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How Big Is Too Big?
On the Social Efficiency of the Financial
Sector in the United States

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PREFACE

This working paper is one of a collection of papers, most of which were prepared for and presented at a festschrift conference to honor the life's work of Professor Thomas Weisskopf of the University of Michigan, Ann Arbor. The conference took place on September 30 - October 1, 2011 at the Political Economy Research Institute, University of Massachusetts, Amherst. The full collection of papers will be published by Elgar Edward Publishing in February 2013 as a festschrift volume titled, *Capitalism on Trial: Explorations in the Tradition of Thomas E. Weisskopf*. The volume's editors are Jeannette Wicks-Lim and Robert Pollin of PERI.

Since the early 1970s, Tom Weisskopf has been challenging the foundations of mainstream economics and, still more fundamentally, the nature and logic of capitalism. That is, Weisskopf began putting capitalism on trial over 40 years ago. He rapidly established himself as a major contributor within the newly emerging field of radical economics and has remained a giant in the field ever since. The hallmarks of his work are his powerful commitments to both egalitarianism as a moral imperative and rigorous research standards as a means.

We chose the themes and contributors for this working paper series, and the upcoming festschrift, to reflect the main areas of work on which Tom Weisskopf has focused, with the aim of extending research in these areas in productive new directions. The series is divided into eight sections, including closing reflections by our honoree himself, Professor Weisskopf. Each section except for the last includes comments by discussants as well as the papers themselves.

The eight sections are as follows:

1. Reflections on Thomas Weisskopf's Contributions to Political Economy
2. Issues in Developing Economies
3. Power Dynamics in Capitalism
4. Trends in U.S. Labor Markets
5. Discrimination and the Role of Affirmative Action Policies
6. Macroeconomic Issues in the United States
7. Applications of Marxist Economic Theory
8. Reflections by Thomas Weisskopf

This working paper is 1 of 3 included in Section 6.

- Jeannette Wicks-Lim and Robert Pollin

How Big Is Too Big?

ON THE SOCIAL EFFICIENCY OF THE FINANCIAL SECTOR IN THE UNITED STATES¹

Gerald Epstein and James Crotty

INTRODUCTION

By almost any measure, the size of the financial sector in the United States, and in many parts of the world, exploded over the past several decades, prior to the financial crash of 2008.² In the aftermath of the crisis, many analysts, some in surprisingly high positions of authority in the world of financial governance, have argued that the financial sector has grown too big, that many of its activities have little, or even negative social value, and that the productivity and efficiency of the world economy could be improved if the financial sector were to shrink. Lord Adair Turner, Chairman of the United Kingdom's Financial Services Authority remarked in an interview with *Prospect Magazine* and then in a speech in September, 2009, "...not all financial innovation is valuable, not all trading plays a useful role, and that a bigger financial system is not necessarily a better one." (Turner, Mansion House Speech, 2009). Turner later defended his *Prospect Magazine* remarks saying, "...I do not apologise for being correctly quoted as saying that while the financial services industry performs many economically vital functions, and will continue to play a large and important role in London's economy, some financial activities which proliferated over the last ten years were 'socially useless', and some parts of the system were swollen beyond their optimal size." (ibid.) Paul Volcker was more blunt. He reportedly told a room full of bankers, "I wish someone would give me one shred of neutral evidence that financial innovation has led to economic growth — one shred of evidence," said Mr. Volcker (*Times of London*, 2009).

Despite this general and, one might add, increasingly widespread view of the bloated state of the financial sector, until now, there has been relatively little research which has tried to analytically frame and carefully estimate the extent of "unproductive" finance and to estimate the dimensions of financial bloat and its impacts. More recently, though, some economists have been trying to study the topic.³

How socially efficient is the financial sector? That is, does the financial sector provide socially useful services commensurate to the economic resources taken up by it? If not, how should we cut the financial sector down to size? In other words, how big is too big? These are all very important questions, not only theoretically and empirically, but also have important implications in terms of economic policy. For example, the financial transactions tax (FTT) is on the policy agenda in Europe, the U.S. and elsewhere. The financial industry has opposed the tax arguing that it would reduce the size of the financial sector below its optimal level and hinder useful financial innovation.

Most financial reform legislation, including the Dodd-Frank legislation recently passed in the United States call for increased capital and liquidity requirements for investment and commercial banks that may shrink the size of the sector relative to what it would be otherwise. Bankers and others have expressed concern that these need to be levied in such a way as to preserve "international competitiveness" of the financial sector, and to prevent activities from going "offshore." But if, at the margin, the financial sector is not socially efficient, then a "lack of competitiveness" which causes the sector to shrink is not socially harmful. Others have called

for significant restrictions on the level or form of banker pay in order to generate more fairness and to reduce excessive risk incentives. (Crotty and Epstein, 2009a; Crotty, 2009). Critics have responded that these actions might lead to “banker brain drain”—the movement of the most highly paid bankers abroad. Here again, this is of particular social concern only if the activities of these highly paid bankers are making a significant social contribution. The answers to the questions posed above are obviously relevant to these key policy issues.

