frenzy and the impending midterm elections, and calls it "Quack Corporate Governance."

size than the benefits.[15] For better or worse, SOX has significantly "raised the bar" for being a public company.

The 1940 Act regulates open and closed-end mutual funds. Mutual funds are far more important than when the 1940 Act was passed: in 2003 equity mutual funds accounted for 19.7 percent of household equity holdings money market funds accounted for 21.2 percent of household holdings of cash equivalents (demand deposits, time deposits, etc.).[16] The 1940 Act contains provisions designed to protect shareholders from dilution by fund managers. It requires that investment companies have a board of trustees, that they annually review the management contract for the fund, and that a majority of these trustees be independent of the investment advisor. It establishes the fiduciary duties of the trustees and the investment advisor. It also establishes rules governing transactions in shares of open-end mutual funds designed to ensure that investors transact at prices that reflect fair market values.

Although the 1940 Act does include some regulation of behavior, like the 1933 Act and 1934 Act, it relies primarily on disclosure. As Jackson (1997, p. 535) puts it: "the 1940 Act relies on disclosure-based regulation more than any other comparable regulatory structure in the United States." This is notable in that whereas the 1933 and 1934 Act regulate securities markets where arbitrage ensures that sophisticated investors will have significant influence on asset prices, the 1940 Act regulates investments that are

[15] Bushee and Leuz (2004) and Greenstone, Oyer, and Vissing-Jorgenson (2005) find analogous results for the 1964 Securities Acts Amendments, which extended disclosure requirements to firms traded on the OTC Bulletin Board: the disclosure requirements led some firms to delist (Bushee and Leuz) but was accompanied by positive event returns for those that remained (Greenstone, et. al.).

[16] The money market mutual fund share of cash equivalents is calculated from lines 2-5 of Table L.100 of the Flow of Funds Data for 2002. Mutual fund share of equity holdings is U.S. mutual fund holdings of domestic stock estimated from the CRSP Survivor-Bias Free Mutual Funds Database of $2.2 trillion divided by the sum of market capitalizations of equities listed in the CRSP Stock Price database of $11.3 trillion. Both of the later figures are year-end 2002.

designed primarily for unsophisticated investors. Mutual funds cannot be sold short, and so market efficiency requires that full information and rationality be possessed by all investors, not merely a relatively small number with access to sufficient arbitrage capital.

Finally, the **Investment Advisors Act** requires registration of investment advisors managing a substantial amount of client assets (currently, $30 million) in either investment companies or separate accounts. It also prohibits fraud and certain deceptive practices and limits the circumstances under which the advisor can receive incentive compensation. Until recently, SEC rules exempted advisors with a limited number of "accredited" (i.e., wealthy enough to be assumed to be sophisticated) clients from registration. These rules were recently tightened in a way that will force most hedge fund advisors to register with the SEC.

The SEC has the primary responsibility for enforcing and promulgating new rules under these acts.[17] It is organized around these acts, with the Division of Corporate Finance having primary responsibility for the 1933 Act, the Division of Market Regulation for the 1934 Act, and the Division of Investment Management for the 1940 Act and Investment Advisors Act. These divisions support the Commission in its two major channels for policy making: the promulgation of new rules under the Acts and responding to parties requesting that the Commission take "no action" against a novel practice. Enforcement is handled by its own division, and these four divisions are supported by functional offices (the Office of General Counsel, Office of Chief Accountant, and Office of Economic Analysis).

[17] The SEC is also charged with enforcing the Public Utility Holding Company Act of 1935, although Coffee and Seligman (2002) note that this is "no longer an important statue because the SEC has largely deregulated the field."

The SEC has grown considerably in the last 3 years in terms of both staff and budget. It has also engaged in a significant amount of new rulemaking. A number of the more important new rules have involved increased disclosure by investment companies and advisors.[18] In some cases, enhanced disclosure requirements were adopted as a compromise in lieu of either direct dictation of practices (e.g., on fair value pricing) or more meaningful disclosure (e.g., of portfolio manager salaries, as opposed to the factors used to determine them). In addition, certain practices that were viewed as harmful to shareholders have been prohibited[19] and fiduciary duties have been clarified.[20] The SEC has promulgated rules as needed to implement SOX. It has also used rule making to implement decimalization, to relax short-selling rules (Regulation SHO), and to limit selective disclosure by companies, particularly to equity analysts (Regulation FD).

As mentioned above, the 1934 Act provides for the SEC to delegate primary regulatory authority to self-regulatory organizations (SROs): the stock exchanges self-regulate themselves, the NASD regulates its broker-dealer members, and the new Accounting Oversight Board created by SOX regulates the accounting profession. In each case, the SEC holds ultimate regulatory authority. A similar structure exists for derivatives, where the CFTC acts as the ultimate regulator, but delegates self regulatory

[18] For example, investment advisors are now required to disclose how they voted shareholder proxies (SEC Rule IA-2106). Investment companies are required to disclose their after-tax returns (33-8010) and to provide information about portfolio managers, including the factors used to determine their compensation (33-8458), about how the trustees determined the appropriateness of management fees (33-8433), about the availability of front-load commission discounts (33-8427), and about their policies regarding market timing, fair value pricing, and selective disclosure of portfolio holdings (33-8408).

[19] For example, investment companies are now prohibited from directing brokerage commissions to firms as a reward for selling fund shares (SEC Rule IC-26591), as this was viewed as fund advisors using shareholders' assets to reward brokers for an activity that primarily benefits the advisor.

