Does Finance Benefit Society?

Luigi Zingales

Harvard University, NBER, and CEPR

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Abstract

Academics' view of the benefits of finance vastly exceeds societal perception. This dissonance is at least partly explained by an under-appreciation by academia of how, without proper rules, finance can easily degenerate into a rent-seeking activity. I outline what finance academics can do, from a research point of view and from an educational point of view, to promote good finance and minimize the bad.

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For an academic economist the answer to the question raised in the title seems obvious. After all, there are plenty of theories that explain the crucial role played by finance: from managing risk (Froote et al., 1993) to providing valuable price signals (Hayek, 1945), from curbing agency problems (Jensen and Meckling, 1976) to alleviating informational asymmetries (Myers and Majluf, 1984). Furthermore, there is plenty of evidence that finance fosters growth (e.g., Levine 2005), promotes entrepreneurship (Guiso et al, 2004; Mollica and Zingales, 2008), favors education (Flug et al., 2008; and Levine and Rubinstein, 2014), alleviates poverty and reduces inequality (Beck et al., 2007).

Yet, this feeling is not shared by society at large. 57% of readers of *The Economist* (not a particularly unsympathetic crowd) disagree with the statement that "financial innovation boosts economic growth." When asked "Overall, how much, if at all, do you think the US financial system benefits or hurts the US economy?", 48% of a representative sample of adult Americans respond that finance hurts the US economy, only 34% say that it benefits it.[1]

This sentiment is not just the result of the crisis: throughout history finance has been perceived as a rent-seeking activity. Prohibitions against finance date as far back as the Old Testament.[2] The aftermath of the 2007-08 financial crisis has only worsened this view. From Libor fixing to exchange rate manipulation, from gold price rigging to outright financial fraud in subprime mortgages, not a day passes without a news of a fresh financial scandal. After the financial crisis, Americans' trust towards bankers has dropped tremendously (Sapienza and Zingales, 2012) and has not yet fully recovered.

It is very tempting for us academics to dismiss all these feelings as the expression of ignorant populism (Sapienza and Zingales, 2013). After all, we are the priests of an esoteric religion, only we understand the academic scriptures and can appreciate the truths therein revealed. For this reason, we almost wallow in public disdain and refuse to engage, rather than wonder whether there is any reason for these feelings.

[1] Chicago Booth-Kellogg School Financial Trust Index survey December 2014. The survey, conducted by Social Science Research Solutions, collects information on a representative sample of roughly 1,000 American households.
[2] "If you lend money to any of my people with you who is poor, you shall not be to him as a creditor, and you shall not exact interest from him." Exodus 22:24 (22:25 in English trans).

This is a huge mistake. As finance academics, we should care deeply about the way the financial industry is perceived by society. Not so much because this affects our own reputation, but because there might be some truth in all these criticisms, truths we cannot see because we are too embedded in our own world. And even if we thought there was no truth, we should care about the effects that this reputation has in shaping regulation and government intervention in the financial industry. Last but not least, we should care because the positive role finance can play in society is very much dependent upon the public perception of our industry.

When the anti-finance sentiment becomes rage, it is difficult to maintain a prompt and unbiased enforcement of contracts, the necessary condition for competitive arm's length financing. Without public support, financiers need a political protection to operate, but only those financiers who enjoy rents can afford to pay for the heavy lobbying. Thus, in the face of public resentment only the noncompetitive and clubbish finance can survive. The more prevalent this bad type of finance is, the stronger the anti-finance sentiment will become. Hence, a deterioration of the public perception of finance risks triggering a vicious circle, all too common around the world (Zingales, 2012). The United States experienced it after the 1929 stock market crash and it faces this risk again today.

What can we do as a profession? First of all, acknowledge that our view of the benefits of finance is inflated. While there is no doubt that a developed economy needs a sophisticated financial sector, at the current state of knowledge there is no theoretical reason or empirical evidence to support the notion that all the growth of the financial sector in the last forty years has been beneficial to society. In fact, we have both theoretical reasons and empirical evidence to claim that a component has been pure rent seeking. By defending all forms of finance, by being unwilling to separate the wheat from the chaff, we have lost credibility in defending the real contribution of finance.

Our second task is to use our research and our teaching to curb the rent-seeking dimension of finance. We should use our research to challenge the existing practices in finance and blow the whistle on what does not work. We should be the watchdogs of the financial industry, not its lapdogs (Zingales, 2014). While there are several encouraging examples in this direction, we can definitely do more.

We should get more involved in policy (while not in politics). Policy work enjoys a lower status in our circles, because too often it becomes the ex post rationalization of proposals advanced by various interest groups. By contrast, the benefit of a theory-based analysis is that it imposes some discipline, making capture by industry more difficult.

Finally, we can do more from an educational point of view. Borrowing from "real" sciences we have taken a very agnostic approach to teaching. But physicists do not teach to atoms and atoms do not have free will. If they did, physicists would be concerned about how the atoms being instructed could change their behavior and affect the universe. Experimental evidence (Wang et al, 2011; Cohn et al., 2014) seems to suggest that we inadvertently do teach people how to behave and not in a good way.

The rest of the paper proceeds as follows. Section 1 tries to answer the question of why we should care about this dissonance. Section 2 argues that our own perception of the benefits of finance is inflated. Section 3 presents evidence of why the financial sector can be excessively big and why market forces cannot bring it in check. Sections 4 to 6 outline what we can do from a research point of view and from a teaching point of view.

1. Why Should We Care?

Facing (often exaggerated) attacks by the media, it is tempting for us financial economists to close ranks and defend the entire industry. If the healthcare industry – which grew in relative size more than the financial one – is not under attack, why should we?

This attitude is very myopic. While the financial sector can and does add a lot of value, some of the criticism is real. An industry does not pay $139 billion in fines in two years (see Table 1) if there is nothing wrong. Several finance practices are wasteful if not fraudulent. If we try to defend them all, we might win some battles, but we will lose the war.

1.1 Monetary vs. social rewards

In the social prestige arena, finance starts at a disadvantage vis-à-vis other fields. In an evolutionary view of social norms (Hayek, 1967), one of the possible roles of social prestige is to fill the gap between the (perceived) social and private returns of various activities. For example, fighting the spread of ebola is an activity with a very high social return, but a very low private return. Consistently, people who engage in such activity are kept in high regard by society. By contrast, tax-dodging is an activity with a very high private return, but negative social returns. Not surprisingly, tax dodgers and their enablers are not regarded very highly.

Many financial activities tend to have a private return that is much higher than the (perceived) social return. The same is true for lawyers, especially litigation lawyers, but it is not true for doctors. In finance, however, this difference is often extreme. In 1992 George Soros' short forced the pound out of the European Exchange Rate Mechanism (Ferguson and Schlefer, 2009). While (arguably) his social contribution was big (the United Kingdom got out from the ERM that was penalizing its economy), it was not very visible and easy to measure. By contrast, his private profit ($1 bn) was. Thus, it is only natural that finance be low in the scale of social prestige. It is incumbent upon us, finance academics, to enhance the perception of the social return of many finance activities. To this day, the empirical measurements of the benefits of having an efficient market are fairly elusive.

But even if we do our best, the deck is stuck against us. Regardless of their social return, large and rapid accumulations of wealth (like Soros' one) are likely to generate envy and public resentment. This is even more true when the reason for that accumulation is not easily understood. Most people did not resent Steve Jobs' huge wealth accumulation, because they could directly appreciate the benefits of his innovations. The same is not true for financiers.

Thus, even in the absence of any fraud there is a natural public dislike towards finance. In the presence of fraud, this dislike easily becomes rage. This is the reason why we should all be sensitive to the cost created by fraud. Even when relatively small from a quantitative point of view, fraud in the financial sector can have devastating effects on the reputation of the industry, with extreme negative consequences on its functioning.

1.2 Reputation and good finance

If political power is disproportionately in the hands of large donors – as it is increasingly the case in the United States – why is the negative public perception of finance a problem? Rich financiers can easily buy their political protection. In fact, this is precisely the problem.

At the cost of oversimplifying, there are two main ways in which financing can be done by the private sector (i.e., without the coercive power of the State). There is the competitive arm's length mode, which relies heavily on the prompt and unbiased enforcement of contracts; and there is a relationship-based mode, where the financier secures her return on investment by retaining some kind of monopoly over the firm she finances (Rajan and Zingales, 1998a). As with every monopoly, this requires some barriers to entry. These barriers may be due to regulation, or to a lack of transparency – or "opacity" – of the system, which substantially raises the costs of entry to potential competitors. Alternatively, the barriers may be provided by a "special relationship" with the Government. In such a system, conflicts of interest are not the exception, they are the rule.

While it is certainly possible to construct counterexamples, the competitive mode of financing is cheaper and less biased. Yet, it is a much more difficult mode to sustain. It requires not only that the rule of law is respected now, but also that it will be respected in the future. If a lender does not expect her contract to be enforced by the law, she will never extend arm's length credit. She will seek some degree of economic or political control to protect her investment.

