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Do Financial Institutions Matter?

by
Franklin Allen

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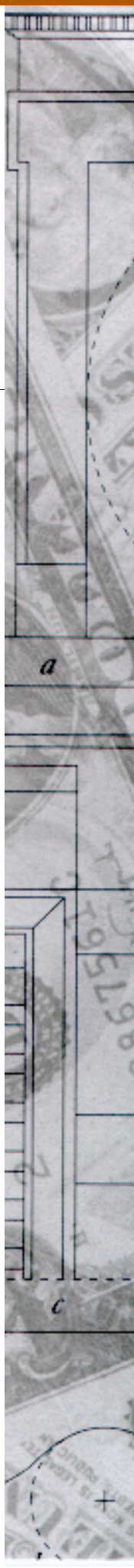

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DO FINANCIAL INSTITUTIONS MATTER?

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Abstract

In standard asset pricing theory, investors are assumed to invest directly in financial markets. The role of financial institutions is ignored. The focus in corporate finance is on agency problems. How do you ensure that managers act in shareholders' interests? There is an inconsistency in assuming that when you give your money to a financial institution there is no agency problem but when you give it to a firm there is. It is argued both areas need to take proper account of the role of financial institutions and markets. Appropriate concepts for analyzing particular situations should be used.

DO FINANCIAL INSTITUTIONS MATTER?

When I was an assistant professor my view on referees was that nine out of ten of them were complete idiots. They obviously had no idea what my papers were about or they wouldn't have rejected them. Fortunately the remaining one out of ten was astute and sometimes would actually recommend a revise and resubmit. Over the years I learned where the problem lay and it was not with the referees. By the time I was an editor my opinion on referees had been reversed and I realized how much they could contribute to a paper. Because of this I decided that for my Presidential Address, which is of course unrefereed, I would not simply talk about the latest research that I have been working on. If you want to read that see Allen and Gale (2000a). Instead I have decided to give a more general piece about why I work on the topics that I do and why I think they are important. I will develop many of the themes that Douglas Gale and I have worked on in recent years. Some time ago I lost track of what were his views and what were my views and they became mingled in my mind. He has not read what I will talk about and should not bear the blame for any deficiencies but should be credited with the good ideas.

I. An Inconsistency

Do financial institutions matter? To a lay person the answer might seem obvious. Most people have dealings with some kind of financial institution. In many countries this contact is primarily with banks and insurance companies. In some like the U.S. and U.K. it is increasingly with institutions such as pension funds and mutual funds. It would seem

that financial institutions do matter. However, such lay people might be surprised to learn that institutions play little role in financial theory. Last year's Papers and Proceedings issue of the *Journal of Finance* contained excellent surveys of asset pricing, continuous time finance and corporate finance (see Campbell (2000), Sundaresan (2000) and Zingales (2000), respectively). Financial institutions were only mentioned in passing, usually to say that they would be ignored.

The absence of financial institutions is particularly marked in the field of asset pricing, both in its discrete and continuous time forms. Risk-averse investors use their funds to buy financial assets directly in markets. The focus is on the relationship between risk and return. The justification for ignoring financial institutions is that they are a veil and have no real affect.

The focus of corporate finance is significantly different. Since Jensen and Meckling (1976) and Myers (1977) it has been on agency problems. One version focuses on equity holders putting their money in the hands of managers who decide how it should be spent. Another version considers the conflict of interest between bondholders and shareholders. The problem in both cases is to ensure that the people you entrust your money to act in your interests. The institution of the firm is the focus and it is not a veil.

This contrast between the two fields raises an important issue. How can it be that when you give your money to a financial institution there is no agency problem but when you give it to a firm there is? There is an inconsistency between the two fields. What I will argue is that the narrowness of the two paradigms that has lead to this inconsistency is a serious deficiency. Both need to take proper account of the role of financial

institutions and markets and use appropriate tools for analyzing particular situations. I will start with a discussion of asset pricing and then turn to corporate finance.

II. Asset Pricing

In the standard asset-pricing paradigm it is assumed investors directly invest their wealth in markets. While this was an appropriate assumption for the U.S. in 1950 when individuals directly held over 90% of corporate equities, or even in 1970 when they held 68%, it has become increasingly less appropriate as time has progressed (see Table I). By 2000 the proportion of directly held equities was down to less than 40%. There is clearly a potential agency problem when financial institutions control such a high proportion of stocks. For actively managed funds, the people that make the ultimate investment decisions are not the owners. Even for the stocks that are held directly by individuals there may be an agency problem. Rich people hold many of the shares owned by individual investors. It may be that when Bill Gates and his wife sit down at night after a hard day of work they figure out how they should allocate their portfolio. I somehow doubt it though. It would be surprising if this decision were not delegated. Among less wealthy investors it is common to seek professional advice. A recent study of equity ownership in the U.S. finds that 64% of investors rely on professional investment advice (ICI and SIA (1999), p. 7).