[20] For example, SEC Rule IA-2106 requires that investment companies vote shareholder proxies in their own shareholders' interest. Although fund trustees already had a fiduciary responsibility to ensure that advisory and other fees charged to a fund were appropriate and SEC Rule 33-8433 formally only requires additional disclosure of the basis of that decision, some have argued that in practice it is likely to reinforce trustees' fiduciary responsibilities in this area.

authority to exchanges such as the Chicago Mercantile Exchange (CME). Generally, cooperation in this system is amicable, but there are exceptions, with the forced replacement of the NASD leadership following the Nasdaq market maker collusion scandal being a prime example.

Before modern federal securities regulation began in the 1930s, most states had their own regulations. These are often called "blue sky" laws, and they typically focus on the prevention of fraud by brokers, investment advisors, and securities issuers. They require registration by brokers and advisors and of newly offered securities, and the resulting registration fees provide a source of revenue that no states choose to forego. Apart from revenue collection, state securities laws declined in importance in the 1980s and 1990s, when a number of states dropped merit regulation of securities offerings, and the National Securities Market Improvement Act of 1996 preempted state registration requirements for exchanged listed securities. This trend has reversed in the last four years, particularly as NYAG Eliot Spitzer has used the broad authority given him in New York State's Martin Act of 1921 to pursue allegedly fraudulent activity by equity analysts, mutual funds, and insurance companies.

The NYAG's activity in the last four years has created competition between state and federal regulators.[21] Whereas some states (e.g., Michigan) have explicitly rejected the suggestion that they investigate securities issues in parallel with the SEC, others (e.g., California, Massachusetts, North Carolina, West Virgina, New Jersey, New Hampshire, Colorado, and Wisconsin) have investigated in parallel or in advance of the SEC. Spitzer

[21] Romano (2001) discusses the potential benefits of competition across regulatory venues that issuers and investors could select (e.g., stock exchanges of different countries). The current competition between the state and federal governments is subtlely different in that it involves competition between institutions to regulate the same venue.

and some other state regulators have explicitly cited regulatory capture at the SEC in motivating action by the states.[22]

This revives a longstanding critique of the SEC and the SROs as reflecting the interests of industry, particularly in more aggressive enforcement action against misconduct by rouge individuals (broker fraud, insider trading) than against more systemic forms of misconduct (analyst conflicts, mutual fund compliance issues, earnings management). Those concerned about regulatory capture worry about two sources: top-down and bottom-up. A potential source of top-down is the natural political influence of so large an industry.[23] The partisan divide of the SEC over several recent regulators proposals has also revived interest in the partisan political economy of the SEC (e.g., Zitzewitz, 2002). A source of bottom-up capture is the staffing approach of SROs and the SEC. Turnover rates for attorneys, accountants, and compliance examiners at the SEC are more than twice those for comparable-level employees elsewhere in the federal government, including in bank regulation (SEC, 2002). As Woodward (2001, p. 100) argues, the "best, and best by a wide margin, post-SEC employment opportunities [are] working for the regulatees …." A "revolving door" staffing model where employees work short tenures in the government and then transition to higher-salaried positions in industry can be successful in attracting talented individuals at a reasonable cost, but has been long regarded as a source of regulatory capture (Stigler, 1971).

Following the above review of the scope of the securities industry, some key features of consumer behavior that motivate regulation, and the main laws and

[22] Cite an interview.

[23] *Opensecrets.org* lists the securities industry as the fourth largest political donor; it probably also accounts for some portion of the donations of the top industry, the legal profession.

institutions, I now turn to three recent issues in the regulation of financial services and markets that have parallels in other industries.

5. The Regulation of Pricing

In November 2003 in testimony before multiple Congressional committees, Eliot Spitzer called attention to the "$70 billion in management and advisory fees" paid by mutual fund investors in 2002 that "are in addition to significant costs – such as trading costs – that are passed on to investors."[24] Spitzer cited the difference between advisory fees charged by the same firm to retail and institutional accounts and cited weak fund governance as the root cause of both the mutual fund share trading scandal and what he regards as excessive level of fees: "We know that directors and managers breached their duties to investors in every conceivable manner. As regulators and lawmakers, our duty to investors is to investigate every manifestation of that breach and to return to investors any and all fees that were improper or inappropriate. This includes the fees that the managers received during the very time that they were violating their fiduciary duties to investors."[25] Spitzer proposed disclosure of the precise dollar amount of fees paid to each investor, a strengthening of fund trustee's fiduciary duties with respect to fees, most favored nations clauses preventing retail mutual funds from being charge more than institutional accounts, and competitive bidding for advisory contracts. Lacking the jurisdiction to act on any of these proposals, Spitzer negotiated fee reductions with several mutual fund companies as part of subsequent settlements of share trading allegations.

[24] "Testimony of State of New York Attorney General Eliot Spitzer Before the United States Senate Banking, Housing, and Urban Affairs Committee," November 20, 2003, p. 2.
[25] Ibid, p. 3.

The mutual fund industry and the SEC were not especially receptive to this line of argument. The SEC did not participate in the fee reduction portion of the mutual fund settlements, even when all other aspects of the settlement negotiations were coordinated. Regarding retail-institutional fee differences, the industry argued (convincingly) that servicing retail clients was more expensive per dollar invested than servicing institutional clients and (arguably less convincingly) that this accounted for entire difference in fees charged. Requiring the disclosure of fees paid by individuals was included at one point in a House of Representatives bill, but removed in committee. The SEC did require disclosure of trustees' rationale for the advisory fees charged, and some expect this to increase pressure from boards for fee reductions.

