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Presidential Address: Does Finance Benefit Society?

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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 underappreciation 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.

FOR MOST ACADEMIC ECONOMISTS 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 the financial sector: from managing risk (Froot, Scharfstein, and Stein (1993)) to providing valuable price signals (Hayek (1945); Holmstrom and Tirole (1993)), from monitoring (Diamond (1984)) to designing securities that alleviate informational asymmetries (Myers and Majluf (1984)). Furthermore, there appears to be plenty of evidence that finance is positively associated with growth (e.g., Levine (2005)) and entrepreneurship (Guiso, Sapienza, and Zingales (2004), Mollica and Zingales (2008)), and even with better education (Flug, Spilimbergo, and Wachtenheim (1998), Levine and Rubinstein (2014)), and less inequality (Beck, Demirgüç-Kunt, and Levine (2007)).

Yet, this feeling is not shared by society at large. Fifty-seven percent 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 U.S. financial system benefits or hurts the U.S. economy?," 48% of a representative sample of adult Americans respond that finance hurts the U.S. economy, while 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

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[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.

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as far back as the Old Testament.[2] The aftermath of the 2007 to 2008 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 news of a fresh financial scandal. After the financial crisis, Americans' trust towards bankers dropped tremendously (Sapienza and Zingales (2012)) and has not yet fully recovered.

It is very tempting for us academics to dismiss such distrust 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.

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 were 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 that finance can play in society depends on the public's perception of our industry.

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

What can we do as a profession? First of all, we should 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 growth in the financial sector over the last 40 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 existing

[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).

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 (2013)). While there are several encouraging examples along 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 an 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, Malhotra, and Murnighan (2011), Cohn, Fehr, and Maréchal (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 I discuss why we should care about this dissonance. Section II argues that our own perception of the benefits of finance is inflated. Section III presents evidence of why the financial sector can be excessively big and why market forces cannot bring it in check. Sections IV to VI outline what we can do from research and teaching points of view. Section VII concludes.

I. Why Should We Care?

Facing (often exaggerated) attacks by the media, it is tempting for financial economists to close ranks and defend the industry we study. If the healthcare industry—which has grown in relative size more than the financial one—is not under attack, why should financiers be?

This attitude is very myopic. While the financial sector can and does add a lot of value, some of the criticism is well founded. An industry does not pay $138 billion in fines in two years (see Table I) if nothing is 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.

A. Monetary vs. Social Rewards

In the social prestige arena, finance starts at a disadvantage vis-à-vis other fields. Under 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. People who engage in such activity are held in high regard by society. By contrast, tax-dodging is an activity with high private return but negative social returns. Not surprisingly, tax dodgers and their enablers are not regarded highly.

Table I
Fines Paid by Financial Institutions to U.S. Enforcement Agencies 2012 to 2014

Agency	Amount	Who	Why
DOJ, HUD, 49 states	$25 Billion	Wells Fargo, JPMorgan Chase, Citigroup, Bank of America, Ally Financial	Collective agreement to address mortgage loan servicing and foreclosure abuses.
DOJ, NY	$619 Million	ING Bank N.V.	Conspiring to violate the International Emergency Economic Powers Act (IEEPA) and the Trading with the Enemy Act, (TWEA) and illegally moving billions of dollars through the U.S. financial system, in violation of New York state laws on behalf of sanctioned Cuban and Iranian entities.
CFTC	$200 Million	Barclays	Manipulation and false reporting of Libor and Euribor rates.
DOJ	$160 Million	Barclays	Manipulation and false reporting of Libor and Euribor rates.
SEC	$35 Million	Oppenheimer Funds Inc.	Misleading statements about two of its mutual funds' losses and recovery prospects in the midst of the credit crisis in late 2008.
CFTC	$5 Million	Morgan Stanley	Unlawfully executed, processed, and reported numerous off-exchange futures trades as exchanges for related positions (EFRPs) to the Chicago Mercantile Exchange (CME) and Chicago Board of Trade (CBOT).
DOJ	$175 Million	Wells Fargo	Discriminating against qualified African-American and Hispanic borrowers in its mortgage lending from 2004 through 2009 by steering wholesale and retail borrowers into subprime mortgages when non-Hispanic whites with similar credit profiles received prime loans and charging African-American and Hispanic wholesale borrowers higher fees and rates than white borrowers because of their race or national origin.