True competition can occur only on a leveled playing field and this leveled field needs to be designed and supported. In particular, it needs an administrative system that follows the impartiality principle and the rule of law. Unfortunately, while everybody benefits from such a system, nobody benefits so disproportionately to spend resources to lobby for it. Paradoxically, the lobby in favor of true competitive markets is the weakest of them all (Rajan and Zingales, 2003). This is the reason why public support for finance is so important. Without public support, the best form of finance – the competitive, democratic, and inclusive finance – cannot operate. If political protection becomes necessary to operate,

only the type of finance that enjoys sufficient rents to lobby heavily can survive. This is the bad type of finance: the noncompetitive, plutocratic, and clubbish one.

1.3 The Vicious Circle

The rule of law is a crucial ingredient in the development of competitive financial markets (La Porta et al., 2008). Yet, what underpins the rule of law is a set of beliefs that the rule of law promotes economic prosperity. If these beliefs start to waver, the expectation that property rights will be respected in the future wavers as well.

In 2009, despite questions about its legality, the U.S. Congress approved by a 328-to-93 vote a *retroactive* 90 percent levy on bank bonuses of bailout banks.[3] Thus, even in the United States public resentment against finance can undermine the expectation that the rule of law will be respected in the future. Without this expectation the competitive, democratic, and inclusive finance will quickly become unsustainable.

This situation is very common around the world. Di Tella and MacCulloch (2009) find that, controlling for country fixed effects, the more an individual perceive his country as corrupt, the more he demands government intervention. They also find that increases in corruption in a country precede increases in voting support for populist, left-leaning parties.

In these situations, to keep the money spigot going, the financial industry will seek protection by increasing its political power. Unfortunately, this increased political power will have the effect of creating even more popular resentment against the industry. This resentment can be neutered by heavier lobbying, but this starts an escalation. The risk is that this escalation will end with an even more radical backlash against the entire industry.

[3] Hulse, Carl And David M. Herszenhorn, 2009, House Approves 90% Tax on Bonuses After Bailouts, *New York Times*, March 19, 2009.

This vicious circle is not unique to the finance industry. It is present in every industry. But it is particularly strong in the financial industry, because of the importance that the rule of law plays in this industry and because of the negative feelings this industry engenders even in regular times.

1.4 No easy way out

How to break this vicious circle? The traditional response – more government regulation – makes the problem worse. If the financial industry is good at buying out political power, it is even better at capturing regulators. At every financial crisis we create a new regulator. The Federal Reserve was created in 1913 to address the liquidity problems experienced during the panic of 1907. The Federal Deposit Insurance Corporation (FDIC) was born in 1933 to prevent the kind of bank runs that had forced more than 5,000 banks to close in the early 1930s. The Securities and Exchange Commission (SEC) came into being in 1934 to prevent the stock-market manipulations that had prevailed during the 1920s. And the Office of Thrift Supervision was created in 1989, following the savings-and-loan crisis of the late eighties. The Public Company Accounting Oversight Board (PCAOB) was created in response of the Enron and WorldComm accounting scandals. The 2007-08 financial crisis brought us the Consumer Financial Protection Bureau (CFPB).

All these agencies start with the best intentions. Hiring on the wake of a crisis, they are able to attract highly motivated people, who want to make the difference. Over time, however, the sense of purpose fades, while the constant pressure of the industry succeeds in winning over or pushing out even the best people. From a tool to improve the functioning of markets, over time these agencies become a club to consolidate the power of incumbents.

This life-cycle theory of government agencies should not be used as an excuse for total *laissez faire*. Without proper rules we do not have a well-functioning market: we have a jungle. Yet, it should be kept in mind when thinking about how to intervene. In designing rules we economists need to think about how these rules will be adapted and enforced under heavy lobbying pressure. For this reason, rules that modify incentives ex ante rather than repress behavior ex post are to be preferred: enforcement can be

more easily blocked by lobbying. Similarly, simpler rules approved by Congress are to be preferred to complicated regulation implemented by captured agencies. Finally, rules that can be enforced by class action suits are better, because it is easier to buy out an agency or a prosecutor than to buy out an entire class (Zingales, 2012).

Last but not least, regulation is not the only solution. As academics we can do a lot to ameliorate the situation. Yet, we cannot do it if we do not believe there is a problem. Thus, I will start arguing that we do have a problem and then I will outline what we can do about it.

2. An Inflated View of the Benefits of Finance

Even the most severe critics of the financial sector agree that a good financial system is essential for a well-functioning economy and that "over the long sweep of history, financial innovation has been important in promoting growth" (Stiglitz, 2010). The real matters of contention are whether financial innovation over the last 40 years has been beneficial and whether the size of the U.S. financial system has outgrown its benefits. A common belief in our profession is that all that we observe is efficient. But do we have any theory or any evidence to justify this conclusion?

2.1 Lack of theory

The First Welfare Theorem (Arrow and Debreu, 1954) demonstrates that in a competitive economy individual choices lead to an allocation that is Pareto efficient. The First Welfare Theorem, however, holds only if every relevant good is traded in a market at publicly known prices (i.e., if there is a complete set of markets). When this condition is violated (as it generally is), the Pareto optimality of the equilibrium is not guaranteed. More interestingly for the financial sector, Hart (1975) shows that starting from an incomplete market economy, adding a market can make all agents worse off. Elul (1995) shows that far from being an exception, Hart's result is very robust and pervasive. Thus, there is no theoretical basis for the presumption that financial innovation, by expanding financial opportunities, increases welfare.

2.2 Lack of evidence

There is a large body of evidence (summarized in Levine, 1997, 2005 and Beck, 2011) documenting that *on average* a bigger banking sector (often measured as the ratio of private credit to GDP) is correlated with higher growth, both cross-sectionally and over time.

Besides the traditional issues with this cross-country analysis (Zingales, 2003), this evidence has two problems in answering the question of whether the U.S. financial system is excessively big. First, that the relationship exists on average does not imply it is still true on the margin. Second, in this large body there is precious little evidence that shows the positive role of other forms of financial development, particularly important in the United States: equity market, junk bond market, option and future markets, interest rate swaps, etc.[4]

More recent evidence has challenged that more credit is always good. Arcand et al. (2011) find that there is a non-monotone relationship between credit to GDP and growth, with a tipping point when credit to the private sector reaches around 80-100% of GDP. At this level, the marginal effect of financial depth on output growth becomes negative. To a similar conclusion arrive Cecchetti and Carroubi (2012). In fact, Schularick and Taylor (2012) go further and establish that lagged credit growth is a highly significant predictor of financial crises and that financial stability risks increase with the size of the financial sector. Similarly, Mian and Sufi (2014) identify in the rise of the ratio of debt to GDP (the flip side of credit to GDP) the main culprit of the 2007-08 financial crisis. If anything, the empirical evidence suggests that the credit expansion in the United States was excessive.

The problem is even more severe for other parts of the financial system. There is remarkably little evidence that the existence or the size of an equity market matters for growth. Da Rin et al. (2006) find that in Europe the opening of a 'New' market for smaller companies had a positive and significant effect on the proportion of private equity funds invested in early stage ventures and high-tech industries. It is unclear, though, how much of this effect is specific to the internet bubble. Levine and Zervos (1998)

[4] As a measure of financial development Jayaratne and Strahan (1996) use bank deregulation and Rajan and Zingales (1998b) use quality of accounting standards. Yet, even this evidence is unable to answer the question raised at the beginning of this section.

estimate the correlation between various stock market measures and economic growth. Only market turnover (value of domestic shares on domestic exchanges over domestic capitalization) is significantly correlated with economic growth. A priori this would not have been the most obvious measure of development. Thus, it is not clear how much this result is the product of data snooping. Furthermore, I am not aware of any evidence that the creation and growth of the junk bond market, the option and futures market, or the development of over-the-counter derivatives are positively correlated with economic growth.

In interpreting a body of empirical literature one has to use Sherlock Holmes' famous principle of the dog that didn't bark. Before the 2007-08 financial crisis the incentives to write a paper documenting the benefit of any of these markets was very high. The data were readily available. Thus, if no paper has been published it is not for lack of trying, but for luck of any success in finding a statistically significant result. Therefore, the lack of published evidence can be safely interpreted as evidence of lack of any correlation.[5]

To this point it is interesting to note that all the above-mentioned evidence on the negative effects of financial development was collected since the crisis even if based on pre-crisis data. Thus, the same evidence could have been gathered before the crisis, but it was not. Why? It is possible that our profession is subject to fads and the type of evidence we are looking for is affected by those fads as well. If so, the body of empirical evidence should be interpreted in light of these fads.