Any evidence of pressure created by this disclosure for lower fund expenses has yet to emerge from the data. On a "same store" basis, the average expense ratio for funds declined less than one percent from 2002 to 2004.[26] In addition, the debate over expenses does not appear to created market pressure for fee reductions. Although the combined market shares of Vanguard, Fidelity, and American Funds, three large fund families with lower than average expense ratios, increased from 27.6 to 33.5 percent from 2002 to 2004, this was more than offset by an increase in the average expense ratio charged by other funds in the industry, and the asset-weighted average expense ratio actually increased slightly from 2002-4 (Table 4). Even if some investors became more sensitive to fees during this period and switched assets to lower-expense-ratio firms, if these were on average the most fee sensitive clients at their original firms, their departure would have reduced the average fee sensitivity of clients at the other firms, increasing the

[26] For funds reporting assets and expense ratios in both 2002 and 2004, the average expense ratio (weighted by 2002 assets) was 74.0 basis points and 73.6 basis points in 2004.

optimal price. It is also possible that the increased regulatory activity of the past two years increased marginal (as opposed to fixed or sunk) costs and that this offset the effects of any greater fee sensitivity.

Downward regulatory pressure on price, whether via direct regulation of prices or indirect measures such as those proposed by the NYAG, is generally considered to have several potential side effects. First, if product quality is non-contractable and thus cannot also be regulated, price caps can lead to lower-than-efficient levels of quality. In the mutual fund context, fund advisors have a number of means of charging shareholders for their services outside of the expense ratio. For example, they can place stock trades at brokers who provide a benefit to the advisor. Examples of these benefits can be allocations of IPO (Reuter, 2005), sales support for the advisor's funds, or "soft dollar" credits that are officially supposed to be used to finance purchases of research, but in practice have been used for office space, periodical subscriptions, computer equipment, and travel expenses. Benefits can also be given by the broker to the advisors' employees; the recently alleged excessive gift giving by Jefferies Securities to Fidelity employees provides an example.[27] Fund advisors can also divert shareholder assets by allowing stale price arbitrage trading in their funds, by engaging in cross trades between portfolios at systematically advantageous prices, and by front running personal or favored-portfolio assets ahead of mutual fund trades. Most of these devices are either illegal or at least discouraged by regulators, but nevertheless, at least in principle one might worry that downward regulatory pressure on prices leads advisors to increase their use.

[27] See, for example, Craig, Susanne and John Hechinger, "Entertaining Excess: Fishing for Fidelity Business, One Firm Employed Lavish Bait," *Wall Street Journal*, 8/12/2005, p. A1.

A second consequence of downward price regulation can be shortages or exit. For mutual funds, which have high fixed costs at the firm level but low marginal costs, the latter is probably more likely. The increase in regulatory scrutiny has increased fixed (as well as sunk) costs for mutual fund families and has probably also reduced the use of some of the non-expense-ratio sources of revenue described above. Thus one might expect some pressure for consolidation in the longer-run, but perhaps surprisingly there is not much evidence of this yet. The number of unique management companies offering funds capture by the CRSP Dataset has declined from 598 in 2000 to 564 in 2004, but 75 percent of this decline was from 2001 to 2002 and thus was presumably more related to the stock market decline than to increased regulatory pressure.

The welfare costs of fund advisor exit depend crucially on what one assumes about consumer behavior. If we assume that consumers would like to maximize the risk-adjusted returns on their investments but do so imperfectly due to information and cognitive limitations, then we can analyze welfare by examining the implications of exit for shareholder returns. The firms most likely to be induced to exit by downward regulatory pressure on price are small, high-expense ratio firms, and studies of the determinants of fund returns find that these firms produce the lowest returns, even before deducting expenses (e.g., Carhart, 1997). This suggests that in the mutual-fund context, regulatory-induced exit can be good for consumers. On the other hand, if consumers are fully rational and have perfect information about *ex-ante* expected returns, then any fund they buy or continue to hold must be welfare-maximizing for them.[28] The exit of a fund

[28] For example, one reason why a customer might rationally buy high-expense funds with low ex-ante expected returns is if the quality of services that are bundled with the fund are high. Collins (2005) argues that differences in service quality explain the price dispersion in index fund expense ratios reported on by Busse, Elton, and Gruber (2004) and Hortascu and Sversson (2005).

firm deprives its clients of their first choice and thus, by assumption, must reduce the welfare of these consumers.

Of course, even if one views returns as an adequate proxy for shareholder welfare, one might still have concerns about policies that induce exit and raise the minimum-required scale for entry in an industry. An increase in industry concentration might reduce competitive intensity in the industry, although concentration in this industry is low enough that one might not expect the exit of a small number of high-cost firms to significantly affect behavior. On the other hand, increased entry barriers might also limit the future entry of innovative firms. The importance of this effect depends on the extent to which one views the industry as mature.

6. Antitrust

The best known financial services antitrust case is undoubtedly the case against the Nasdaq market makers in the mid-1990s. The case was initiated after Christie and Schultz (1994) reported that odd-eighths quotations (i.e., a market market offering to trade a stock at 47 1/8 instead of 47 or 47 ¼) were extremely rare for a subset of Nasdaq stocks. After an investigation, the Department of Justice alleged that the avoidance of odd-eighths quotes was collusive behavior designed to increase average market maker spreads.

Several features of market making may have facilitated collusion. First, market makers observe each other's price quotations; cheating against any collusive arrangement would thus be readily detected. Second, avoiding odd-eighths was a focal arrangement that allowed for a distribution of quantity while minimizing the need for conferring.