(*Continued*)

Table I—*Continued*

Agency	Amount	Who	Why
SEC	$6.5 Billion	Wells Fargo	Selling investments tied to mortgage-backed securities without providing sufficient information to understand their complexity or disclosing the risk to investors; concealed risks, terms and improper pricing in CDOs and other complex structured products from investors.
SEC	$14 Million	Well Advantage	Insider trading.
SEC	$296.9 Million	JPMorgan Chase	Misleading disclosures to investors about mortgage-related risks and exposure.
SEC	$120 Million	Credit Suisse	Misleading disclosures to investors about mortgage-related risks and exposure.
DOJ, OCC, Federal Reserve	$1.92 Billion	HSBC Holdings Plc. and HSBC Bank	Violating the Bank Secrecy Act (BSA), the International Emergency Economic Powers Act (IEEPA), and the Trading with the Enemy Act (TWEA); failing to maintain an effective anti-money laundering program, failure to conduct due diligence on foreign correspondent account holders, and conducting illegal transactions on behalf of customers in countries subject to U.S. sanctions.
CFTC, DOJ	$1.2 Billion	UBS	Manipulation and false reporting of Libor and Euribor rates.
DOJ, NY	$227 Million	Standard Chartered	Conspiring to violate the International Emergency Economic Powers Act (IEEPA); violate U.S. and New York state laws governing transactions involving countries subject to U.S. sanctions.
Federal National Mortgage Association (Fannie Mae)	$11.6 Billion	Bank of America	Selling Fannie Mae hundreds of billions of dollars worth of defective mortgages and mishandling servicing of mortgages.

(*Continued*)

Table I—*Continued*

Agency	Amount	Who	Why
Federal Reserve, OCC	$9.3 Billion	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	$290 Million	Royal Bank of Scotland	Manipulation and false reporting of Libor and Euribor rates.
SEC	$600 Million	CR Intrinsic Investors	Participating in an insider trading scheme involving a clinical trial for an Alzheimer's drug being jointly developed by two pharmaceutical companies.
FRBNY	$62 Million	Bank of America	Losses related to mortgage securities that Maiden Lane II purchased from AIG.
NCUA	$165 Million	Bank of America	Losses related to purchases of residential mortgage-backed securities by failed corporate credit unions.
SEC	$6.5 Million	Fifth Third	Misleading investors through improper accounting of commercial real estate loans.
SEC	$3.5 Million	CapitalOne	Understating millions of dollars in auto loan losses.
MBIA	$1.7 Billion	Bank of America	Misrepresentation by Countrywide of its mortgage values and underwriting standards.
FHFA	$885 Million	UBS	To settle 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 Million	JPMorgan Chase	To settle allegations that in 2010 JP Morgan Ventures Energy Corp traders manipulated the electricity market in California and the Midwest.
DOJ, NY	$23.8 Million	Liechtensteinische Landesbank AG	Non-prosecution agreement for opening and maintaining undeclared bank accounts for U.S. taxpayers from 2001 through 2011: assisting large

(*Continued*)

Table I—*Continued*

Agency	Amount	Who	Why
			number of U.S. taxpayers in evading their U.S. tax obligations, filing false federal tax returns with the IRS, and otherwise hiding accounts from the IRS.
SEC	$50 Million	UBS	Violating securities laws while structuring and marketing a collateralized debt obligation (CDO) through failure to disclose that it kept millions of dollars in upfront cash that it received while acquiring collateral for the CDO rather than transferring it to the CDO.
OCC, SEC, Federal Reserve	$700 Million	JPMorgan Chase	To settle all claims about management and oversight of the unit involved in the London Whale trades.
OCC	$389 Million	JPMorgan Chase	Improperly charging customers for add-on services when they signed up for credit cards.
DOJ	$2.85 Million	Chevy Chase Bank	Engaging in a pattern or practice of discrimination against qualified African-American and Hispanic borrowers in home mortgage lending from 2006 through 2009.
CFTC, DOJ	$800 Million	Rabobank	Manipulation and false reporting of Libor and Euribor rates.
CFTC	$100 Million	JPMorgan Chase	To settle charges relating to London Whale trades.
DOJ, NCUA, FDIC, FHFA, NY, CA, DE, IL, MA	$13 Billion	JPMorgan Chase	To settle series of lawsuits over sale of toxic mortgage-backed securities.
SEC	$150 Million	RBS Securities	Misleading disclosures to investors about mortgage-related risks and exposure.
FHFA	$1.9 Billion	Deutsche Bank	To settle claims alleging violations of federal and state securities laws in connection with private-label mortgage-backed securities purchased by Fannie Mae and Freddie Mac between 2005 and 2007.