2.3 Not guilty by association

Between 1960 and 2012 while the financial industry grew from 4% of GDP to 8% of GDP, the healthcare sector grew from 5% to 18%. If this explosion happened in other service sectors, doesn't this justify the growth in the financial sector?

The healthcare sector is a particularly good comparison for the financial one. Both sectors provide a service everybody needs, but very few people understand and thus both sectors depend heavily

[5] Of course, lack of statistical significance is often simply because of noise in the data. Thus, we cannot necessarily conclude that the correlation is zero, but simply that all the existing measures will produce a zero correlation.

on trust. Both sectors are plagued by conflicts of interest and experience enormous abuse and fraud. In both sectors, the buyers often do not bear the entire cost of their decisions. Finally, both sectors are much bigger in the United States than in most other countries.

Is this analogy a source of comfort or a source of worry? In both sectors, the government has intervened massively and distorted the natural market forces. Both sectors lobby heavily to direct government intervention to their own advantage. In 2014 they were at the top of the ranking for money spent in lobbying with $369M (finance) and $367M (healthcare).[6] Thus, the parallel dynamics is more evidence of a common problem, rather than of the inexistence of a problem.

2.4 Money Doctors

In an attempt to explain the growing size of the money management business documented in Greenwood and Scharfstein (2013), Gennaioli et al. (2014) argue that – like healthcare – finance is a service, which people cannot perform on their own. While expensive, not using these professional services could be worse because most people do not know much about these fields. According to this view, finance has grown because the demand for this service has grown. This view is supported by Von Gaudecker (forthcoming), who shows that financial illiterate workers benefit from financial advice: they gain roughly 50 bps of extra return per given level of risk.

As for healthcare, though, the question is not whether people benefit from doctors, but what is the cost-to-benefit ratio. In the United States healthcare expenditure over GDP is 18%, almost twice that of the United Kingdom (9%), Sweden (10%), Canada (11%), and Germany (11%).[7] The disproportionate size of the U.S healthcare sector does not map into measurable benefits: the United States is only 32nd for overall life expectancy below Portugal and Greece, in spite of spending more than four times as much per capita.[8] In Sweden the share of finance over GDP is half of that in the United States. Are U.S. retirement savings managed so much better than Swedish ones? The evidence in Cronqvist and Thaler (2004) seems to suggest that is not the case.

[6] https://www.opensecrets.org/lobby/top.php?indexType=c&showYear=2014.
[7] http://data.worldbank.org/indicator/SH.XPD.TOTL.ZS.
[8] World Health Organization, http://apps.who.int/gho/data/node.main.688.

As for healthcare, the question is also whether the system can be designed in a better way. The architecture of a country's retirement system (public or private, defined benefit or defined contribution, default options) has a big impact not only on its ability to fund pensions at a reasonable cost, but also on the size, the profitability, and the efficiency of the financial system. The movement towards defined contributions has significantly increased the share of GDP represented by asset management services (Greenwood and Scharfstein, 2013), making the financial industry richer. [9] Was this good or bad for society overall?

3. An Hypertrophic Financial Sector

The last forty years have witnessed a major revolution in finance. While forty years ago the efficient market theory (EMT) was dominant and Jensen (1978) could assert with confidence that "there is no other proposition in economics which has more solid empirical evidence supporting it", today it is hard to find any financial economist under forty with such a sanguine position.

The consequences of this revolution, however, have not been fully digested when it comes to welfare analysis and regulation. When does finance help ordinary people and when does it take advantage of them? Without the crutches of the EMT, the analysis is more nuanced (Zingales, 2010). We cannot argue deductively that all finance is good. Yet, we do not want to fall in the opposite extreme that all finance is bad or useless. To separate the wheat from the chaff, we need to identify the rent-seeking components of finance, i.e. those activities that while profitable from an individual point of view are not so from a societal point of view. In what follows I will focus on some corporate-finance examples, ignoring others such as excessive information discovery (Hirshleifer (1971)) and trading (French (2008)). I do so not necessarily because these are the most important cases, but because they are less discussed in the literature.

3.1 Duping unsophisticated investors

[9] In 2010 U.S. households owned $10.1 trillion in retirement assets. At a conservative 100bps of management fee per years, this represents a $100bn for the financial industry.

In the financial sector "duping" takes place in two forms. There is the "straight" duping, where investors are sold a product they do not understand and would have never wanted had they understood it, and the "indirect" duping, where investors are attracted to product bundles that are very convenient for sophisticated investors (who buy the cheap part and disregard the expensive one), but turns out to be extremely costly for unsophisticated ones, who buy the whole bundle.

The structured products sold to depositors throughout Europe belong to the first categories. Celerier and Vallee (2013), for example, analyze 55,000 retail structured products issued in 17 European countries from 2002 to 2010. They find that more complex products have higher markups and are sold to less sophisticated investors. Consistent with Carlin (2009), they find that complexity increases with an increase in competition, measured as the introduction of ETF products. Thus, complexity seems to be used to increase search costs.

Another example of "straight" duping are lemon securities sold to unsophisticated buyers. In fact, the fear that commercial banks will dump on their depositors bonds of near-insolvent borrowers they do not want to refinance was one of the reasons behind the 1933 legislation to separate investment and commercial banks (also known as Glass Steagall Act). Kroszner and Rajan (1994) examine whether there was any empirical basis for this fear in the years preceding the Glass Steagall Act and they find no evidence that commercial banks systematically fooled the public. Yet, the same cannot be said for other countries. Italian banks dumped Parmalat and Cirio bonds on their depositors shortly before these companies went bankrupt (Maciocchi, 2012).

Finally, an example of "straight" duping is represented by mortgages sufficiently complicated not to be understood by borrowers. The level of complication does not need to be extreme. By using an experiment of mandatory counseling in Illinois, Ben-David et al. (forthcoming) show that an overwhelming majority of borrowers who were receiving adjustable rate loans did not understand that their mortgage payment was not fixed over the life of the loan.

A more sophisticated form of duping is the one studied by Gabaix and Laibson (2006). The basic financial product is not a lemon, but it is packaged with some optional overpriced add-ons (e.g., a free

credit card with extremely high late fees). Sophisticated consumers observe the price of the expensive add-on even if it is shrouded and they limit their purchase to the base good, while unsophisticated consumers do not pay attention to the price of the shrouded add-on and they buy it in addition to the base good. In equilibrium the base good will be priced below the marginal cost because it will be subsidized by the excessive profits on the shrouded add-on. Yet, the distortion will not be eliminated.

These distortions are present in every sector, not just in finance. Yet, the financial sector provides much greater opportunities for abuses, thanks to the flexibility provided by financial engineering. These opportunities are so large that even governments take advantage of them. Subsidized credit is a very popular form of government intervention because it is less transparent to the taxpayers. So are various forms of financial engineering, such as the implicit bailout options to Fannie Mae and Freddie Mac, and many non-recourse loans granted by the Fed during the crisis. The use of financial engineering to disguise reality is so pervasive that even governments use it. "A key insight –writes a senior official in the Bush administration -- is that under pricing insurance coverage is economically similar to overpaying for assets—but it turns out to be far less transparent. This insight underpins both the TALF and the bank rescue programs announced by the Obama administration in March 2009." (Swagel, 2009).

Except for clear cases of fraud and for misrepresentation by the government, one may wonder whether all these situations do not fall under the *caveat emptor* principle. Under this old principle, the buyer cannot recover damages from the seller for defects on a property. This principle had two functions: First, to create the incentives for the buyer to collect information about his purchases; second, to minimize the possible litigation due to buyer's remorse. When it comes to the securities' market, we may wonder to what extent it is efficient to require all investors to collect the same information. Especially when they are *de facto* forced to become investors by some 401K plan.

3.2 Aiding and Abetting Agency Problems

Frequent-flier miles for business customers are generally credited to the individual flying, not the company paying for the ticket, a clever way to create brand loyalty and reduce price sensitivity. Similarly, several drug companies provide customers with a rebate roughly equal to their out-of-pocket

expenses: another clever way to make customers insensitive to the price of the product. It is also a way to prey on the moral hazard present in healthcare. Insured customers tend to disregard prices and to over-consume drugs. Principals (in this case the insurance companies that foot the bill) try to reduce this moral hazard by introducing some co-payment. By introducing the rebate, pharmaceutical companies neuter the insurance companies' attempt to mitigate the moral hazard problem.

As these examples suggest, exploiting customers' agency problems is a very diffused and time-honored technique. Of course, principals can react by requiring their employees to rebate their miles or their insured people to pay back their drug rebates. These countermeasures, however, take time and they are plagued with problems. Their efficacy depends very much on the speed of marketing innovation, the flexibility of the technology to exploit these agency problems, and how present and active the principal is.

Unfortunately, finance stands out in all three dimensions: innovation happens very fast; financial engineering provides an extremely flexible tool to exploit agency problems; and the principles (be they shareholders in publicly traded companies or taxpayers) are dispersed and almost incapacitated to move. For this reason, financial products designed to prey on existing agency problems are very diffused.