The question of the appropriate size, scope and operations of the financial sector from the point of view of social efficiency is obviously a massive one. In this chapter, we present some initial conceptual and empirical work, focusing on the United States in the post-World War II period. We humbly present our empirical work in the spirit of the creative, careful, and important conceptual and empirical work carried out by Tom Weisskopf (see the other chapters of this volume) and hope, eventually, to honor that work in future iterations of our own work.

In what follows we will first offer some initial definitions with regard to the social productivity of the financial sector. In section III we will present a broad overview of the growth of the financial sector in the last several decades and briefly review some literature that has raised questions about the social value of its role. Section IV presents some initial estimates of the social productivity of the financial sector in the U.S. and concludes that despite its declining social productivity, the rate of income extraction by the financial sector in the U.S. has been rising. We then identify other possible contributions of the financial sector that could account for this increase in the rate of income extraction. These include liquidity provision, financial innovation, and market making. We provisionally conclude that these are theoretically flawed or empirically inadequate to explain the apparent social inefficiency of the financial sector in the U.S. In the penultimate section we turn to a possible explanation for the increase in the rate of income extraction: the trading, gambling and speculative activities of investment banks. More specifically, we study the sources of income of large investment banks and show that at the height of the bubble, as much as 60 or 70 percent of some investment banks’ incomes derived from trading activities. In light of our discussion of liquidity provision and market making, we suggest that there is no strong theoretical reason to believe these activities are socially efficient. We conclude in section VII.

A SOCIALLY PRODUCTIVE FINANCIAL SECTOR? INITIAL DEFINITIONS

We begin with James Tobin’s important essay, “On the Efficiency of the Financial Sector” first published in Lloyd’s Bank Review in 1984 and reprinted in *Essays in A Keynesian Mode* (Jackson, 1987). One of Tobin’s concepts of efficiency is especially relevant here: the concept of *functional efficiency*.

“...the economic functions of the financial industries include: the pooling of risks and their allocation to those most able and willing to bear them...the facilitation of transactions by providing mechanisms and networks of payments; the mobilization of saving for investments in physical and human capital... and the allocation of saving to their more socially productive uses. I call efficiency in these respects *functional efficiency*...I confess to an uneasy Physiocratic suspicion, perhaps unbecoming in an academic, that we are throwing more and more of our resources, including the cream of our youth, into financial activities remote from the production of goods and services, into activities that generate high private rewards disproportionate to their social productivity.” (Tobin, 1987).

Tobin’s concept of *functional efficiency* is thus one way to frame a discussion of the roles the financial sector has been playing in recent decades.

Though it might be a useful starting point, Tobin's taxonomy of different types of financial efficiency is itself problematic. Tobin suggests that the financial sector at worst can be unproductive. But a broader perspective, based in different ways on the works of Karl Marx and Hyman Minsky, would suggest that the financial sector can have more sinister impacts: that it can engage in exploitation and also destroy value. We have certainly seen evidence for this in the sub-prime lending that stripped households of much of their wealth, and in the costs of the Great Recession which Haldane (2010a), for example, has estimated will cost the world somewhere between \$60 and \$200 trillion.

In what follows, we first present some basic data that show how dramatically the finance sector has grown in recent decades to place the issue of "financial bloat" in an empirical context. Then we move on to a set of measures designed to shed light on the functional efficiency of the financial sector.

BRIEF OVERVIEW OF RECENT TRENDS IN THE SIZE OF THE FINANCIAL SECTOR

No matter how the size of the financial sector with respect to the rest of the economy is measured, the trend of massive growth is obvious. The financial sector's total financial assets grew from about one-third of total assets in the U.S. economy during the post-World War II decades to 45 percent of total assets by 2010. The value of the financial sector assets was approximately equal to the U.S. Gross Domestic Product (GDP) in the early 1950s, whereas now it amounts to 4.5 times the U.S. GDP. Financial sector profit has grown from about 10 percent of total domestic profits in the 1950-60s to 40 percent in the early 2000s.