(*Continued*)

Table I—*Continued*

Agency	Amount	Who	Why
DOJ, CFBP	$35 Million	National City Bank	Engaging in a pattern or practice of discrimination by increasing 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 Billion	Citigroup	Knowingly securitizing defective mortgages ahead of the crisis
DOJ	$2.6 Billion	JPMorgan Chase	Lax oversight of Bernie Madoff.
Treasury Dept. OFAC	$152 Million	Clearstream Banking, S.A.	To settle potential civil liability for violations surrounding use of Clearstream's omnibus account with a U.S. financial institution as a conduit to hold securities on behalf of the Central Bank of Iran.
FHFA	$1.25 Billion	Morgan Stanley	To address 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 Million	JPMorgan Chase	Violating the False Claims Act by knowingly originating and underwriting noncompliant 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 Million	Credit Suisse	Violating federal securities laws by providing cross-border brokerage and investment advisory services to U.S. clients without first registering with the SEC.

(*Continued*)

Table I—*Continued*

Agency	Amount	Who	Why
FHFA	$122 Million	Société Générale	To resolve claims in 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 Billion	Bank of America	Litigation over mortgage securities sold to Fannie Mae and Freddie Mac between 2005 and 2007.
FHFA	$885 Million	Credit Suisse	To resolve all claims in 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 Million	Barclays	To settle claims of violations of federal and state securities laws in connection with private-label mortgage-backed securities purchased by Fannie Mae and Freddie Mac during 2005–2007.
FHFA	$110 Million	First Horizon	To resolve claims in 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, Federal Reserve, NY	$2.6 Billion	Credit Suisse	Helping U.S. taxpayers file false income tax returns and other documents to the IRS.
NY, DOJ	$8.9 Billion	BNP Paribas	Transferring dollars on behalf of countries blacklisted by United States.

(*Continued*)

Table I—*Continued*

Agency	Amount	Who	Why
DOJ, HUD, CFPB	$968 Million	SunTrust Mortgage	Mortgage origination, servicing, and foreclosure abuses.
DOJ	$200 Million	U.S. Bank	Violating 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 Million	GE Capital Retail Bank	Engaging in a nationwide pattern or practice of discrimination by excluding Hispanic borrowers from two of its credit card debt-repayment programs.
FHFA	$99.5 Million	RBS Securities	To resolve 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, NY, CO, FHFA	$4 Billion	Citigroup	To resolve federal and state civil claims related to its conduct in the packaging, securitization, marketing, sale and issuance of residential mortgage-backed securities (RMBS) prior to Jan. 1, 2009.
AIG	$650 Million	Bank of America	To settle allegations of fraud in the bank's packaging and selling of mortgages to investors.
DOJ	$320 Million	SunTrust Mortgage	To conclude a criminal investigation of its administration of the Home Affordable Modification Program (HAMP): misled many 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.

(*Continued*)

Table I—*Continued*

Agency	Amount	Who	Why
SEC	$275 Million	Morgan Stanley	Misleading public disclosures about delinquency status of subprime mortgages in two residential mortgage-backed securities the firm sold to investors in 2007.
CFTC	$105 Million	Lloyds Banking Group	Manipulation and false reporting of Libor rate.
DOJ	$86 Million	Lloyds Banking Group	Manipulation of submissions for the Libor rate.
DOJ	$1.27 Billion	Bank of America	Mail and wire fraud committed by Countrywide in selling thousands of toxic mortgages to Fannie Mae and Freddie Mac with lies that they were quality investments.
DOJ, SEC, 6 states	$16.65 Billion	Bank of America	To resolve federal and state claims regarding financial fraud leading up to and during the financial crisis.
DOJ	$100 Million	BB&T	Participating in an abusive tax shelter known as Structured Trust Advantaged Repackaged Securities (STARS) to subvert the foreign tax credit rules and generate illicit tax benefits.
Total	$137.74 Billion		

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 not for doctors. In finance, however, this difference is often extreme. In 1992, George Soros's short forced the pound out of the European Exchange Rate Mechanism (Ferguson and Schlefer (2009)). While one could argue that his social contribution was big (the United Kingdom got out of a fixed exchange rate regime that was penalizing its economy), it was not very visible and easy to measure. By contrast, his private profit ($1 billion) 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, empirical measures of the benefits of an efficient market are fairly elusive.