Avoiding odd-eighths quotations was particularly focal given that the minimum tick size on Nasdaq had only recently been reduced from one-quarter. Third, under preferencing agreements with sources of order flow (e.g., brokerages), many market makers had the right to handle any order flow at the current best bid and ask prices offered by any other market maker (the National Best Bid and Offer, or NBBO). This functioned as a "meet-or-release" clause; so long as the preferred market maker was willing to match, a market maker who undercut the current NBBO could not attract any of the preferenced order flow. This significantly reduced the returns to "cheating" on any collusive arrangement. Fourth, market makers competed in multiple markets, so cheating in one market could be punished in another. As Christie and Schultz (1995) discuss, an early response to an odd-eighths quotation was often a phone call to the traders' boss, where such punishments were reportedly explicitly threatened.

In addition, the average retail investor's understanding of the bid-ask spread component of transaction costs was limited, and many of the institutional investment managers, who presumably did understand bids and asks, had business units that were beneficiaries of any collusion. Furthermore, the rents from collusion were shared through a system known as payment for order flow. In exchange for signing the above-mentioned preferencing agreements, sources of order flow (such as brokerages) received per share payments. Table 5 shows minimum tick sizes and average gross trading revenue and order flow payments per share for 1995-2003 for Knight Securities, the largest publicly traded pure-play market maker. In 1995-96, Knight paid about one-third of its trading revenue for order flow.

As a result of the antitrust enforcement action, odd-eighths avoidance was abandoned, reducing the effective minimum tick size for stocks were there had been collusion. The collusion case also focused attention on the effects of tick size on investor's transaction costs and further reductions in minimum tick size followed, to 6.25 cents in June 1997 and to 1 cent in early 2001. As predicted by models such as Kandel and Marx (1998) that emphasized minimum tick size as source of market maker rents and payment for order flow, tick size reductions have reduced both market market profitability and order flow payments (Table 5).

Another market in which price transparency and multi-market contact potentially facilitate collusion is in underwriting and syndicated lending. Placing a new issue into the market requires access to a broad network of potential investors, especially since issuers prefer to place it with investors more likely to hold long-term. As a result, several investment banks are usually required to manage and market an offering. Underwriting fees are typically a whole-number percentage of the funds raised (e.g., 7 percent for an initial equity offering, 3 percent for high-yield debt). Underwriting business is reportedly extremely profitable for the bank, and competition for it is typically hard fought, but nevertheless discounts from the standard underwriting fees are rare. Any underwriter who secured business through discounting underwriting fees would be unable to do so in secret, since underwriting fees are disclosed in offering documents. The amount of extra business an underwriter could gain through discounting would be limited by the issuer's desire for wide distributions. And competing banks could punish the discounter, by encouraging clients to exclude the discounter from other syndicates and by encouraging brokerage clients and asset managers (including any asset managers within the same

firm) to avoid purchasing an issue whose underwriting business was obtained by discounting.[29]

The difficulties of discounting underwriting fees lead banks to compete along other dimensions. For example, issuers will demand that banks bundle low-margin products such as revolving credit lines to obtained the higher-margin underwriting business. Alternatively, commercial banks will demand inclusion in investment banking business as a condition of their lending. The latter practice is known as "tying," and the NASD has argued that it violates the Bank Holding Company Act Amendments of 1970, which prohibit banks from extending credit on the condition that borrowers engage in other business with the bank. Commercial banks have in turn argued this form of tying is actually pro-competitive in that gives a means of competing for underwriting business.

Other forms of non-price competition for underwriting business have allegedly included bribes of management and biases in analyst opinion. In the "spinning" cases, banks such as Credit Suisse First Boston were accused of allocating shares in underpriced IPOs to executives of firms in order to win their underwriting business. Investment banks have also been accused of biasing their analyst coverage in order to win underwriting business, which would help explain the correlation between analysts opinions and their firm's investment banking business found by Lin and McNichols (1998) and Michaely and Womack (1999).

[29] Some have argued that institutional investors avoided buying Goggle when it was offered because of their use of a Dutch auction process and a small number of underwriters and their negotiation of a 3 percent underwriting fee. Although Google used a modified Dutch auction that allowed it to price its shares below the market clearing price, creating an incentive for investors to participate in the offering, investment banks may have viewed a successful Dutch auction as a threat, since if it become the common mode of offering it would reduce the importance of underwriters' distribution networks.

Another example of collusion on one dimension of price being at least partly undone by competition on other dimensions is the pre-1975 era of fixed commissions. In the Buttonwood Tree Agreement of 1792 that formed the New York Stock Exchange (NYSE), the NYSE members agreed on minimum commissions: "We the Subscribers, Brokers for the Purchase and Sale of Public Stock, do hereby solemnly promise and pledge ourselves to each other, that we will not buy or sell from this day for any person whatsoever, any kind of Public Stock at a less rate than one-quarter percent Commission …."[30] The NYSE and, after its 1908 founding, the American Stock Exchange maintained fixed commission structures. The 1934 Act gave the SEC oversight of brokerage commissions, but under the guise of self-regulation, the Commission allowed the exchanges to exercise their authority over commissions.

Agreements on commissions only applied to trades on the stock exchanges, but the exchanges prohibited their members from off-exchange trading. Nevertheless "third market" firms developed that specialized in handling off-exchange block trades for institutional investors at discounted commissions. This resulted in undesirable market fragmentation, leading the SEC to first press the exchanges to offer quantity discounts and then, in 1971, to require that commissions on large orders be set competitively (the ceiling was set at $500,000 in April 1971 and lowered to $300,000 in April 1972). The deregulation of large-trade commissions helped motivate a class of small investors to bring a class-action antitrust suit alleging that fixed commissions were price fixing in violation of the Sherman Act. In Gordon v. NYSE (1975), the U.S. Supreme Court ruled that since the 1934 Act had explicitly given the SEC authority to regulate commissions,

[30] F. Eames, The New York Stock Exchange 14 (1968 edition), quoted in Gordon v. New York Stock Exchange (1975).

this superceded the antitrust laws. The decision was quickly made moot however, by the fact that commissions were deregulated in 1975 by Congress (via the aforementioned Securities Acts Amendments of 1975) and the SEC.