This massive rise in the financial sector as a whole is accompanied by a dramatic rise in some of its segments. Investment banking has drawn special attention during the 2007 - present crisis because these financial institutions were at the heart of creating the new financial products that triggered the crisis. Financial assets of the securities industry, which includes investment banks, amounted to a constant 1 percent of total financial sector financial assets from 1945 until the early 1980s. After that, they rose five-fold and reached the level of 5 percent of the total financial sector financial assets by 2008. Their rise as a share of GDP has been even more pronounced – from 1.5 percent in the post-World War II decades to 22 percent in 2007. Other measures of the size of the securities industry in the U.S. produce even larger figures, with the securities industry's total assets reaching 45 percent of GDP in 2007.⁴

How much of this increase in the size and share of the U.S. financial sector is socially efficient? What does it contribute to the functioning of the U.S. economy? These are questions to which we turn next.

ESTIMATES OF THE CONTRIBUTION OF THE FINANCIAL SECTOR TO THE REAL SECTOR IN THE US⁵

Broad contribution of the financial sector in the US

There are two broad approaches to answering the question of the social efficiency of the financial sector: one is to look at the role of finance from the point of view of the activities of the financial sector; the other is to look at the role of finance from the perspective of the real sector. Here, we present work from the perspective of the real sector. Next, we combine the two by looking at the income extracted by the financial sector

for the services it provided to the real sector. As above, we focus on the United States. In future work we plan to expand this analysis to other OECD countries.

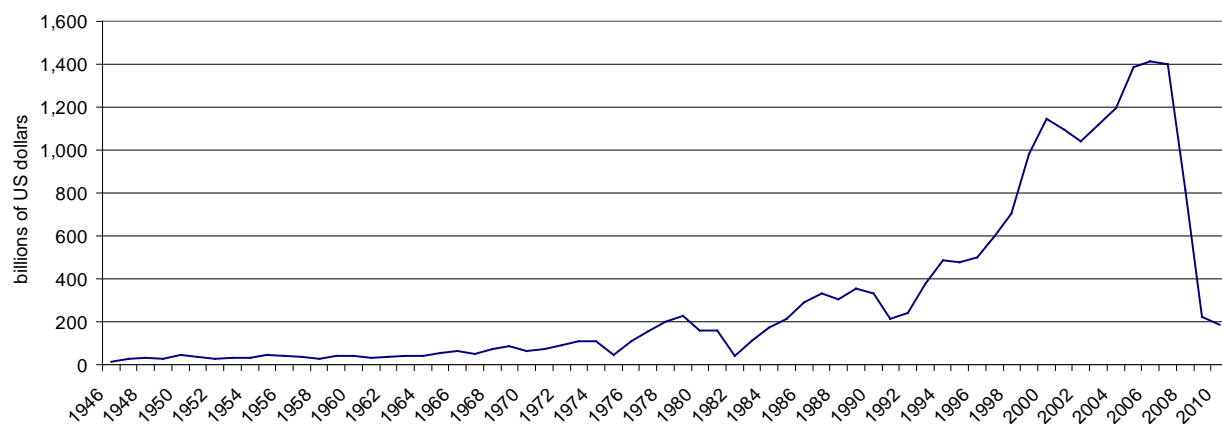
The financing gap

We begin by looking at the “financing gap” of broad sectors of the U.S. economy. The “financing gap” measures the extent to which different sectors of the economy depend on external finance as opposed to financing with internal savings. We assess how this dependence has evolved over the post-World War II period. We then look at the degree to which the financial sector has been able to extract returns for supplying the credit needed to fill these financing gaps.

Lack of space prevents us from presenting data on the sectoral evolution of the financing gap, but we will briefly summarize the results here. Using flow of funds data, we observe three simultaneous trends. First, the non-financial corporate sector reduced its use of external finance over the period in relation to its capital expenditures. At the same time, households moved from being net lenders to the financial sector to being net borrowers, largely to finance the purchase of homes and durable consumer goods. Third, governments (federal, state and local) increased their dependence on the financial sector for financing their capital expenditures. These trends illustrate a problematic shift of financial activity away from productive investment to lending services that fuel asset-bubbles, such as in the housing market. We explore this shift from various angles in what follows.

Figure 1 below shows the evolution of the total non-financial sector financing gap from 1946 –2010, excluding the federal government (we introduce the federal government’s financing gap below).

Figure 1. Total U.S. Non-Financial Sector Financing Gap, billions of U.S. Dollars, 1946 – 2010 (measure excludes the federal government)