Most executive compensation packages, for example, are linked to stock prices through options and to some financial variables, from earnings to cash flow. A clever use of derivatives can increase the value of the options and the value of the stated earnings or cash flow per given true performance of the company. For example, by increasing risk, derivatives can increase the value of the executives' stock options and by swapping a fixed rate with a floating rate, they can easily increase current earnings. A board could try to sterilize the effects of these derivatives in the CEO's compensation formula; however, having served on a compensation committee, I can attest to how difficult this is, even when board members have all the intention to do so, let alone when they are a little hesitant.

The problem is obviously even more severe when the principal is the taxpayers. Perignon and Vallee (2014) document this problem very clearly by looking at the actual borrowings of nearly 3,000 French local governments. They show that politicians use structured loans with artificially low initial rates and substantial future coupon risk . They use them more frequently and to a larger extent when their

incentives to hide the cost of debt are strong, when their area is politically contested, and when their peers implement similar transactions. Thus, financial engineering makes the agency problem between voters and elected politicians worse.

The same can be said for much of regulation. When Greece was trying to meet the Maastricht parameters to be admitted in the euro, it engaged in a series of currency and interest rate swaps. These contracts were not based on the prevailing spot market rates of exchange at the time of the swap transaction but on different ones. As a result "the Greek government debt was de facto reduced by EUR 2.4 billion by the conversion process" (EUROSTAT, 2010). "Normally, Greece should have made an equivalent payment in cash in order to compensate its swap counterpart, with an unfavorable effect on the government deficit. Instead the Greek authorities agreed that this above-mentioned lump sum would be repaid through an off-market interest rate swap that was structured such that the repayment by Greece would be spread by way of annual net interest payments until 2019, following a grace period of two years for such payments. The impact on the deficit therefore appeared over many years and the impact on the Greek accounts was low on a yearly basis" (EUROSTAT, 2010). Thus, the flexibility provided by financial derivatives allowed Greece to run afoul of the Maastricht parameters. Apparently, Greece was not the only one to do so (e.g. see Piga, 2001), but it is the one we know the best because the European Union conducted an investigation after Greece was bailed out.

The problem is not limited to sovereigns, but involves all regulated entities. According to recent revelations, in early 2012 Goldman Sachs entered into a deal with Banco Santander, which a U.S. regulator defined as "basically window dressing that's designed to help Banco Santander artificially enhance its capital" (Bernstein, 2014). The operation was not illegal, but it was designed with the main purpose of bypassing crucial capital ratio requirements. This case is only one of many. How many? Unfortunately, it is not easy to find out.

3.3 Is fraud a bug or a feature?

Distortions and abuses are present in every industry. Rudman et al. (2009) estimate the cost of fraud and abuse in the healthcare sector to be between $100 and $170 billion per year. Yet, the size and

pervasiveness of fraud in the financial sectors seem to exceed the one in the healthcare sector, in spite of being half its size.

For the period 1996-2004, Dyck et al. (2014) estimate that the cost of (mostly financial) fraud among U.S. companies with more than $750m in revenues is $380bn a year. Table 1 reports the fines paid by financial institutions to U.S. enforcement agencies between January 2012 and December 2014. The total amount is $139 bn, $113bn of which related to mortgage fraud. This severely underestimates the magnitude of the problem. First, some of the main mortgage lenders (like New Century Financial) went bankrupt and therefore were never charged. Second, even if the fraudulent institution did not go bankrupt, it can effectively be sued only if it has enough capital. The table includes just one fine regarding Madoff, for only 2.9bn, when the overall amount of the Madoff fraud totaled $64.8 bn.[10] Finally, Dyck et al. (2014) estimate that only one fourth of the fraud are detected. Thus, the actual figure can easily be four times the calculated amount.

Fraud has also been documented on a large scale during the real estate bubble. Piskorski et al. (forthcoming) find that close to 10% of the $2 trillion non-agency RMBS issued between 1999 and 2007 misreport occupancy status of borrower and/or second liens. These results are also supported by the declaration of a whistleblower inside JPMorgan Chase who reports that 40 percent of the mortgages of some RMBS were based on overstated incomes (Querner, 2014).

Not to mention the Ponzi scheme organized by Madoff. Instead of offering phenomenal returns to attract investors, Madoff offered very stable, but fraudulent, returns.

What is unique is not just the magnitude of fraud, but the fact that most people committing it seem to have got away with it, leaving shareholders to bear the cost. While Madoff is in jail, I am not aware of any financial executive in jail for the $113bn of mortgage related fraud, nor for the Libor scandal.

Finally, the pervasiveness of the fraud is remarkable. From Libor fixing to exchange rate manipulation, there is hardly any activity untouched by fraud. But even more remarkable is the

[10] Bray, Chad, 2009, "Madoff Pleads Guilty to Massive Fraud". *The Wall Street Journal*, March 12.

nonchalance of the people committing it. For example one of the many email exchanges between employees of the Royal Bank of Scotland recites:

> *Senior Yen Trader*: the whole HF (hedge fund) world will be kissing you instead of calling me if libor move lower
> *Yen Trader 1*: ok, i will move the curve down 1bp maybe more if I can
> *Senior Yen Trader*: maybe after tomorrow fixing hehehe
> *Yen Trader 1:* fine will go with same as yesterday then
> *Senior Yen Trader*: cool
> *Yen Trader 1:* maybe a touch higher tomorrow.[11]

There is no attempt to hide what they are doing, no sense of guilt. It is ordinary business.

I fear that in the financial sector fraud has become a feature and not a bug. In the medical field, doctors might over-use expensive procedures, but they certainly do not boast that they are doing it with their colleagues. The Hippocratic Oath makes it socially unacceptable for a doctor to maximize income at the expense of patients.

The same is not true in finance. We teach our students how to maximize the tax advantage of debt and how to exploit any arbitrage opportunity. Customers are often not seen as people to respect, but as counterparties to take to the cleaners. It should not come as a surprise, thus, that – according to a whistleblower – investment bankers were referring to their clients as Muppets.[12] If the only goal is enrichment, there is a risk that abuses and fraud become not a distortion, but a continuation of the same strategy by other means.[13]

3.*4 The Distortionary Role Played by the Government*

All too often, the inefficiencies of the financial sector are blamed only on market imperfections and government intervention is invoked as the solution (e.g., Stiglitz, 1991). This approach ignores that

[11] http://www.huffingtonpost.co.uk/2013/02/06/libor-scandal-outrageous-traders-exchanges_n_2630945.html.
[12] "I have seen five different managing directors refer to their own clients as 'muppets,' sometimes over internal e-mail" writes Greg Smith in "Why I Am Leaving Goldman Sachs," *New York Times*, March 14, 2012.
[13] There are two movements that attempt to create in students the mindset that doctors have: the MBA Oath movement (http://mbaoath.org/), which exhorts MBAs to be "Value Creators", and "client-centeredness", which focuses on maximizing the value for the client. Both approaches suffer from some vagueness in their prescriptions and generate some other tensions (for example, similar to the tension between doctors and management).

the observed inefficiency of the financial sectors is often not the result of market imperfections, but of government interventions themselves.

The most famous example is the put option provided by the Government to the financial sector. As Kelly et al. (2012) show, during the 2007-08 financial crisis stock prices reflected a collective guarantee for the financial sector. At the peak of the crisis, the market value of this implicit put option exceeded $100bn, reducing banks' cost of equity. As I will discuss in more detail later, when there is free entry the effect of a subsidy is to increase disproportionately the size of the sector.

Another example is provided by the two government-sponsored mortgage giants (Fannie Mae and Freddie Mac), which had ability to borrow with an implicit government guarantee (guarantee that became explicit in the summer of 2008). In 2000, the subsidy for Fannie alone was estimated at $6.1 billion and in 2003 at $13.6 billion.[14] When the need to intervene materialized, the effective cost was more than $180 billion.[15]

The mistake often made is to attribute this government intervention to some populist pressure to promote low-income housing, *against* the interest of the financial industry. In fact, the financial industry was quite happy to receive a government subsidy in the form of underpriced insurance against default, and promoting low-income housing was just a noble excuse. Lobbying does not work very effectively without the cover of some noble ideas, and what is nobler than providing a house to every American?