During the era of fixed commissions, brokers engaged in non-price competition by offering free research. In addition, institutional clients would negotiate "give ups," where, in lieu of a discount, a portion of their commission would be paid to another broker who in turn provided the investor with free services (such as research or computer services). A group of third-party research firms developed who earned most of their revenue from these give ups. At the time of commission deregulation, these third-party firms feared that investment managers' fiduciary duties would prevent them from paying commissions large enough to finance "give ups" and that managers would be unwilling to pay for research directly. In response to lobbying by asset managers and third-party research firms, Congress added a safe harbor, allowing asset managers to pay above market commissions if they determine that the commission was reasonable given the combined brokerage and research services provided. "Give ups" were renamed "soft dollars" but their economic purpose changed. They were no longer a form of non-price competition that undermined fixed commissions, but instead become a device for asset managers to use client assets to purchase research (and other services) through a less transparent means than including its cost in the expense ratio.[31]

A consequence of the Gordon decision is that the extent to which the Securities Acts preempt the antitrust laws with respect to the securities industry is uncertain and depends crucially on the specific issue at hand. This question is important in part because

[31] Horan and Johansen (2004) argue that the ability of managers to pass on the costs of research in a less-than-transparent manner is beneficial, in that it offsets what would otherwise be an incentive to underinvest in research.

regulatory capture theory would predict that enforcement of anti-trust related issues by a multi-industry regulator (like the DOJ or FTC) to be more aggressive than buy a single-industry (like the SEC). In Gordon, the court found that Congress had explicitly discussed the stock exchanges' fixed commission agreements when writing the 1934 Act, and that their decision to give the SEC primary regulatory authority over commissions carried an implied antitrust immunity (Coffee and Seligman, 2002, p. 646). In contrast, in the Nasdaq Market Makers case brought by the Department of Justice, which alleged practices that were not discussed by Congress when delegating authority to the SEC, the courts did not find that the antitrust laws were preempted.

7. Conflicts of interest and boundaries of firms

> "We have turned conflicts of interest into synergies." Jack Grubman, former telecom analyst at Citigroup, in an email, as quoted by Eliot Spitzer.

The proceeding discussion highlights some of the advantages for a firm participating in multiple financial services businesses. A brokerage salesforce and research department give investment banks an advantage in competing for underwriting business, while the deposit base needed to finance lower-margin bank loans does the same for commercial banks. Asset managers with the power to vote shareholder proxies can also be leverage in obtaining underwriting or other business.[32] In-house brokers or financial advisors can help sell an asset manager's funds. Likewise, an in-house broker allows an asset manager to internalize the benefit of commissions for trades done on behalf of their client. In house proprietary traders may be able to benefit from a brokerage or investment management business, by front running client portfolio trades,

[32] See, for example, Davis and Kim (2005).

stepping in front of client limit orders[33], or otherwise exploiting information gained from clients' trading activities. In-house proprietary trading also benefits from the bundling of informed proprietary trading order flow with the presumably less-informed order flow from client's brokerage accounts or large managed portfolios. Furthermore, when punishing firms that defect against standard industry practices, it is helpful to be able to do so in multiple lines of business.

Many of these synergies also represent conflicts of interest.[34] These conflicts involve the trade off of one client's interests for the interests of either another, favored, client or the firm itself. In some cases, this tradeoff of interests can be accomplished across firm boundaries through explicit payments. For example, "directed brokerage" can be used as a substitute for fund selling by in-house brokers, and soft dollars, especially if used for non-research expenses, can be used to allow asset managers to internalize the profits from portfolio trading commissions. But bringing these tradeoffs inside firm boundaries is helpful for several reasons. First, it eliminates the need for explicit payments that are potentially subject to regulatory or client scrutiny. Second, common ownership can provide a credible commitment to clients expecting favoritism that a contractual-relationship might not. For example, an underwriting client expecting favorable opinions from an analyst is likely to be more assured of getting them if the analyst and the investment banker are employee of the same firm, as opposed to simply having a business relationship. Likewise, clients may invest in hedge funds run side-by-

[33] Suppose a client submits a limit order to buy at stock at $47.00 or better. A broker can "step in front" of this order buy placing a limit order to buy at $47.01. If the broker's order is filled, the broker has the option to either hold the order and gain any market appreciation or, if demand for the stock weakens, sell to the client at $47.00.

[34] For a useful taxonomy of conflicts of interest within and across financial services business lines, see Walter (2005).

side with mutual funds because they expect the differences in fee structures to produce favoritism in their favor. Especially if hedge fund investors are more cognizant of the potential for such favoritism than mutual fund investors, firms running funds side by side may realize net marketing advantages.

Ironically, it was precisely these conflicts of interest that motivated the Glass-Steagall Act of 1933, which legally separated banking, securities, and insurance. While reversing the 1999 repeal of Glass-Steagall is not being widely contemplated, the trend toward convergence that the repeal reflected has certainly slowed, and perhaps even begun a reversal. In the Summer of 2005, Citigroup swapped its asset management business for Legg Mason's brokerage business. A stated reason for the deal was to eliminate the regulatory risks arising from common ownership of asset management and brokerage. It remains to be seen whether this deal will begin a broader trend.