But even if we do our best, the deck is stacked against us. Regardless of their social return, large and rapid accumulations of wealth (like that of Soros) 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 associated with 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.

B. Reputation and Good Finance

If political power is disproportionately in the hands of large donors, as 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 the 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, barriers to entry 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 be respected now, but also that it be respected in the future. If a lender does not expect her contract to be enforced, she will never extend arm's length credit. Instead, she will seek some degree of economic or political control to protect her investment.

True competition can occur only on a level playing field and this level 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 as 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.

C. The Vicious Circle

The rule of law is a crucial ingredient in the development of competitive financial markets (La Porta, López-de-Silanes, and Shleifer (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% 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 perceives his country as corrupt, the more he demands government intervention. They also find that increases in corruption in a country precede increases in 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 neutralized 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.

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 normal times.

D. No Easy Way Out

How can we 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 created in 1933 to prevent the kind of bank runs that forced more than 5,000 banks to close in the early 1930s. Similarly, the Securities and Exchange Commission (SEC) came into being in 1934 to prevent the stock market manipulations that had prevailed during the 1920s, the Office of Thrift Supervision was created in 1989 following the savings-and-loan crisis of the late 1980s and the Public Company Accounting Oversight Board (PCAOB) was created in response to the Enron and WorldComm accounting scandals. The 2007 to 2008 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 a difference. Over time, however, the sense of purpose fades, while constant

[3] Hulse, Carl, and David M. Herszenhorn, 2009, House approves 90% tax on bonuses after bailouts, *New York Times*, March 19, 2009.

pressure from 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, this theory should be kept in mind when thinking about how to intervene. In particular, 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 as 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 so if we do not believe there is a problem. Below, I argue that we do have a problem. I then outline what we can do about it.

II. 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".[4] 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 evidence to justify this conclusion?

A. 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 is generally the case), Pareto optimality of the equilibrium is not guaranteed. In fact, Greenwald and Stiglitz (1986) show that when markets are incomplete, the equilibrium is not, in general, Pareto efficient. 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) further shows that far from

[4] Stiglitz, Joseph E., "Financial innovation: Against the notion that financial innovation boosts economic growth," The Economist, February 23–March 3, 2010.

being an exception, Hart's result is robust and pervasive. Thus, there is no theoretical basis for the presumption that financial innovation, by expanding financial opportunities, increases welfare.

B. Lack of Evidence

A large body of evidence (summarized in Levine (1997, 2005) and Beck (2011)) documents 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 cross-country analysis (Zingales (2003)), this evidence faces two challenges in addressing whether the U.S. financial system is excessively big. First, that the relationship exists on average does not imply that it is true on the margin. Second, there is precious little evidence of a positive role of forms of financial development that are particularly important in the United States, for instance, the equity market, the junk bond market, the option and future markets, and interest rate swaps.[5]

More recent evidence challenges the view that more credit is always good. Arcand, Berkes, and Panizza (2012) find a nonmonotone relationship between the ratio of credit to GDP and growth, with a tipping point when credit to the private sector reaches around 80% to 100% of GDP. At this level, the marginal effect of financial depth on output growth becomes negative. Cecchetti and Kharroubi (2012) arrive at a similar conclusion. Schularick and Taylor (2012) further 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 the increase in the ratio of debt to GDP (the flip side of credit to GDP) as the main culprit of the 2007 to 2008 financial crisis. Thus, if anything, the empirical evidence suggests that credit expansion in the United States has been excessive.

The problem is even more severe for other parts of the financial system. There is remarkably little evidence that the existence or size of an equity market matters for growth. Da Rin, Nicodano, and Sembenelli (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) estimate the correlation between various stock market measures and economic growth and find that only market turnover (the 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 of this result is a product of data snooping. Furthermore, I am not aware of any evidence that the

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

creation and growth of the junk bond market, the option and future markets, or over-the-counter derivatives are positively correlated with economic growth.