Unfortunately, in this case (unlike in the Government put option), academia did not play its positive role. By using its privileges to guard internal data closely, Fannie was able to prevent most independent researchers from assessing its performance. As a result, most of the research available on Fannie was research that Fannie authorized or paid for. In 2002, Fannie Mae commissioned a reassuring paper stating that "This analysis shows that, based on historical data, the probability of a shock as severe

[14] Congressional Budget Office, "Updated Estimates of the Subsidies to the Housing GSEs," April 2004.
[15] Congressional Budget Office, "The Budgetary Cost of Fannie Mae and Freddie Mac and Options for the Future Federal Role in the Secondary Mortgage Market", Testimony of Deborah Lucas before the US House of Representatives Committee on the Budget, June 2, 2011.

as embodied in the risk-based capital standard is substantially less than one in 500,000—and may be smaller than one in three million."[16]

Fannie's influence in academia, however, was not limited to the occasional paid-for paper. In a textbook example of how economists can be "captured" just as regulators can, Fannie Mae financially backed the two leading academic journals in housing research, Housing Policy Debate and the Journal of Housing Research. Not surprisingly, the articles in these journals were not terribly critical of Fannie Mae. Morgenson and Rosner (2011) report that a bank lobbyist trying to hire a housing expert to take on Fannie Mae admitted: "I tried to find academics that would do research on these issues and Fannie had bought off all the academics in housing. I had people say to me 'Are you going to give me stipends for the next 20 years like Fannie will?'"

3.5 Economic Consequences

The economic consequences of all these distortions differ widely. When regulation is useful, regulatory arbitrage has important welfare costs, as is likely to be the case in the two examples provided above. When regulation is inefficient and serving just the interest of the large incumbents, regulatory arbitrage might actually decrease existing distortions, with welfare benefits. Unfortunately, we do not know how to identify the two scenarios ex ante. Lacking a theory of how frequently regulation is inefficient and how inefficient it is, it is impossible to make an average statement about the overall cost of regulatory arbitrage. To the extent, however, that at least some of the regulatory arbitrage is inefficient (as in the two examples provided above), resources are wasted in the process.

Preying on agency costs is likely to always lead to inefficiencies. Even if principles can prevent it through ex ante contractual restrictions, these restrictions are likely to be either costly (because they prevent some legitimate actions) or incomplete (because they cannot fully prevent the additional opportunism). Thus, all these components of finance are redundant.

[16] Joseph E. Stiglitz, Jonathan M. Orszag and Peter R. Orszag, "Implications of the New Fannie Mae and Freddie Mac Risk-based Capital Standard," *Fannie Mae Papers*, 2002, vol. 1 (2), page 2.

Much of the "duping" and fraud is pure redistribution from the duped to the dupers. As economists we tend to be fairly silent about the welfare effect of wealth redistribution, because we do not want to engage in interpersonal utility comparisons. Yet, there are several important aspects that should be considered.

First, this is no costless redistribution. In fact, given the high salaries of the financial sector (Philippon and Reshef, 2009), the deadweight loss can be pretty substantial.

Second, redistributing resources from the (relatively) poor to the (relatively) rich is not an activity that enhances the reputation of the financial industry.

Another important dimension is where innovation efforts take place. If the most profitable line of business is to dupe investors with complex financial products, competitive pressure will induce financial firms to innovate along that dimension, with a double loss to society: talents are wasted in search for better duping opportunities and the mistrust towards the financial sector increases.

Last but not least, all these relatively easy profit opportunities in a sector with no barrier to entry lead to excessive entry in the sector. The point is best illustrated with an example. Before the internet made shopping for properties easy, American realtors possessed a huge source of market power: the Multiple Listing Service (MLS), a central repository of all properties available for purchase. All realtors who used the MLS abided by a type of contract that made it extremely difficult for buyers and sellers to compete on price, guaranteeing realtors a commission of 6% of the property's purchase price.[17] Since it is relatively simple and inexpensive to become a licensed realtor, this market – like the finance market – is characterized by free entry. The combination of some monopoly power and free entry leads to a bloated and less productive realtor industry.

Hsieh and Moretti (2003) demonstrate this point empirically, using variation in land – instead of house – prices across U.S. cities. If land prices go up, a house does not become any more difficult to sell. Yet, if the realtor commission stays fixed, selling a house becomes more lucrative thanks to the land's escalating value.

[17] When the seller negotiates a lower commission, he must not only bargain with his own real estate agent, but also with the prospective buyer's agent, who holds a big bargaining chip: the power to steer his client away from the property.

The effect is an increase in the fraction of the labor force working as real estate agents, lower productivity (sales per agent or sales per hour worked) among real estate agents, and real wages that remain flat.

What happened in the real estate sector is happening to the financial sector. When it is easy to dupe investors or to prey on their agency problems, many more people will try to enter the industry. The main difference is that entry into real estate brokering is fairly fast: one has to take a relatively easy state license exam and he is in. The same is not true for the financial sector. Much of the reputation is associated to the firm, not the individual. Thus, new entrants have to climb the ladder inside existing organizations. Thus, the equalization of compensations takes longer.

4. What can we do in empirical research?

4.1 Whistleblower

"Publicity," wrote Justice Louis Brandeis (1914), "is justly commended as a remedy for social and industrial diseases." Thus, our primary contribution as researchers is to expose these distortions, to act as whistleblowers. When the necessary data to conduct the research are broadly accessible, this seems to work. The competition among academics to write interesting papers to advance their career contributes to uncover scandals. From collusive quotes on NASDAQ (Christie and Schultz, 1994) to postdated stock options (Lie, 2005), from overinflated house transaction prices (Ben-David, 2011) to disappearing analysts' recommendations (Ljungqvist et al., 2009), academic research has identified many improprieties in the financial industry.

In pure Adam Smith fashion, competition in the academic field ensures that the pursuit of self-interest delivers the common good. Ritter (2008) summarizes the many cases in which "forensic" finance uncovered some wrongdoing. Yet, this mechanism does not always work well. We academics have been late in spotting mortgage fraud. Even today there are only two academic papers documenting it (Piskorski et al., 2013; Griffin and Maturana, forthcoming). I fear this mechanism works well only when the data to conduct the research are broadly accessible.

Unfortunately, this is increasingly not the case. In spite of their quasi-government status, Fannie and Freddie kept their data closely guarded, preventing any academic inquiry into their activities. In other cases, companies and regulators use access to their data to indirectly influence research. Access to proprietary data provides a unique advantage in a highly competitive academic market. To obtain those data, academic economists generally have to maintain a reputation for treating their sources favorably. Therefore there are incentives to cater to the industry or the political authority that controls the data (Zingales, 2014).

The problem is potentially even more severe with regulators, who have captive research departments. Regulators, being hierarchical organizations, have hierarchy vet all research done inside their organization, especially the one done with proprietary data. This vetting is often done both ex ante (on the basis of the results they expect to find) and ex post (on the basis of the results that have been found). Even when regulators are not captured by the industry, they tend to be very risk-averse: they do not want a scandal under their watch. This is the reason why they tend to be very averse to granting access to data to independent researchers: they fear they would uncover something inconvenient. They do not appreciate that independent researchers are their allies, not their enemies.

When I was a young assistant professor I worked with confidential data at the Bank of Italy. I inquired if I could use it to test whether industrialists sitting on a bank's board were getting a sweetheart deal from the bank. It is a question the Bank of Italy, as supervisor and, at the time, regulator of the entire Italian banking sector, should have found interesting. In spite of the potential regulatory implications, I was stonewalled. In my naïveté, I could not understand why bank officials seemed uninterested in finding out the truth. Now that I am older and more cynical, I think that the bank had no desire to confront reality. Its officials doubtless suspected the truth but wished to keep it hidden, to avoid a scandal under their watch.

Unfortunately, these episodes are not restricted to other countries; they do take place in the United States as well. They create a potentially serious sample selection in the type of questions that can be analyzed and hence in the published evidence.

4.2 Ex Post Cost Benefit Analysis

"Publicity" does not work only against fraud, it can also work to favor evidence-based regulation. To understand this mechanism, let us consider a concrete example of a controversial financial innovation: payday loans. Payday loans are a form of regulatory arbitrage around anti-usury laws. Payday lenders, instead of charging high rates, charge 'fees' ($15 to $20 per $100 principal balance) for unsecured loans with a very short time horizon (two to four weeks), with rates above 400% per year.

Introduced in the early 1990s, payday loans exploded in the United States in the following two decades. Today 12 million Americans per year use payday loans, spending on average $520 in interest for loans of average size of just $375.[18] There are more payday-loan shops than McDonald's and Starbucks stores combined (Ziman, 2010).

Not surprisingly, this practice is very controversial and it is has been banned in several states. Yet, it could be defended as a unique financing opportunity for low income people, who have nothing otherwise. Without it, low income people will find it impossible to cope with unexpected shocks or will have to rely on loan sharks or internet payday loans, with worse consequences. Both arguments have some validity, thus only empirical work can tell us which is the practical relevance of the two sides of the story.

Academic papers find some support for both sides of the argument. Melzer (2011) documents that access to payday loans increases real indicators of economic distress, such as difficulties in paying bills, delaying medical care, and skipping on purchasing prescription medicines, by 25 percent. Similarly, Carrell and Zinman (2010) find that payday loan access adversely affects the job performance and readiness of U.S. aviators: it increased by 5.3% the likelihood that an airman was sanctioned for critically poor readiness and by 3.9% the likelihood that he was ineligible to re-enlist.