8. Conclusion

Financial regulation has been basically reactive in the last decade. Both Sarbanes-Oxley and many of the significant SEC rules have been adopted in response to revelations of specific abuses, such as accounting fraud, mutual fund late trading, selective disclosure, insider trading, and market maker collusion. Even the most noteworthy deregulation, the Graham-Leach-Billey Act repealing Glass-Steagall, was a response to industry having decided to simply ignore existing law. Given the increasing emphasis on compliance in most financial services firms in the last few years, the rate of revelation of new scandals is likely to slow. This should create the opportunity to think more proactively about what financial regulation should be attempting to accomplish.

As discussed in Sections 2 and 3, many investors pay a financial planner to sell them a mutual fund or annuity, pay the fund manager management and administration fees, and pay commissions and transactions costs for active management that is, on average, both aggressive and unsuccessful in generating positive risk-adjusted returns. Perhaps the largest and most controversial outstanding question about financial regulation is whether this represents an efficient market outcome or a market failure, and, if the latter, whether regulation should do more to correct that failure.

If one decides that it should, the next question would be how: how to change laws to correct existing market failures without creating new ones, and how to reform institutions so that they reinforce rather than undermine this goal. The more difficult component of that question is the institutional one. Both the approach of self-regulatory delegation and the staffing model for the SEC lead these institutions to reflect the interests of the industries they regulate. These interests may be well aligned with the public interest in disciplining the behavior of rogue individuals, but are likely to be much less so in correcting systemic market failures that are also sources of economic rents. On the question of how exactly to change regulations, a key choice is whether to continue relying primarily on disclosure, or whether to become more aggressive about prescribing and proscribing certain behaviors.

A second large and controversial question is whether regulation should continue to encourage, or instead discourage or attempt to reverse, convergence. Many financial services are complements in both their production and consumption, and convergence should allow for many genuine synergies: in production, product innovation, the reduction of search costs via one-stop shopping, and the potential elimination of double

marginalization. At the same time, the last five years suggest that convergence creates many conflicts of interest that even “Chinese Walls” appear inadequate to contain.

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Table 1. Relative sizes of financial services and health care, 2003
Percent of GDP

	Gross value added in Financial Intermediation	Gross value added in Health and Social Work	Total national expenditure on health care
United States	8.1%	6.9%	15.0%
Equal-weighted average of rest of G-7	5.1%	5.9%	9.2%
Canada	5.9%	5.4%	9.9%
France	4.3%	7.6%	10.1%
Germany	3.8%	6.1%	11.1%
Italy	5.4%	4.5%	8.4%
Japan	7.0%	NA	7.9%
United Kingdom	4.4%	5.9%	7.7%

Sources: OECD National Accounts for value added; OECD Health Data for total health care expenditures. National accounts data is from 2001 for Canada and the UK; health expenditure data is for 2002 for Japan and the UK.

Table 2. Size of U.S. financial intermediation industries, 2002

NAICS code		Revenue ($ millions)	Payroll ($ millions)	Employees (thousands)
52	Finance & insurance	2,732,546	377,236	6,534
521	Monetary authorities - central bank	28,909	1,234	22
522	Credit intermediation & related activities	1,061,126	148,211	3,229
52211	Commercial banking	481,231	79,924	1,748
52212	Savings institutions	78,840	10,311	255
52213	Credit unions	37,397	6,503	211
52219	Other depository credit intermediation	1,404	404	5
5222	Nondepository credit intermediation (credit card issuers, leasing, etc.)	403,913	36,617	690
5223	Activities related to credit intermediation (loan brokerage, transaction processing, etc.)	58,342	14,451	319
523	Securities intermediation & related activities	325,184	105,549	869
52311	Investment banking & securities dealing	104,011	31,486	143
52312	Securities brokerage	104,812	36,428	361
52313	Commodity contracts dealing	3,905	835	10
52314	Commodity contracts brokerage	2,881	1,045	12
5232	Securities & commodity exchanges	3,213	721	7
52391	Miscellaneous intermediation	10,359	3,054	29
52392	Portfolio management	65,483	22,244	181
52393	Investment advice	15,098	5,473	67
52399	All other financial investment activities	15,423	4,263	59
524	Insurance carriers & related activities	1,294,941	120,683	2,387
52593	Real Estate Investment Trusts - REITs	22,386	1,559	26

Source: 2002 Economic Census. The economic census includes only REITs from NAICS code 525, excluding, for example pension funds.

Table 3. Revenue of U.S. commercial banks and securities firms by product, 2002
$ millions