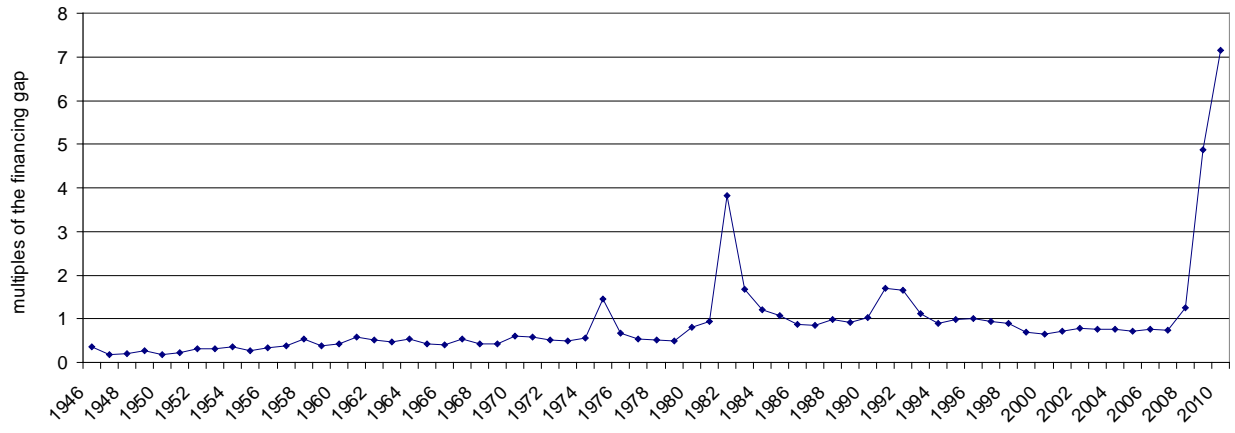


Source: calculations based on the Flow of Funds

A surge in mortgages and financing for consumer durables by households explain the great bulge in the financing gap in the later periods. This occurred despite the stagnating demand among non-financial corporations, apart from a brief increase in the late 1990’s due largely to mergers, acquisitions and stock buy-backs.

Next we turn to an analysis of the income extracted by the financial sector and compare it with the roles the financial sector plays vis-a-vis the real economy.

Figure 2. *Gross Value Added of Financial Corporate business relative to the Financing Gap*



Source: calculations based on the Flow of Funds and NIPA, Table 1.14

Figure 2 is the ratio of two variables. The first is the gross value added of the financial sector, i.e., the wages and profits received by the financial sector. This is the amount of income the financial sector extracts from the economy. This is divided by the financing gap which, as we saw above, is a measure of the services provided by the financial sector. So the ratio, which is shown in the graph, is a measure of the income extracted by the financial sector, relative to the services it provides (see Philippon, 2011 for a related analysis).

Table 1 presents these data averaged roughly by decade from 1946 to 2010. They indicate that the financial sector has extracted more income relative to the financing it provides to the real sector over the post-war period. In particular, for every dollar of financing gap the financial sector received on average 30 cents in 1946-1959 and \$1.09 in 1990s and \$1.74 in the 2000s. This analysis suggests that the financial sector may be as much as four times as large--relative to the booming 1960's--as required for financing real economic activity.

Table 1. *Gross Value Added of Financial Sector relative to Financing Gap*
(measure excludes the federal government)

| | simple decadal average |
|-----------|------------------------|
| 1946-1959 | 0.30 |
| 1960s | 0.47 |
| 1970s | 0.64 |
| 1980s | 1.32 |
| 1990s | 1.09 |
| 2000-2010 | 1.74 |

Source: See figure 2

Simply inverting the data presented in Figure 2 and Table 1 provides a gauge of the financial sector’s “productivity,” i.e., the amount of financing gap per dollar of value added extracted by the financial sector. Productivity clearly declined over the post-war period, with a significant drop off occurring during the 2000’s.

Table 2 shows that for the same total revenue (value added), the financial sector services a declining share of financing gap. In particular, for each \$1 of revenue, the financial sector financed on average \$4-\$6 financing gap after the World War II and financed only \$1 of financing gap since 1990.

Thus far we have left the federal government out of the analysis. To be sure, the domestic financial sector has served a role of partially financing the federal budget deficit. However, the matter is complicated by the fact that the federal budget deficit is also financed by the Federal Reserve System and increasingly by foreigners. Moreover, much of the Federal debt is not intermediated by the financial sector but is bought directly by households. For all these reasons, our including the entire federal budget deficit is problematic for estimating the rate of income extraction (and productivity) by the financial sector. Still, to look at the outer range of the impact of including the Federal Budget, we present it below.

When we add the role of federal government borrowing, it changes the quantitative dimensions but not the qualitative dimensions of the analysis. Here we present the decadal averages.

Table 2. Income Extraction by the Financial Sector Relative to Financing Gap (including the federal government financing gap)

| | simple decadal average |
|-----------|-------------------------------|
| 1946-1959 | 0.31 |
| 1960s | 0.44 |
| 1970s | 0.46 |
| 1980s | 0.60 |
| 1990s | 0.73 |
| 2000-2010 | 0.66 |

Source: See Figure 2

According to these data – which we suggested above is probably an underestimate of the income extraction ratio – we still find that the rate of income extraction by the financial sector relative to the financing gap has doubled since the early post-war period. In this case, for every dollar of financing gap the financial sector received on average 30 cents in the 1950s and almost 70 cents in the 1990-2000s.