The U.S. is unusual in terms of the proportion of stocks owned by individuals. In other countries the figure for individual ownership is much lower. At the end of December 1999, it was 24% in France, 19% in Japan, 21% in the U.K. and 19% in Germany (Bank of Japan (2000), p. 17). In all these countries individuals play a very

limited direct role in equity markets. In other markets such as those for derivatives institutional investors predominate in all countries. It is financial institutions and non-financial corporations rather than individuals that are the significant players.

Asset pricing models are typically special cases of the neoclassical Arrow-Debreu model. Agency problems are not considered at all. In modern versions the key element of the analysis is the stochastic discount factor, which incorporates the Arrow-Debreu state prices and allows all assets to be priced. This approach and the focus on the risk return trade-off has allowed a rich interplay between empirical and theoretical work. Anomalies are uncovered and attempts are made to develop special cases within the Arrow-Debreu framework to explain them. Perhaps the best-known anomaly is the *equity premium puzzle*. The average return that stocks have earned over and above risk free assets is too high to be explained by standard models. The *size effect* documents that many small firms have had higher returns than models such as the Capital Asset Pricing Model would suggest. The *value effect* finds that returns are predicted by ratios of market values to accounting measures. Finally, the *momentum effect* documents that stocks that have done well in the recent past tend to subsequently outperform.

Attempts to explain these anomalies within the standard paradigm have assumed market incompleteness, transaction costs and other kinds of frictions (see Campbell (2000)). Although it is possible to come up with explanations for some of the anomalies, it has not been possible to convincingly account for all of them.

This has led many to reconsider the basic foundations of the neoclassical approach. As De Bondt and Thaler (1995; pp. 385-6) put it, "Modern finance replaces … realistic characterizations of human conduct with representative agent models in which

everyone … is assumed to be as smart as Sandy Grossman." In behavioral models of asset pricing the basic approach is the same as in the standard paradigm except some individuals are not rational in the usual neoclassical sense. They have non-standard preferences or do not process information properly. Arbitrage by rational agents is limited by some imperfection such as an agency problem (Shleifer and Vishny (1997)). Shleifer (2000) and Hirshleifer (2001) provide an excellent account of this literature.

One important issue in behavorial finance is whether such non-rational individuals can survive in the long run if there are other rational investors. DeLong, Shleifer, Summers and Waldman (1990, 1991) gave examples where they could. It remains an important question how general these results are. Sandroni (2000) and Blume and Easley (2000) have shown that such survival is not possible in a variety of cases.

Another possible critique of the behavorial approach is based on what Sandy Grossman actually did. He formed a hedge fund that allowed others to take advantage of his abilities for a fee. In a context where it is too costly or infeasible for some people to behave rationally a primary role of financial intermediaries is to allow investors to do better than they otherwise would.

Perhaps the most important question here though is whether the standard asset pricing anomalies are the most important or interesting. I would argue that they are not. I think that the most interesting asset pricing phenomena are "bubbles". The experience with internet stocks since the start of 1998 is a good illustration. By the end of March 2000 the CBOE Internet Index reached a peak of over seven times the level it had been at the beginning of 1998. By the end of 2000 it was down to about one and a half times that level (see Figure 1). At the peak the levels were extraordinary compared to any

discounted cash flows that the firms might have been expected to generate. In recent weeks it has been common in the press and other places to start referring to this sequence of events as the "internet bubble."

Is this a new phenomenon? No, bubbles have been around as long as assets have been traded. There are many classic examples and many stories that I could tell. I will restrict myself to my favorite and apologize to those of you who have heard it before.