Product line code	Product	Commercial banking (5221)	Investment banking (52311)	Securities brokerage (52312)	Investment management and advice (5239)	Total
Banking products		419,611	1,081	113	1,771	422,576
550	Loan income	324,557	1,081	113	1,771	327,522
552	Non-loan credit products	32,571				32,571
570	Deposit accounts	38,456				38,456
571	Cash management	21,783				21,783
572,573	Document payment products (i.e., cashier's checks, money orders) and retail forex	2,244				2,244
Securities products		88,021	89,880	100,472	100,428	378,800
Securities origination		4,353	11,680	2,362	357	18,754
5531	Public equity	3,400	5,256	1,556	177	10,389
5532	Public debt	849	5,085	584	109	6,627
5533	Private placement equity	13	630	84	69	796
5534	Private placement debt	92	709	138	2	942
Brokering and dealing		39,175	40,964	75,089	6,296	161,523
554	Debt instruments	29,429	8,932	12,199	1,427	51,988
556	Equity	1,723	27,948	51,474	3,502	84,647
557	Derivatives	6,324	3,758	2,615	543	13,241
559	Mutual funds	1,298	200	8,004	585	10,087
558, 560, 561	Other products (currency, commodity pools, correspondent products)	400	126	797	238	1,560
Proprietary trading		17,715	17,299	3,438	2,463	40,915
565	Debt instruments	12,675	11,950	552	556	25,733
566	Equities	905	2,104	658	850	4,518
567	Derivatives	2,739	2,636	2,112	313	7,800
568,569	Other	1,397	610	115	743	2,864
Trust, asset management, and financial planning		21,727	12,215	15,699	88,659	138,300
574	Trust fiduciary fees	14,098	135	116	10,559	24,909
577	Financial planning and investment management	7,629	12,080	15,583	78,100	113,391
5771	Businesses and governments	4,691	7,652	3,446	26,164	41,954
5772	Individuals	2,937	4,428	12,137	51,935	71,437
Other securities products		5,051	7,779	3,884	2,653	19,366
562 to 564	Financing related to securities (securities lending, repurchase agreements)	3,241	7,654	3,392	775	15,061
575,576	Financial market clearing products and ACH	1,810	125	493	1,878	4,305
Other products						
578	Other products	91,239	13,050	4,227	4,164	112,681
Total		598,871	104,011	104,812	106,363	914,057

Source: 2002 Economic Census

Table 4. Mutual fund industry fees, 2002 and 2004
$ millions

Fund family	Expense ratio revenue	Total net assets	Asset-weighted average expense ratio (basis points)	Market share
2002				
Fidelity	4,428	661,017	67.0	11.6%
Vanguard	1,446	572,428	25.3	10.1%
American funds	2,551	332,904	76.6	5.9%
Rest of industry	33,585	4,118,602	81.5	72.4%
Total	42,010	5,684,951	73.9	100%
2004				
Fidelity	6,369	908,075	70.1	12.3%
Vanguard	2,036	849,710	24.0	11.5%
American funds	5,178	650,119	79.6	8.8%
Rest of industry	43,024	4,993,043	86.2	67.5%
Total	56,608	7,400,947	76.5	100%

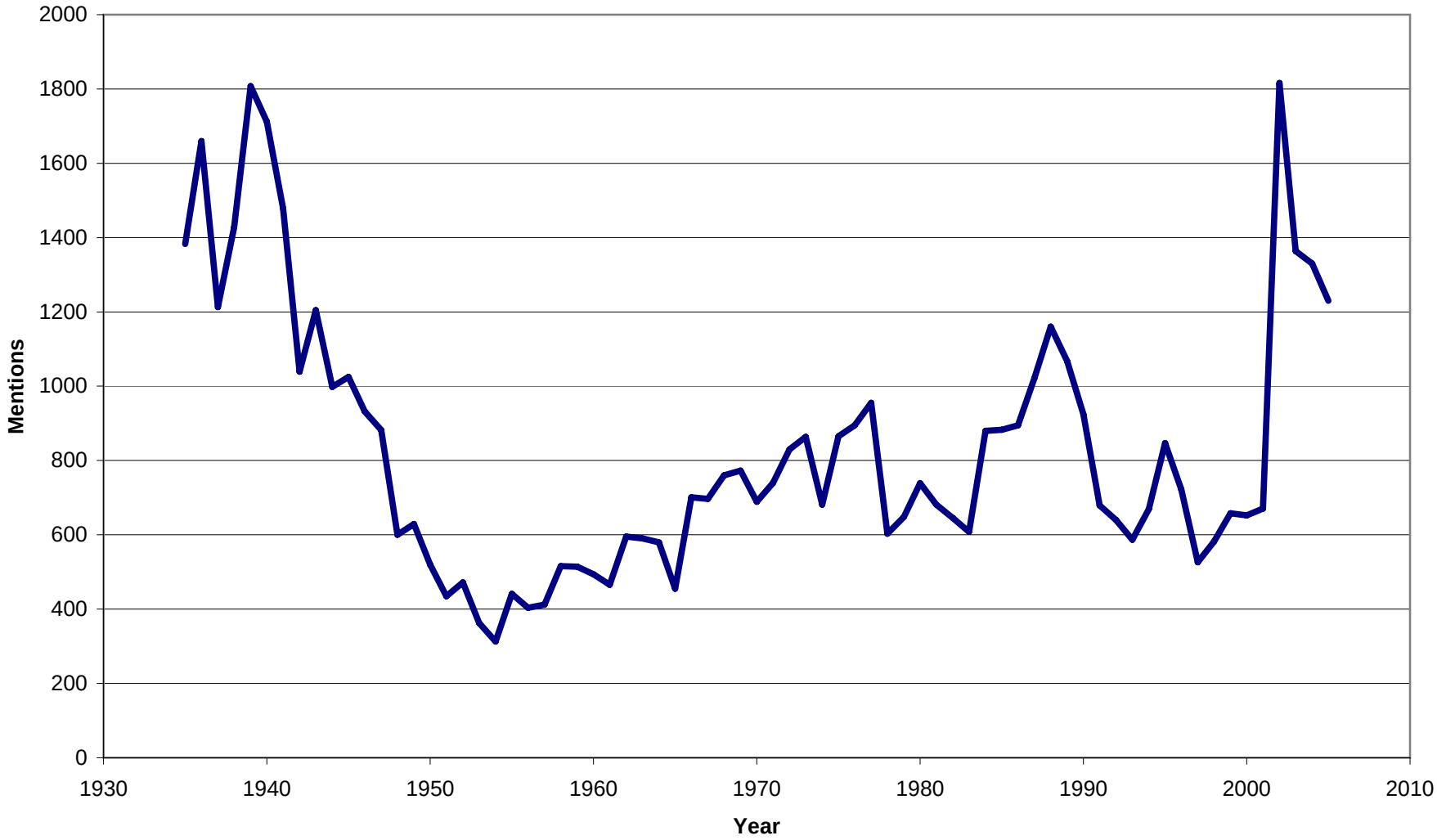
Notes:
1. Data is from the CRSP Survivor-Bias-Free US Mutual Funds Database
2. Total net asset figures are the latest quarter available in the quarterly attributes file. For 2004, about one-third of the data is from the third rather than the fourth quarter.
3. Expense ratio revenue is the expense ratio reported in the CRSP multiplied by total net assets.