[18] The Pew Charitable Trusts, 2012, "Payday Lending in America: Who Borrows, Where They Borrow, and Why" http://www.pewtrusts.org/~/media/legacy/uploadedfiles/pcs_assets/2012/PewPaydayLendingReportpdf.pdf.

On the other side, in Morse (2011) access to payday loans lowers the likelihood of foreclosure after natural disasters by over 20 percent and in Ziman (2010) restrictions on payday loans introduced in Oregon appear to have worsened the overall financial conditions of Oregon households vis-à-vis Washington ones.

These different results only appear to be in contradiction. In reality, they reflect the heterogeneity in the use of payday loans. To appreciate it, we need to understand that when most borrowers (69%) use payday loans, they are doing so to cover ordinary living expenses, not to meet unexpected emergencies.[19] Given the very high cost of this type of borrowing, in most (but not all) situations the optimal response to a shock would be to cut ordinary expenses, which is precisely what they say they would have done without access to payday loans. [20] The question is whether reductions in ordinary expenses could be accomplished at the pace needed to cover shortfalls. The contractual design of payday loans, however, does not lead naturally to such adjustment. Since the loan is due in full at maturity, most borrowers find impossible to repay the loan in a single income cycle, triggering a spiral of additional borrowing.

In 2010, the state of Colorado tried to eliminate this feature of payday lending by mandating that they be offered in the form of installment loans. A legitimate question is why this contractual form should be mandated. The simple reason – very much in line with Gabaix and Laibson (2005) – is that unsophisticated borrowers cannot appreciate the convenience of installment loans. When they do not, lenders prefer conventional payday loans because they make customers borrow repeatedly, maximizing the fees they can charge.

The experience in Colorado is very positive. Three years after the reform, borrowers spent 44 percent less in interest than they had in 2009 under the conventional payday loan model, saving $41.9 million. [21]

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[19] The Pew Charitable Trusts, 2012, "Payday Lending in America: Who Borrows, Where They Borrow, and Why" http://www.pewtrusts.org/~/media/legacy/uploadedfiles/pcs_assets/2012/PewPaydayLendingReportpdf.pdf.
[20] The Pew Charitable Trusts, 2012, "Payday Lending in America: Who Borrows, Where They Borrow, and Why" http://www.pewtrusts.org/~/media/legacy/uploadedfiles/pcs_assets/2012/PewPaydayLendingReportpdf.pdf.
[21] The Pew Charitable Trusts, 2013, "Payday Lending in America: Policy Solutions file:///C:/UserData/work/Afa_address/pay_day_loans/PewPaydayPolicySolutionsOct2013pdf.pdf

Given such a drastic reduction in fees paid to lenders, it is entirely relevant to consider what happened to the payday lending supply. In fact, supply of loans increased. The explanation relies upon the elimination of two inefficiencies. First, less bankruptcies. Second, the reduction of excessive entry in the sector. Half of Colorado's stores closed in the three years following the reform, but each remaining store served 80 percent more customers , with no evidence of a reduced access to funds.

This result is consistent with Avery and Samolyk (2010), who find that states with no rate limits tend to have more payday loan stores per capita. In other words, when payday lenders can charge very high rates, too many lenders enter the sector, reducing the profitability of each one of them. Similar to the real estate brokers, in the presence of free entry, the possibility of charging abnormal profit margins lead to too many firms in the industry, each operating below the optimal scale (Flannery and Samolyk, 2007), and thus making only normal profits.

Interestingly, the efficient outcome cannot be achieved without mandatory regulation. Customers who are charged the very high rates do not fully appreciate that the cost is higher than if they were in a loan product which does not induce the spiral of unnecessary loan float and thus higher default. In the presence of this distortion, lenders find the opportunity to charge very high fees to be irresistible, a form of catering products to profit from cognitive limitations of the customers (Campbell, 2006). Hence, the payday loan industry has excessive entry and firms operating below the efficient scale. Competition alone will not fix the problem, in fact it might make it worse, because payday lenders will compete in finding more sophisticated ways to charge very high fees to naïve customers, exacerbating both the over-borrowing and the excessive entry. Competition works only if we restrict the dimension in which competition takes place: if unsecured lending to lower income people can take place only in the form of installment loans, competition will lower the cost of these loans.

The problem is how this solution is going to emerge politically. Industry lobbyists will not be in favor of setting caps on rates, even if this might end up increasing the profitability of the surviving firms, because it will damage many of the incumbents in their interest group. Unsophisticated customers are unable to appreciate the cost of conventional payday loans in the marketplace, let along to organize

politically to fight them. The only political constituency for change would be the people impoverished by the spiral of borrowing. But these people will lobby to prohibit payday lenders, rather than to modify the way they are run. Who is going to lobby for these restrictions that level the playing field and make the economy more productive, but do not shut down the industry?

While some seminal work in this area had been done by academics, the assessment of the Colorado initiative has been done by the Pew Foundation. I wonder to what extent there are not enough incentives, from an academic point of view, to produce this research. If profitable trading strategies are considered publishable research, why shouldn't well-done policy program evaluations?

5. What can we do in theoretical research?

All researchers are affected by fads, by their ideological beliefs, and are biased by interests they are often not aware of (Kuhn, 1962). We economists are no different. Yet, the rigor of our formal analysis provides us with an important tool to try and resist all these undue influences.

The framework we have developed is not always realistic and often needs to be adapted and changed. What we should avoid, though, is the ad hoc adaptations of the framework to avoid falsification, as described by Kuhn (1962) and as occurs so frequently in our field. To try and minimize our inevitable biases, we should start from first-principles and let the model tell us the results, not the other way around. In particular, we need to pay attention to the following three issues.

5.1 Be rigorous, not policy-relevant

When we engage in policy work we try to be relevant. Theoretical work needs to be first and foremost rigorous, not policy-relevant. If our main goal is to be policy-relevant, we can do empirical work. The reason why rigor is so important is that our set of tools is so powerful that we run the risk that our models become simply an elegant formalization of the consensus. Good theoretical work, by contrast, makes us see the world differently.

Unfortunately, all too often we run the risk of succumbing to the temptation of policy-relevant theory for fear of becoming irrelevant. Suppose – for example – that there are two methods to curb the

too-big-to-fail problem. One solves the problem completely, but it is very costly for banks. The other one provides only a partial solution, but it is much less costly to banks. Which approach would an economist, who wants to be relevant, advocate? Obviously, the second one. By advocating the first one, he would be considered unrealistic. He will not be invited to major conferences (often sponsored by banks or by regulators who are captured by banks) and his papers would probably be rejected from the major economic journals where editors will prefer to publish "more realistic" schemes.

5.2 Policy vs. Politics

Many policy-oriented economists think that "to take public positions on important policy issues without knowledge of the political process is a big mistake," where "knowledge of the political process" should be read as "the political constraints imposed by lobbying."[22]

These constraints should be considered by politicians. "Politics – Otto Von Bismarck said –is the art of the possible, the attainable — the art of the next best." These constraints should also be studied by political economists. But they should not be at the forefront of our economic analysis. The reason is not that they are not relevant, the reason is that they inevitably embed the lobbying pressure of the powerful incumbents. By incorporating them in our analysis we run the risk of becoming (inadvertently) the mouth piece of those interests.

Eliminating the tax advantage of debt, for example, does not strike me as a very politically feasible proposal. But it is certainly the right proposal to eliminate many financing distortions. Ignoring it and marketing alternative proposals only contributes to making it more difficult that the tax distortion will be eventually eliminated.

For this reason it is very important to separate policy from politics and advocacy. We need more of the first in our academic literature, less of the second.

5.3 Keep it simple, stupid

[22] Brookings Papers on Economic Activity, Spring 2009, page 76.

When we economists try to derive policy implications, we tend to prefer elaborate solutions: they show our cleverness and they demonstrate the importance of our technical expertise. In so doing, however, we ignore some important considerations.

First, when the possibility of arbitrage and manipulation is considered, the best (most robust) solutions tend to be the simplest ones. This is, for example, the case in Holmstrom and Milgrom (1987), where they show that linear incentives schemes are optimal when the possibility of inter-temporal arbitrages is considered. In the same spirit, Innes (1990) shows that when an agent can hide output at no cost, a simple debt contract is the optimal contract to overcome a moral hazard problem with limited liability.

Second, simple rules also facilitate accountability (Glaeser and Shleifer, 2001). Complicated rules are difficult to enforce even under the best circumstances, and impossible when their enforcement is the domain of captured agencies. In the context of regulation, however, there is one added benefit of simplicity. Not only does simple regulation reduce lobbying costs and distortions; it also makes it easier for the public to monitor, reducing the amount of capture.

Finally, when we factor in the enforcement and lobbying costs, simpler choices, which might have looked inefficient at first, often turn out to be optimal in a broader sense. Thus, we should make an effort to propose simple solutions, which are easier to explain to people and easier to enforce and monitor.