As before, we can look at the mirror image of the amount resources extracted per dollar of finance gap supplied, by looking at the productivity of the financial sector (not shown here for reasons of space). These data suggest a decline in the “productivity” of the financial sector: for a \$1 of revenue, the financial sector financed on average \$3-\$5 financing gap after the World War II and only \$1.5 financing gap since 1980.

DARK MATTER: LIQUIDITY PROVISION, FINANCIAL INNOVATION, MARKET MAKING AND THE RATIONALE FOR INCOME EXTRACTION BY THE FINANCIAL SECTOR

Of course, the financial sector provides services other than direct provision of credit. These include liquidity provision, risk sharing, provision of information and monitoring, market making and innovation in all these activities. Any analysis of the impact of finance – and explanations for income extraction by the financial sector - must take these roles into account as well.

Estimating the social contributions of all these activities is not easy. This leaves this terrain ripe for self-serving assessment and interpretation. For example, economists of various stripes and defenders of the status quo in financial regulation and structure have identified a number of presumed contributions of the financial sector to the real economy that are not easily captured by statistics. . These are akin to debates over “dark matter”: contributions that are there but not easy to detect. These include “liquidity provision”, “market making” and benefits of “financial innovation”.

We briefly summarize some key points in what follows.

Liquidity provision

The mainstream economics literature has developed this concept of liquidity in vague and contradictory ways. Basically, providing liquidity means making the trade of financial assets relatively immediate and low cost. Mainstream economists argue that providing liquidity helps determine the value of an asset (i.e., “price discovery”) because each trade provides information about what buyers are willing to pay—and what sellers are willing to accept—for an asset. As these trades take place, the price of the asset should converge to a price that equates the buyers’ level of demand to the sellers’ supply level—an “equilibrium price” that represents the asset’s true value. If this were the case, liquidity provision would be a good thing.

But there is a key flaw in this literature that renders the liquidity-based justifications for financial sector activities highly suspect: this justification depends on the assumption of the existence and “knowability” of the fundamental value of financial assets. This is an assumption that is incorrect (and of course, is inconsistent with a Keynesian or Minskian approach to understanding financial markets) in a world of fundamental uncertainty that characterizes all modern economies. In this world, liquidity provision is a more complex and dynamic activity, and indeed, leads to “price creation” rather than price discovery. That is, the activities of financial institutions do not simply provide the liquidity that financial markets need to determine the true value of assets, their activities directly influence what the price will be. In this world, liquidity provision can contribute to a run-up in the price of an asset creating an asset price bubble. Then, inevitably, some event causes liquidity to dry up and the bubble to burst, triggering a massive freefall (or even non-existence) of asset prices. This is, in fact, what occurred for some assets of the global financial services firm, Lehman Brothers Holdings, Inc., during the 2008 financial crash.

Thus, the pathway to understanding the social efficiency of liquidity provision is to ask: liquidity provision for what? This is a question that is rarely asked in the mainstream literature because of the assumption that liquidity provision assists in “price discovery.” The alternative perspective naturally leads to a distinction between “good liquidity” and “bad liquidity” creation mechanisms. In this regard, an analysis of the social effi-

ciency of “liquidity provision” would look at the types of financial products created and traded and what their social impacts are. Price discovery cannot simply be assumed as the obviously “good” outcome.⁶

If one then considers the type of liquidity provision that grew in the last decade, how it contributed to the financial bubble and then dried-up after the Lehman collapse, it is difficult to argue that socially useful liquidity provision by the financial sector can explain the large increase in the rate of income extraction by the financial sector (or conversely the decline in financial sector “productivity”) in the recent decade or so.

Market making

As we discuss in the next section, market making—the buying and selling financial instruments for the purpose of facilitating trade by others—is indeed a major activity of some of the biggest players in the financial sector. The mainstream literature once again assumes that market making is a socially efficient activity of “intermediaries” who bring together buyers and sellers and makes voluntary trades possible more cheaply. This view, however, assumes that investment banks and other financial institutions act as passive intermediaries, as in the case of price discovery. In fact, financial firms engage actively in creating and marketing financial products *and then* search for buyers and sellers.

A good example of what we have in mind is how Citibank and Goldman Sachs created and marketed collateralized debt obligations (CDOs) that were designed to fail and then took out bets against these products. Here, then, “market making” as actually practiced is not a neutral, intermediary action but is a market creation activity that must be judged on the merits of the types of markets created.⁷ Here too, the recent history of financial products sold and markets made – the CDOs and credit default swaps (CDSs) that helped to crash the system – raise serious questions about whether the social productivity of such trading can account for the rise of the rate of income extraction received by the financial sector in recent decades.