In interpreting a body of empirical literature one has to use Sherlock Holmes's famous principle of the dog that didn't bark. Before the 2007 to 2008 financial crisis, incentives to write a paper documenting the benefit of these markets were very high and the data were readily available. Thus, if no paper has been published it is not for lack of trying, but for a lack of success in finding a statistically significant result. Therefore, the lack of published evidence can be safely interpreted as evidence of a lack of any correlation.[6]

To this point it is interesting to note that all the above-mentioned evidence on the negative effects of financial development has been collected since the crisis, even that based on pre-crisis data, (see Philippon (2012) for a notable exception). Thus, the same evidence could have been gathered before the crisis, but 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.

C. 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 on trust. Both sectors are plagued by conflicts of interest and experience enormous abuse and fraud. In both sectors, 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 natural market forces. And, both sectors lobby heavily to direct government intervention to their own advantage. In 2014 these sectors were at the top of the ranking for money spent, on lobbying, with $369M (finance) and $367M (healthcare).[7] Thus, the parallel dynamics are more suggestive of a common problem than of the inexistence of a problem.

D. Money Doctors

In an attempt to explain the growing size of the money management business documented in Greenwood and Scharfstein (2013), Gennaioli, Shleifer, and

[6] Of course, lack of statistical significance is often due to noise in the data. Thus, we cannot necessarily conclude that the correlation is zero. Rather, we can only conclude that the existing measures will produce zero correlation.

[7] See https://www.opensecrets.org/lobby/top.php?indexType=c&showYear=2014.

Vishny (2014) argue that—like healthcare—finance is a service that 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 demand for this service has grown. This view is supported by Von Gaudecker (2015), who shows that financially illiterate workers benefit from financial advice: they gain roughly 50 bps of extra return per given level of risk.

As for healthcare, the question is not whether people benefit from doctors, but what is the cost-to-benefit ratio. In the United States healthcare expenditure to GDP is 18%, almost twice that of the United Kingdom (9%), Sweden (10%), Canada (11%), and Germany (11%).[8] 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.[9] In Sweden, finance to GDP is half 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.

Also as for healthcare, another question is 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, profitability, and 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.[10] Has this been good or bad for society overall?

III. An Hypertrophic Financial Sector

The last 40 years have witnessed a major revolution in finance. While 40 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 40 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 go to the opposite extreme and argue that all finance is bad or useless. To separate the wheat from the chaff, we need to identify the rent-seeking components of finance, that is,

[8] See http://data.worldbank.org/indicator/SH.XPD.TOTL.ZS.

[9] World Health Organization, http://apps.who.int/gho/data/node.main.688.

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

those activities that while profitable from an individual point of view are not so from a societal point of view.

In what follows I focus on some corporate finance examples, ignoring a vast literature, started by Hirshleifer (1971), on excessive information discovery and an equally large literature on excessive trading (French (2008)).[11] I focus on these examples not because they are the most important cases or because they reflect where my expertise is, but because they are less discussed in the literature. Since Hirshleifer (1971) we have understood that speculative activity can be excessive from a societal point of view. There is not an equal understanding, however, of how both commercial and investment banking sectors might grow out of proportion.

A. Duping Unsophisticated Investors

In the financial sector, "duping" takes two forms. There is "straight" duping, where investors are sold a product that they do not understand and would have never wanted had they understood it, and "indirect" duping, where investors are attracted to product bundles that are convenient for sophisticated investors (who buy the cheap part and disregard the expensive one) but turn out to be extremely costly for unsophisticated investors (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 competition, measured as the introduction of exchange-traded fund (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 that they do not want to refinance was one of the reasons behind the 1933 legislation to separate investment and commercial banks (also known as the 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 find no evidence that commercial banks systematically fooled the public. However, the same cannot be said for other countries. Italian banks dumped Parmalat and Cirio bonds on their depositors shortly before these companies went bankrupt.[12]

Another example of "straight" duping is represented by mortgages sufficiently complicated not to be understood by borrowers. The level of complication

[11] For recent examples in this literature see Bolton, Santos, and Scheinkman (2014) and Biais, Foucault, and Moinas (2015).

[12] Maciocchi, Patrizia, 19 Ottobre 2012, Cassazione: L'investimento sui bond Ciro e Parmalat era a rischio. Si al risarcimento, *Il Sole 24 Ore*.

does not need to be extreme. By using an experiment of mandatory counseling in Illinois, Agrawal et al. (2014) 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 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 limit their purchase to the basic good, while unsophisticated consumers do not pay attention to the price of the shrouded add-on and buy it in addition to the basic good. In equilibrium the basic good will be priced below the marginal cost because it will be subsidized by the excessive profits on the shrouded add-on. But the distortion will not be eliminated.