Table 5. Minimum tick size, payment for order flow, and market making profits at Knight Securities
Cents per share

Year	Minimum Tick Size	Market maker trading revenue	Payment for Order Flow	Order flow payment share of revenue
1995	12.5	1.47	0.55	37%
1996	12.5	1.71	0.65	38%
1997	Reduced from 12.5 to 6.25 in June	1.45	0.37	26%
1998	6.25	1.03	0.21	21%
1999	6.25	1.04	0.17	16%
2000	6.25	1.03	0.16	15%
2001	1	0.32	0.06	19%
2002	1	0.15	0.03	22%
2003	1	0.09	0.01	15%

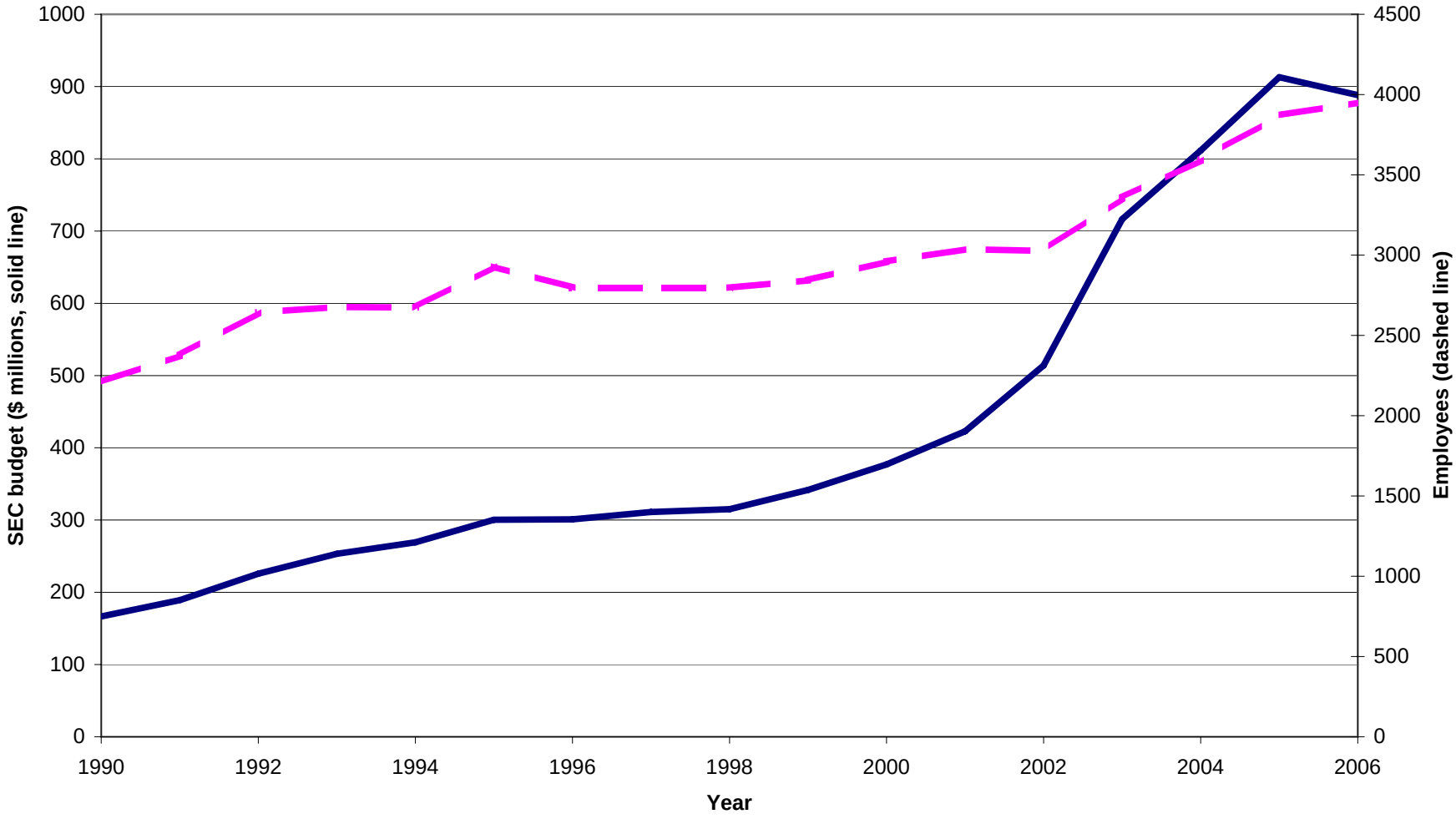
Source: Knight Securities S-1 and 10K statements.

Figure 1. Mentions of "Securities and Exchange Commission" in the *New York Times*



Note: Mentions for 2005 are annualized using data from the first half of the year.

Figure 2. SEC headcount and budget, 1990-2006



Note: Figrues for 2005 and 2006 are budgeted, not actual.