The social efficiency of financial innovation

Bankers often fight against financial regulation by arguing that regulations will stifle innovations. What is the functional efficiency of financial innovations? What is the impact of these financial innovations on the real economy? As a theoretical matter, there is no presumption that more financial innovation contributes to higher social welfare. Mathematical models created to demonstrate how financial innovation operates in an economy have shown that, in principle, they can either increase or decrease social welfare (Elul, 1995; Frame and White, 2004).

While mainstream authors discussed above have touted the social benefits of financial innovation, heterodox economists have taken a more critical stance toward them. Crotty shows in great detail the destructive nature of many of these “innovations” and how their existence deliberately made price discovery harder, and made financial products more difficult to understand. Doing so enabled those creating these new financial instruments to generate even more revenue than would be the case if buyers and sellers better understood the products they were trading. This flies in the face of the justifications for innovation based on efficient markets theory (see Crotty 2008 and 2010).

Empirically, there has been very little evidence provided on these key questions. Lerner (2006) does find that financial innovation raises the profits of the innovating financial firm, at least in the short run. But what about

social impacts? Frame and White (2004) published a comprehensive survey of the determinants and effects of financial innovation. As their paper shows, there has been relatively little study of financial innovation. As a result, there is virtually no evidence that financial innovations contribute to a lower cost of capital, more investment, or higher rates of economic growth. Indeed, in light of the enormous costs associated with the current crisis, we have a great deal of emerging evidence on the high costs associated with some financial innovations.

Micro-level data

Whereas the studies cited above refer mostly to macro-level (i.e., economy-wide) data, there is interesting micro-level (i.e., firm-based) data that can be used to assess the nature of financial innovation.

In the most comprehensive studies to date, John D. Finnerty and his colleague Douglas Emery created a list of securities innovations organized by type of instrument and function/motivation of the issuers. The types of instruments studied include: debt, preferred stock, convertible securities, and common equities (Finnerty 1988, 1992, 2002). Finnerty's initial study (1988) dealt with both consumer and corporate financial innovations and listed eleven motivations/functions: (1) Tax advantages, (2) reduced transaction costs, (3) reduced agency costs (4) risk re-allocations, (5) increased liquidity, (6) regulating or legislative factors, (7) level and volatility of interest rates, (8) level and volatility of prices, (9) academic work, (10) accounting benefits and (11) technological developments. In his later work, Finnerty reduced the functions to six: (1) reallocating risk, (2) increasing liquidity, (3) reducing agency costs, (4) reducing transactions costs, (5) reducing taxes or (6) circumventing regulatory constraints. One should add two other motives: first, firms have a motive to create a proprietary innovation that is complex and murky enough to give it proprietary advantages for at least an initial period of time (Tufano, 2002; Das, 2006). We will call this (7) the "proprietary" or "redistributive" motive. An eighth motive, implicitly proposed by James Tobin, is to open new ways to gamble on trends or to limit losses when such gambling occurs. We will call this the (8) "gambling motive." Clearly, many of these have nothing to do with reducing transactions costs or increasing social efficiency.

Table 3, taken from Crotty and Epstein (2009b) uses the three Finnerty studies to calculate that number and percentage of innovations that are at least partly motivated by tax, accounting and/or regulatory "arbitrage" or "evasion." Our estimates reveal that roughly one-third of these "innovations" are motivated by these factors, rather than simply efficiency improvements. This estimate, in fact, is almost certainly a gross underestimate of innovations motivated by tax and regulatory arbitrage, since Finnerty and Emery presented a selected set of innovations which they suggested would have "staying power" due to their "addition to value." Their list is not anywhere near a complete list of new types of securities.

Table 3. Financial "Innovations" Motivated by Tax or Regulatory Evasion

| Study | Total number of security innovations (1) | Number motivated at least partly by tax or regulatory reasons (2) | Percentage of total innovations motivated by tax or regulatory reasons (2)/(1) x 100 (%) |
|--------------------------|---|--|---|
| Finnerty, 1988 | 103 | 45 | 44 |
| Finnerty, 1992 | 65 | 21 | 34 |
| Finnerty and Emery, 2002 | 80 | 25 | 31 |

Sources: Finnerty, 1988; Finnerty, 1992; Finnerty and Emery, 2002 and authors' calculations. (Crotty and Epstein, 2009b)

We believe that the data in Table 3 are likely to be an underestimate of the socially inefficient share of financial innovations because these data do not look at the actual impact of these innovations. For example, these data do not capture the destructive effect of CDOs and CDSs since it is an accounting exercise with respect to what motivated the innovations, rather than a study of their actual effects. The latter will have to wait for future research.