For example, a simple way to deal with the problem of unsophisticated investors being duped is to put the liability on the sellers. Just like brokers have to prove that they sold options only to sophisticated buyers, the same should be true for other instruments like double short ETF.

This shift in the liability rule (*Caveat Venditor*) risks shutting off ordinary people from access to financial services. For this reason, there should be an exemption for some very basic instruments – like fixed rate mortgages and a broad stock market index ETF.[23]

[23] One risk of such a system is excessive litigation. Obviously, this litigation would only take place when the unsophisticated counterparty loses money. Thus, for unsophisticated people investing in risky products would be a one way bet. I do not see this problem as significant. First, after a few litigations, the major players will choose to get out of selling complicated products to unsophisticated people, avoiding the problem altogether. Second, the

Similarly, the simple (in fact ideal solution) to reduce several agency problems that can be exploited by financial instruments is to reduce the magnitude of these agency problems. In particular, the problem between shareholders and managers is quite severe and there are many margins for improvement.

Even ignoring those margins, though, there are simple mechanisms to limit the proliferation of financial instruments aimed at preying on agency problems. The first (and simplest) one is to make mandatory, in addition to the standard financial accounts, also derivative-free financial accounts. This will eliminate any opacity and ambiguity. It will not prevent good transactions, but it will stop the bad ones. It is reasonable to expect that the politicians in French local governments studied by Perignon and Vallee (2014) would not have bought structured loans if such disclosure were in place.

There is also a simple way to prevent regulatory-arbitrage transactions while not curbing financial innovation that could be valuable: to make investment banks liable for aiding and abetting regulation-avoidance. In tax law we already have a principle that any transaction designed for the sole purpose of reducing taxes is illegal. It amounts to extending this principle to regulation.

What about bad regulation? Isn't this rule giving an excessive amount of power to regulators, power that can be abused? First of all, short of wanting zero regulation, it is not obvious what is the purpose of having easing regulatory arbitrage. Second, the problem could be easily solved by creating an "efficiency exception" in the aiding and abetting rule. If the investment bank can prove that the rule it was aiding to bypass was an inefficient and senseless rule, then the charge will be dropped.

6. What can we do in teaching?

The RBS emails reported above, like many others clues, seem to suggest that the moral standards in the financial industry are very low. One possible reason is self-selection. After all, as Rajan (2010) argues, money is the only metric in the financial world. Thus, people motivated by other goals prefer to enter different businesses. There is some evidence (Frey and Meier, 2003) that business economics

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uncertainty could be limited by some guidelines issued by the American Finance Association on what is deemed as an appropriate instrument for various categories of buyers (not unlike what the AMA does for medicines).

students are more selfish than the average student and that higher level of selfishness is due to self-selection, not indoctrination.[24]

Yet, indoctrination seems to be playing a role. Cohen et al. (2014) show that employees of a large international bank behave more dishonestly when their professional identity as bank employees is rendered salient. This effect is unique to bank employees because employees from other industries do not become more dishonest when their professional identity or bank-related items are rendered salient. This experiment suggests that the prevailing business culture in the banking industry undermines honesty norm. This result is consistent with Wang et al. (2011), who show in an experiment that the teaching of economics makes students more selfish and less concerned about the common good. Are we training people to be (more) dishonest?

Our standard defense is that we are scientists, not moral philosophers. Just like physicists do not teach how atoms *should* behave, but how they *do* behave, so should we. Yet, physicists do not teach to atoms and atoms do not have free will. If they did, physicists would be concerned about how the atoms being instructed could change their behavior and affect the universe. Shouldn't we be concerned about the effect of our "scientific" teaching?

A former student of Gary Becker's once admitted to me that many of his classmates were remarkably amoral. He attributed this to the fact that – in spite of the teacher's intentions – they took Becker's (1968) descriptive model of crime as prescriptive. We label as "irrational" not committing a crime when the expected benefit exceeds the expected punishment. Most people call this behavior moral. Is being agnostic subtly teaching students the most amoral behavior, without us taking any responsibility?

I fear so. We should not relegate our prescriptive analysis to separate, poorly attended courses, validating the implicit assumption that social norms are a matter of interest only for the less bright students. There are several social norms that are crucial to the flourishing of a market economy. We

[24] Not all papers find economists to be selfish and amoral. For example, Laband and Beil (1999) find that a majority of economists pay the highest level of dues to the American Economic Association (based on self-reported income). Furthermore, the rate of cheating (based on imputed income) is similar to that of sociologists and political scientists.

should teach them in our regular classes, at the very least emphasizing how violating these norms has negative effect on reputation.

We should also be much more transparent on the negative aspects of the financial industry, from rent-seeking behavior to captured regulation, from inefficient boards to outright fraud. Unfortunately, business cases do not help us in this dimension. Most of them are field-based, i.e. they rely on private information provided by the company. The explicit quid-pro-quo is that the author will request the company's approval before release. The implicit one is a positive spin in exchange for access to interesting information. As we describe in Dyck and Zingales (2003), some companies actively manage their information release to shape the cases. While there is more to be learned from failures, cases tend to celebrate successes and be fairly acritical toward business. For example, to find problems with venture capitalists, one has to read marketing cases, not finance ones (Najjar et al, 2002). While some of these biases might be inevitable, the more aware we become, the more we can correct them.

7. Conclusion

As a profession we financial economists have been too proud of the technical achievements and the economic successes of our discipline and too complacent of its shortcomings. There is a large gap between our self-perception and the outside perception of our role in society, a gap that can undermine the political viability of a well-functioning financial system. A competitive and inclusive financial system can exist only if the rule of law is respected and expected to be respected in the future. Yet, this expectation is unsustainable if there is a major public resentment against the financial system at large.

It is incumbent upon us academics to fill this gap. On the one hand, we need to better explain and document the contribution of finance to society. On the other hand, we need to appreciate that some of the criticisms that are raised against us are founded. Most importantly, we need to guard against the risks of becoming simple mouthpieces of the financial industry.

In this article I outline some steps we can take as a profession. Yet, the most important one is awareness of the problem. Without it, no solution can work. I hope with this piece to plant a seed. Only time will tell if it will flourish.

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Table 1: Fines paid by financial institutions to US enforcement agencies 2012-14

Agency	Amount	Who	Why
DOJ, HUD, 49 states	$25. B	Wells Fargo, JPMorgan Chase, Citigroup, Bank of America, Ally Financial	Collective agreement to address mortgage loan servicing and foreclosure abuses
DOJ, NYS	$619. M	ING Bank N.V.	conspiring to violate the International Emergency Economic Powers Act (IEEPA) and the Trading with the Enemy Act (TWEA) and for violating New York state laws by illegally moving billions of dollars through the U.S. financial system on behalf of sanctioned Cuban and Iranian entities
CFTC	$200. M	Barclays	Libor rate rigging case
DOJ	$160. M	Barclays	resolve violations arising from Barclays's submissions for the London InterBank Offered Rate (LIBOR) and the Euro Interbank Offered Rate (EURIBOR)
SEC	$35. M	OppenheimerFunds Inc.	making misleading statements about two of its mutual funds struggling in the midst of the credit crisis in late 2008
CFTC	$5. M	Morgan Stanley	unlawfully executed, processed, and reported numerous off-exchange futures trades to the Chicago Mercantile
DOJ	$175. M	Wells Fargo	engaged in a pattern or practice of discrimination against qualified African-American and Hispanic borrowers in its mortgage lending from 2004 through 2009. The settlement provides $184.3 million in compensation for wholesale borrowers who were steered into subprime mortgages or who paid higher fees and rates than white borrowers because of their race or national origin
SEC	$6.5 B	Wells Fargo	Financial crisis - selling investments tied to mortgage backed securities without fulling understanding their complexity or disclosing the risk to investors; oncealed from investors risks, terms, and improper pricing in CDOs and other complex structured products
SEC	$14. M	Well Advantage	insider trading
SEC	$296.9 M	JPMorgan Chase	Made misleading disclosures to investors about mortgage-related risks and exposure
SEC	$120. M	Credit Suisse	Made misleading disclosures to investors about mortgage-related risks and exposure
DOJ, OCC, Federal Reserve	$1.92 B	HSBC Holdings Plc. And HSBC Bank	HSBC's violations of the Bank Secrecy Act (BSA), the International Emergency Economic Powers Act (IEEPA) and the Trading with the Enemy Act (TWEA). According to court documents, HSBC Bank USA violated the BSA by failing to maintain an effective anti-money laundering program and to conduct appropriate due diligence on its foreign correspondent account holders.
CFTC, UK regulators, Swiss FINMA	$1.5 B	UBS	Libor rate rigging case
DOJ, NYS	$227. M	Standard Chartered	conspiring to violate the International Emergency Economic Powers Act (IEEPA): violated U.S. laws governing transactions involving Sudan, Iran, and other countries subject to U.S. sanctions
Federal National Mortgage Association (Fannie Mae)	$11.6 B	Bank of America	settle claims that it sold Fannie Mae hundreds of billions of dollars worth of dud home loans
Federal Reserve and OCC	$9.3 B	Bank of America, Wells Fargo, JP Morgan Chase, Citigroup, Morgan Stanley, Goldman Sachs, Aurora Bank, PNC Financial, Sovereign Bank, Metlife Bank, US Bancorp, SunTrust, HSBC	foreclosure abuses from robo-signing scandal
CFTC and UK regulators	$612. M	Royal Bank of Scotland	Libor rate rigging case
SEC	$600. M	CR Intrinsic Investors	participated in an insider trading scheme involving a clinical trial for an Alzheimer's drug being jointly developed by two pharmaceutical companies
FRBNY	$62. M	Bank of America	mortgage securities Maiden Lane II had purchased from AIG
NCUA	$165. M	Bank of America	for losses related to purchases of residential mortgage-backed securities by failed corporate credit unions
SEC	$6.5 M	Fifth Third	improper accounting of commercial real estate loans in the midst of the financial crisis
SEC	$3.5 M	CapitalOne	understating millions of dollars in auto loan losses
MBIA	$1.7 B	Bank of America	that Countrywide misrepresented its mortgage values and underwriting standards
FHFA	$885. M	UBS	settlement covers claims of alleged violations of federal and state securities laws in connection with private-label residential mortgage-backed securities purchased by Fannie Mae and Freddie Mac
FERC	$410. M	JPMorgan Chase	JP Morgan Ventures Energy Corp traders gamed rules to set cost of electricity in 2010 in California and Midwest
DOJ, NYS	$23.8 M	Liechtensteinische Landesbank AG	opening and maintaining undeclared bank accounts for U.S. taxpayers from 2001 through 2011: assisted a significant number of U.S. taxpayers in evading their U.S. tax obligations, filing false federal tax returns with the IRS and otherwise hiding accounts held at LLB-Vaduz from the IRS
SEC	$50. M	UBS	iolating securities laws while structuring and marketing a collateralized debt obligation (CDO) by failing to disclose that it retained millions of dollars in upfront cash it received in the course of acquiring collateral for the CDO
OOC, SEC, Fed, UK Financial Conduct Authority	$920. M	JPMorgan Chase	settle all claims about management and oversight in London Whale trades
OCC	$389. M	JPMorgan Chase	deceiving customers into buying costly unneeded services when they signed up for credit cards