Some of you may have stayed at the Palace Hotel right next to the Imperial Palace in central Tokyo. One of the things that I like to do when I stay there is jog around the Palace grounds. If you are slow like me it takes about half an hour. At the height of the Japanese bubble at the end of 1989 these few hundred acres of downtown Tokyo had a value the same as the whole of Canada! Now this is the American Finance Association so with apologies to those of you who are Canadian, I am sure that many in the room are thinking "Yes, but it's Canada. It may be the second largest country in the world but it's mostly cold and barren. It's not that surprising the Imperial Palace is worth the same." For such doubters among you another comparison that you may find more persuasive is that the Imperial Palace was worth the same as the whole of California (see Ziemba and Schwartz (1992), p. 109). The bursting of the bubble has had a devastating effect on the Japanese economy for over a decade. The highest priced real estate in Tokyo is now down to about a quarter of its value at the peak and prices are still falling (Japan Real Estate Institute (2000)). The collapse in real estate and stock prices has caused considerable problems for the Japanese financial system and its banks in particular. Growth in GDP has been significantly lower than in previous decades. Japan's "lost

decade" of the 1990's after the collapse of the bubble illustrates why bubbles are so important.

How can asset prices get so high? The standard asset-pricing paradigm has little to say about this. In fact there are many papers such as Santos and Woodford (1997) that suggest that within the paradigm bubbles can only arise in exceptional circumstances. However, there are many theories of bubbles with assumptions that lie outside the paradigm. Brunnermeier (2001) contains an excellent account of many of these theories.

My own view is that the most plausible explanation for many bubbles such as the one in Japan is the existence of agency problems in financial institutions. Since Jensen and Meckling (1976) it has been a standard argument in the corporate finance literature that debt financed firms will be prepared to accept negative net present value (NPV) projects. The reason is that the firm's shareholders obtain any upside potential but do not bear the downside risk because of limited liability. This can make risky negative NPV projects attractive. A similar argument can easily be developed in an asset pricing context. If the people making the investment decisions obtain a high reward when things go well and a limited penalty if they go badly they will be willing to pay more than the discounted cash flow for an asset. Many investment managers have this type of incentive scheme. They do well when returns are high but the worse that can happen is that they lose their job. Downside risk is limited just as with the corporate finance example. Risky assets become attractive, their prices are bid up and a bubble can occur. Allen and Gorton (1993) and Allen and Gale (2000b; 2000c – Ch. 9) develop formal models based on these ideas.

In addition to bubbles there is also the question of whether agency based asset pricing models can explain the standard anomalies. This literature is small but is growing. Brennan (1993), Cuoco and Kaniel (2000), and Arora and Ou-Yang (2000) provide analyses of this kind.

One important issue in this context concerns the nature of the agency problem between investors and investment managers. The standard agency problem considers incentives for effort. Its origin was the sharecropping problem. This is very different from the type of agency relationship that occurs with financial institutions. The essence of the problem in this case is that the principal does not have the expertise that the agent does. That is why the principal needs the agent. The reason people hire Sandy Grossman to manage their money for them is that he can do a better job than they can on their own. In fully developing the agency implications of asset pricing it is necessary to develop appropriate representations of the agency problem for this kind of context. Much more reliance must be placed on implicit contracts and reputation than in the standard problem. Agency models of this type are developed in Allen and Gale (1999; 2000c – Ch. 15).

So far I have been focussing on situations where asset prices appear to go too high. There also appear to be situations where they go too low. For example, in the Asian financial crises in 1997 asset prices fell rapidly to low levels. However, many of them quickly rebounded. How can such negative bubbles be understood? One of the important characteristics of financial crises is a shortage of liquidity. Allen and Gale (1998; 2000a) show that in such situations there can be "cash in the market pricing". Instead of being determined by the stream of future payoffs discounted at the opportunity cost, asset prices are determined by the amount of liquidity. If liquidity is scarce asset

prices will fall to a low level. The actions of the central bank and the role of the banking system become crucial.

The importance of liquidity can explain why financial crises have had such a large impact on asset prices in recent years. It is risks associated with events such as the Mexican crisis of 1994, the Asian crisis of 1997 and the Russian crisis of 1998 that have become crucial for understanding asset pricing. These risks are endogenous rather than exogenous. The operation of the global financial system is intimately tied up with the health of financial institutions. Because of the nature of financial institutions, events that are small in terms of their relation to the value of global assets can nevertheless spread and have a large effect on asset prices. These are the notions of *financial fragility* and *contagion* that historically played such an important role and are increasingly coming to be the center of attention (see Bordo (2000) for an historical overview, De Bandt and Hartmann (2000) for a survey and Allen and Gale (2000d) for an example).

The seminal work of Diamond and Dybvig (1983) provided a way to start thinking about financial crises. There have been many extensions of it and our understanding of financial crises has been considerably improved as a result. However, the relationship between financial crises and asset pricing is not yet well understood. In my view, advances in this area will involve incorporating financial institutions into asset pricing models.