WHAT DOES FINANCE'S INCOME DERIVE FROM? A CASE STUDY OF U.S. INVESTMENT BANKS⁸

So how is finance managing to extract so much income relative to the apparent services it is providing to the real economy? This is, of course, a very difficult, highly complex question. But to begin to answer it, we “follow the money.” That is, we look at the income accounts of major investment banks in the U.S. and ask what activities have generated their incomes? This is of particular interest given that investment banks were at the heart of the recent crisis.

Specifically, we will look into the composition of the revenue-generating activities of investment banks and how this composition changed over time. The composition of investment banking revenues can proxy for the composition of activities investment banks perform. Growing components of revenue should reflect the types of activities accounting for the overall growth in investment banking business.

Investment banking is a highly concentrated industry with the top five investment banks receiving up to 65 percent of total revenues. Because of this, the revenue structure of the top five investment banks should give us important information about the activities of the investment banking industry, at least in the large-bank segment.

Functional efficiency of investment banking: trading vs. non-trading activities

Of course, it is very difficult to identify all the activities undertaken by investment banks that are socially useful versus those that are not. But as a first approximation, we will identify trading and trading-related activities, versus non-trading activities which would typically include market making activities, hedging (i.e., trades made for the purpose of reducing risk) and other asset management services for customers. These are distinctions that very roughly parallel the notions of “proprietary trading” vs. hedging, market-making activities and asset management as defined in the Dodd-Frank Act. But as noted above, “market making” during some periods primarily facilitated the creation and selling of highly speculative and ultimately destructive products.

We construct a data set for the five largest investment banks for 2006-2008. To show the evolution of the structure of investment bank activities, we need to compare these measures to an earlier time period. The tables below present the results of our calculations of trading as a share of net revenues for the five largest U.S. investment banks.

Take, for example, Goldman Sachs. In 2008, trading income as a share of net revenue was, according to our figures, about 56 percent. But if one goes back to the boom years of 2006, it was nearly three-quarters of net revenue, or 74 percent.

Table 4. Trading vs. Non-Trading Activities: Five Large US Investment Banks

| a. Goldman Sachs (GS) | | | | | | | |
|---|-------------|-------------|-------------|-----|-------------|-------------|-------------|
| millions \$ | 1998 | 1999 | 2000 | ... | 2006 | 2007 | 2008 |
| Commissions | 1,368 | 1,522 | 2,307 | | | | |
| Trading and principal investments | 2,379 | 5,773 | 6,627 | | 25,562 | 31,226 | 9,063 |
| Securities services | 730 | 772 | 940 | | 2,180 | 2,716 | 3,422 |
| Net revenue | 8,520 | 13,345 | 16,590 | | 37,665 | 45,987 | 22,222 |
| “Trading” as a share of net revenue, % | 52.5 | 60.4 | 59.5 | | 73.7 | 73.8 | 56.2 |

Note. Trading = commissions + trading and principal investment + securities services, for 1998-2000, and Trading = trading and principal investment + securities services, for 2006-2008, due to a change in methodology.

| b. Morgan Stanley (MS) | | | | | | | |
|---|-------------|-------------|-------------|-------|-------------|-------------|-------------|
| millions \$ | 1994 | 1995 | 1996 | | 2006 | 2007 | 2008 |
| Commissions | 874.3 | 1,022.5 | 1,163.1 | | 3,770 | 4,682 | 4,463 |
| Principal transactions | 421.9 | 478.9 | 449.3 | | 13,612 | 6,468 | 1,260 |
| Other | 101.9 | 93.5 | 107.8 | | 545 | 1,161 | 6,062 |
| Net revenue | 5,554.1 | 6,419.6 | 7,462.4 | | 29,799 | 27,979 | 24,739 |
| “Trading” as a share of net revenue, % | 25.2 | 24.8 | 23.1 | | 60.2 | 44.0 | 47.6 |

Note. Trading = commissions + principal transactions + other.

| c. Bear Stearns (BSC) | | | | | | | |
|--|-------------|-------------|-------------|-------|-------------|-------------|-------------|
| millions \$ | 1993 | 1994 | 1995 | | 2005 | 2006 | 2007 |
| Commissions | 421 | 483 | 547 | | 1,200 | 1,163 | 1,269 |
| Principal transactions | 1,157 | 1,134 | 860 | | 3,836 | 4,995 | 1,323 |
| Net revenue | 2,143 | 2,417 | 2,075 | | 7,411 | 9,227 | 5,945 |
| “Gambling” as a share of net revenue, % | 73.6 | 66.9 | 67.8 | | 68.0 | 66.7 | 43.6 |

Note. Trading = commissions + principal transactions.