Agency	Amount	Who	Why
DOJ	$2.85 M	Chevy Chase Bank	Chevy Chase Bank F.S.B. engaged in a pattern or practice of discrimination against qualified African-American and Hispanic borrowers in its home mortgage lending from 2006 through 2009
CFTC, DOJ	$800. M	Rabobank	Libor rate rigging case
CFTC	$100. M	JPMorgan Chase	settle charges related London Whale trades
DOJ, NCUA, FDIC, FHFA, NY, CA, DE,	$13. B	JPMorgan Chase	to setlle series of lawsuits over sale of toxic mortgage-backed securities
SEC	$150. M	RBS Securities	Made misleading disclosures to investors about mortgage-related risks and exposure
FHFA	$1.9 B	Deutsche Bank	settlement addresses claims alleging violations of federal and state securities laws in connection with private-label mortgage-backed securities (PLS) purchased by Fannie Mae and Freddie Mac between 2005 and 2007
DOJ, CFBP	$35. M	National City Bank	engaged in a pattern or practice of discrimination that increased loan prices for African-American and Hispanic borrowers who obtained residential mortgages between 2002 and 2008 from National City Bank's retail offices and nationwide network of mortgage brokers
DOJ	$7. B	Citigroup	knowingly selling shoddy mortgages ahead of crisis
DOJ	$2.6 B	JPMorgan Chase	Lax oversight of Bernie Madoff
Treasury Dept OFA	$152. M	Clearstream Banking, S.A.	to settle its potential civil liability for apparent violations surrounding Clearstream's use of its omnibus account with a U.S. financial institution as a conduit to hold securities on behalf of the Central Bank of Iran (CBI)
FHFA	$1.25 B	Morgan Stanley	addresses claims alleging violations of federal and state securities laws and common law fraud in connection with private-label mortgage-backed securities (PLS) purchased by Fannie Mae and Freddie Mac between 2005 and 2007
DOJ	$614. M	JPMorgan Chase	for violating the False Claims Act by knowingly originating and underwriting non-compliant mortgage loans submitted for insurance coverage and guarantees by the Department of Housing and Urban Development's (HUD) Federal Housing Administration (FHA) and the Department of Veterans Affairs (VA)
SEC	$196. M	Credit Suisse	for violating the federal securities laws by providing cross-border brokerage and investment advisory services to U.S. clients without first registering with the SEC
FHFA	$122. M	Societe Generale	resolves claims in the lawsuit FHFA v. Société Générale, et al alleging violations of federal and state securities laws in connection with private-label mortgage-backed securities (PLS) purchased by Fannie Mae and Freddie Mac during 2006
FHFA	$9.5 B	Bank of America	settle litigation over mortgage securities sold to Fannie Mae and Freddie Mac
FHFA	$885. M	Credit Suisse	resolves all claims in the lawsuit FHFA v. Credit Suisse, et al. as well as all claims against the Credit Suisse defendant in FHFA v. Ally Financial Inc., et al. alleging violations of federal and state securities laws in connection with private-label mortgage-backed securities (PLS) purchased by Fannie Mae and Freddie Mac during 2005-2007
FHFA	$280. M	Barclays	to settle claims of violations of federal and state securities laws in connection with private-lable mortgage-backed securities purchased by Fannie Mae and Freddie Mac duirng 2005-2007
FHFA	$110. M	First Horizon	settlement resolves claims in the lawsuit FHFA v. First Horizon National Corporation, et al. (S.D.N.Y.), alleging violations of federal and District of Columbia securities laws in connection with private-label mortgage-backed securities purchased by Fannie Mae and Freddie Mac during 2005-2007
DOJ	$2.6 B	Credit Suisse	pled guilty to helping Americans lie to avoid paying taxes
NYS, DOJ	$8.9 B	BNP Paribas	transferring dollars on behalf of countries blacklisted by United States
DOJ, HUD, CFPB	$968. M	SunTrust Mortgage	mortgage origination, servicing, and foreclosure abuses
DOJ	$200. M	U.S. Bank	violated the False Claims Act by knowingly originating and underwriting mortgage loans insured by the Federal Housing Administration (FHA) that did not meet applicable requirements
DOJ, CFBP	$169. M	GE Capital Retail Bank	engaged in a nationwide pattern or practice of discrimination by excluding Hispanic borrowers from two of its credit card debt-repayment programs
FHFA	$99.5 M	RBS Securities	resolves claims against RBS in FHFA v. Ally Financial Inc. in the Southern District of New York, alleging violations of federal and state securities laws in connection with private-label mortgage-backed securities purchased by Freddie Mac during 2005-2007
DOJ, NYS, Colorado, FHFA	$4. B	Citigroup	to resolve federal and state civil claims related to Citigroup's conduct in the packaging, securitization, marketing, sale and issuance of residential mortgage-backed securities (RMBS) prior to Jan. 1, 2009
AIG	$650. M	Bank of America	to settle allegations of fraud in the bank's packaging and selling of mortgages to investors during housing bubble
DOJ	$320. M	SunTrust Mortgage	concludes a criminal investigation of SunTrust's administration of the Home Affordable Modification Program (HAMP). SunTrust misled numerous mortgage servicing customers who sought mortgage relief through HAMP: made material misrepresentations and omissions to borrowers in HAMP solicitations, and failed to process HAMP applications in a timely fashion
SEC	$275. M	Morgan Stanley	misleading public disclosures about the level of delinquent subprime mortgages in two mortgage-backed securities the firm sold to investors in 2007 during the early days of the financial crisis
CFTC	$105. M	Lloyds Banking Group	Libor rate rigging case
DOJ	$86. M	Lloyds Banking Group	manipulation of submissions for the London InterBank Offered Rate (LIBOR), a leading global benchmark interest rate
Federal gov	$1.27 B	Bank of America	Countrywide committed mail and wire fraud by selling thousands of toxic mortgages to Fannie Mae and Freddie Mac with lies that they were quality investments
DOJ, SEC, 6 states	$16.65 B	Bank of America	$5 billion penalty under the Financial Institutions Reform, Recovery and Enforcement Act (FIRREA) and provide bill
DOJ	$100. M	BB&T	subsidiary of the BB&T Corporation was not entitled to $660 million in tax benefits that BB&T claimed based on its participation in an abusive tax shelter known as Structured Trust Advantaged Repackaged Securities (STARS).
Total	$138.59 B		