III. Corporate Finance

Although I have predominantly talked about asset pricing I do want to say a few words on corporate finance before finishing. Unlike asset pricing corporate finance has

allowed some role for financial institutions. I shall argue that this focus is not always appropriate and other approaches may be more fruitful.

In Anglo-Saxon financial systems like the U.S. and U.K., it is usually argued that the market for corporate control solves agency problems between owners and managers. The threat of takeover and the subsequent firing of incumbent management ensure that managers work hard and pursue the interests of shareholders. In this version of the solution to the agency problem financial institutions have little role to play. However, until quite recently there was not a market for corporate control in many countries. For example, in Japan there have been no hostile takeovers in the last few decades. Franks and Mayer (1993) identify a total of three hostile takeovers in Germany between the mid 1940's and the early 1990's. The standard theory of the market for corporate control cannot be used in these countries. In order to explain how the agency problem is solved, the role of banks was stressed. Building on Diamond's (1984) theory of delegated monitoring, it was argued that banks in these countries had an incentive to monitor the actions of firms and ensure that they operated efficiently. In Japan this was known as the Main Bank system and in Germany as the Hausbank system. Empirical studies suggested these systems were important in solving the agency problem in times of financial distress but were less important when a firm was doing well.

However, as argued in Allen and Gale (2000c – Chs. 4, 11 and 12) this account of the role of financial institutions in ensuring good corporate governance is not entirely convincing. Toyota provides a good counterexample. It has arguably been one of the most successful firms in the world in the last few decades. Its products have captured a large market share in many countries. It has also performed well for shareholders. Since

1973 Toyota's shares have significantly outperformed the S&P 500 and the shares of General Motors, for example (see Figure 2). Conventional theories of corporate governance do not provide a good explanation for this success. With regard to internal governance mechanisms, Toyota's Board of Directors has sixty members of which only one is an outsider. As far as external mechanisms are concerned, it would not be possible to acquire a majority of shares to take Toyota over given the extensive cross shareholdings that exist. It has large cash reserves, currently of the order of $40 billion (Toyota Annual Report 2000, p.48). Given these reserves financial institutions and in particular banks have very little sway over it. Why then has it done so well? Allen and Gale (2000e) argue that it is other factors such as product market competition that are crucial in ensuring firms operate efficiently in countries like Japan. Hanazaki and Horiuchi (2000) have also provided empirical support that it is competition rather than bank monitoring that is important in Japan.

Although corporate finance sometimes takes account of financial institutions, this is not always the case. Risk management has traditionally been a corporate finance topic and an agency approach is often taken. The focus of the literature is to a large extent on the activities of non-financial firms. The standard view is that firms can increase value by managing risk through (i) improved managerial incentives; (ii) tax effects; (iii) reduction in bankruptcy costs; (iv) improved operation of internal capital markets. Allen and Santomero (1997; 2001) point out that financial intermediaries do much of the trading of derivatives and other securities for risk management. They argue that risk is being allocated to the places where it can best be borne by an imperfect set of markets.

The role of financial institutions and their interactions with financial markets are key in this process (see also Allen and Gale (2000a)).

IV. Financial Institutions and Markets

I have argued that financial institutions matter for asset pricing. This is both because they create an agency problem and because of their role in providing liquidity. If we are to understand the operation of financial systems we need to take both intermediaries and markets into account. We need to move away from the old view that asset pricing is all about risk sharing and corporate finance is all about agency problems. Both areas can usefully adopt part of the perspective of the other.

In conclusion, the answer to the question posed in the title is "yes, financial institutions do matter." What's more it's a good thing they do because our salaries are tied to compensation in those crucial financial institutions, investment banks!

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Table I

Holdings of Corporate Equities in the U.S. (in percent)

Sector	1950	1970	1990	2000
Private pension funds	0.8	8.0	16.8	12.9
State & local pension funds	0.0	1.2	7.6	10.3
Life insurance companies	1.5	1.7	2.3	5.4
Other insurance companies	1.8	1.6	2.3	1.1
Mutual funds	2.0	4.7	6.6	19.0
Closed-end funds	1.1	0.5	0.5	0.3
Bank personal trusts	0.0	10.4	5.4	1.9
Foreign sector	2.0	3.2	6.9	8.9
Household sector	90.2	68.0	51.0	39.1
Other	0.6	0.6	0.7	1.2
Total equities outstanding (billions of dollars)	142.7	841.4	3,542.6	19,047.1

Source: Federal Reserve Board "Flow of Funds" www.bog.frb.fed.us. Figures are end of period except for 2000 where the figures are for the third quarter.