| d. Lehman Brothers (LEHM) | | | | | | | | | |
|---|-------------|-------------|-------------|-------------|-------------|-------|-------------|-------------|-------------|
| millions \$ | 1989 | 1990 | 1991 | 1992 | 1993 | | 2005 | 2006 | 2007 |
| Commissions | 1,858 | 1,508 | 1,649 | 1,677 | 1,316 | | 1,728 | 2,050 | 2,471 |
| [Market making and] principal transactions | 1,269 | 1,199 | 1,696 | 1,697 | 1,967 | | 7,811 | 9,802 | 9,197 |
| Net revenue | 4,892 | 4,016 | 4,905 | 5,426 | 5,218 | | 14,630 | 17,583 | 19,257 |
| “Trading” as a share of net revenue, % | 63.9 | 67.4 | 68.2 | 62.2 | 62.9 | | 65.2 | 67.4 | 60.6 |

Note. Trading = commissions + [market making and] principal transactions.

| e. Merrill Lynch (MER) | | | | | | | |
|---|-------------|-------------|-------------|-------|-------------|--------------|--------------|
| millions \$ | 1991 | 1992 | 1993 | | 2006 | 2007* | 2008* |
| Commissions | 2,166 | 2,422 | 2,894 | | 5,985 | 7,284 | 6,895 |
| Principal transactions | 1,906 | 2,166 | 2,920 | | 7,248 | -12,067 | -27,225 |
| Other | 340 | 281 | 285 | | 2,883 | -2,190 | -10,065 |
| Net revenue | 7,246 | 8,577 | 10,558 | | 33,781 | 11,250 | -12,593 |
| “Trading” as a share of net revenue, % | 60.9 | 56.8 | 57.8 | | 47.7 | -62.0 | 241.4 |

Note. Trading = commissions + principal transactions + other. * Losses (negative numbers) require cautious interpretation of these percentages.

For these banks, the share of their income from trading activities was roughly 50 percent or more during the height of the bubble just before the crash of 2007.

Thus, these data suggest that the massive increase of income extraction by the financial sector relative to the provision of services to the real sector can conjecturally be explained by the explosion in revenue generated by trading activities as a share of investment banks' income generating activities. This is reflected in the activities of major commercial banks as well, such as Citibank and Bank of America. (see Crotty, Epstein and Levina (2010) for a discussion of Citibank).

Given the doubts raised earlier about the concepts of liquidity provision and market making and given what we know about the etiology of the financial crisis of 2007 - ?, it is reasonable to be skeptical about the social efficiency of such activities. Of course, future work must pin down the costs and benefits of these trading activities much more precisely.

CONCLUSION

Tom Weisskopf has shown us, among many other things, the power that comes from the careful development of well-designed descriptive statistics to help us understand the underlying structures and dynamics of our economy. In this paper we have made an initial attempt to do just that with respect to the question of the social efficiency of the U.S. financial sector.

A very preliminary range of estimates presented in Tables 1 and 2 above suggests that the financial sector in the United States is extracting 2- 4 times as much income relative to the services it provides to the real sector in the decade of the 2000's as it did during the high growth period of the 1960's. This suggests that the financial sector may need to be only one-half to one-quarter as large as it is currently to serve the existing needs of the real sector.

Of course, these are very crude estimates. We must do much more work on the "dark matter" functions of the financial sector, as well as understand better the impacts of financial innovations, before we can present such estimates of financial bloat with a great deal of confidence. Still, these preliminary discussions are telling. They suggest that financial bloat is real and that, with further efforts, we can make our estimates of its size more precise.

We can also say that next time apologists for the financial sector criticize an attempt at reasonable financial regulation or restructuring by claiming it will harm at the margin the financial sector, reduce liquidity provision or hinder market making -- it's time to reach for our computers and fire back about the reality of "financial bloat."

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² See some summary data in section II below; see MacEwan and Miller, 2011, and the papers in Wolfson and Epstein, 2012, on the role of finance in the crisis.

³ See, for example, Arcand, Berkes and Panizza, 2011, and Panizza, 2011, for recent work. The work by Turner, Haldane and colleagues, 2010, is also of significant interest here as is that of Philippon, 2011; for earlier important work, see Zhu, Ash and Pollin, 2002.

⁴ These data are based on the Board of Governors Flow of Funds Accounts, Bureau of Economic Analysis (BEA) National Income and Product Accounts (NIPA), and Securities Information Financial Analysis (SIFMA). Iren Levina gathered these data and performed these calculations.

⁵ Iren Levina and Leila Davis who served as research assistants on this project, developed the data presented in this section.

⁶ See Mehrling (2011) for an important discussion of the nature of liquidity which informs our analysis as well.

⁷ We discuss this further in the section on income estimates of investment banks below.

⁸ Iren Levina carried out the data collection and analysis for this section. For more discussion see Crotty, Epstein and Levina, 2010.