Figure 1. The internet bubble. The relative movements of the CBOE Internet Index, NASDAQ and the S&P 500 are shown from 12/31/97-11/29/00. All indexes are normalized to 100 on 12/31/97. The thick line is the CBOE Internet Index, the intermediate line is NASDAQ and the faint line is the S&P 500.

Source: Commodity Systems, Inc.


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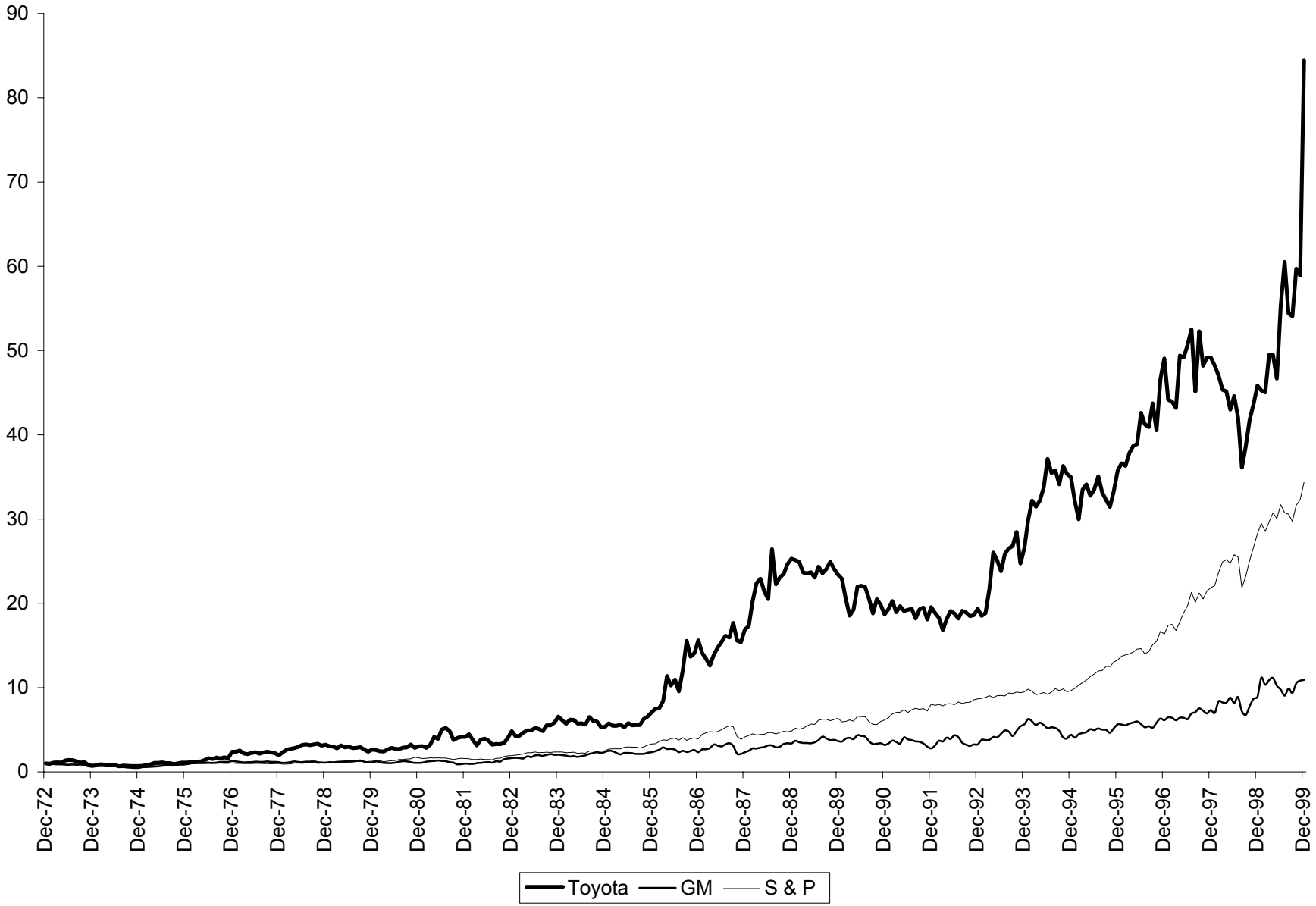
CBOE Internet Index
NASDAQ
S & P

Figure 2. The relative performance of Toyota's stock. The return from investing $1 on 12/31/72, holding and reinvesting dividends until 12/31/99 are shown. The thick line is Toyota, the intermediate line is the S&P 500 and the faint line is General Motors.

Source: CRSP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