These distortions are present in every sector, not just in finance. But, the financial sector provides much greater opportunities for abuse, thanks to the flexibility provided by financial engineering. These opportunities are so large that even governments take advantage of them. For example, subsidized credit is a very popular form of government intervention because it is less transparent to taxpayers. So are the implicit bailout options to Fannie Mae and Freddie Mac, and many nonrecourse loans granted by the Fed during the crisis. "A key insight—writes a senior official in the Bush administration—is that underpricing 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 or misrepresentation by the government, one may wonder whether 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 has two functions: first, to create incentives for the buyer to collect information about his purchases, and second, to minimize 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.

B. 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. This is 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 to make customers insensitive to the price of the product. However, this is also a way to prey on the moral hazard present in healthcare. Insured customers tend to disregard prices and overconsume 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 neutralize insurance companies' attempt to mitigate the moral hazard problem.

As these examples suggest, exploiting customers' agency problems is a common and time-honored technique. Of course, principals could react by requiring that their employees rebate their miles or by requiring insured clients to pay back their drug rebates. These countermeasures, however, take time and are plagued with problems. Their efficacy depends very much on the speed of marketing innovation, the flexibility of the technology used to exploit the 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 principals (be they shareholders in publicly traded companies or taxpayers) are dispersed with little ability to coordinate a move. For this reason, financial products designed to prey on existing agency problems are widespread.

Most executive compensation packages, for example, are linked to stock prices through options and other financial variables, from earnings to cash flow. A clever use of derivatives can increase the value of the options and the stated earnings or cash flow given the performance of the company. For example, by increasing risk, derivatives can increase the value of executives' stock options, and by swapping a fixed rate with a floating rate, they can easily increase current earnings. A board could try to mitigate the effects of such derivatives in the CEO's compensation package. However, having served on a compensation committee, I can attest to how difficult this is to achieve, even when board members have 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 taxpayer. Pérignon and Vallée (2013) 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 employ 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 based not on the prevailing spot market exchange rates 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 abovementioned 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., Piga (2001)), but it is the one we know the most about 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.

C. 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 those in the healthcare sector, in spite of being half its size.

For the period 1996 to 2004, Dyck, Morse, and Zingales (2014) estimate that the cost of (mostly financial) fraud among U.S. companies with more than $750 million in revenues is $380 billion a year. Table I reports the fines paid by financial institutions to U.S. enforcement agencies between January 2012 and December 2014. The total amount is $138 billion, $113 billion 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 a fraudulent institution did not go bankrupt, it could only be sued if it had enough capital. The table includes just one fine regarding Madoff, for only $2.9 billion, when the overall amount of the Madoff fraud totaled $64.8 billion.[13] Finally, Dyck, Morse, and Zingales (2014) estimate that only one-fourth of the fraud were 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, Seru, and Witkin (2013) find that close to 10% of the $2 trillion nonagency RMBS issued between 1999 and 2007 misreport occupancy status of borrower and/or second liens. These results are also supported by the

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

declaration of a whistleblower inside JPMorgan Chase who reported that 40% of the mortgages of some RMBS were based on overstated incomes.[14]

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 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 $113 billion of mortgage-related fraud, nor for the Libor scandal.

Finally, not only is the pervasiveness of fraud remarkable—from Libor fixing to exchange rate manipulation, there is hardly any activity untouched by fraud—but also the nonchalance of the people committing it. This is illustrated by one of the many email exchanges among Libor traders:

> *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.[15]

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 overuse 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 arbitrage opportunities. Customers are often not seen as people to respect, but as counterparties to take to the cleaners. It should not come as a surprise, then, that—according to a whistleblower—investment bankers were referring to their clients as Muppets.[16] If the only goal

[14] Taibbi, Matt, "The $9 billion witness: Meet JP Morgan Chase's worst nightmare," *Rolling Stone*, November 6, 2014.

[15] See http://www.huffingtonpost.co.uk/2013/02/06/libor-scandal-outrageous-traders-exchanges_n_2630945.html.

[16] "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.

is enrichment, there is a risk that abuses and fraud become not a distortion, but a continuation of the same strategy by other means.[17]

D. The Distortionary Role Played by the Government

All too often, the inefficiencies of the financial sector are blamed on market imperfections, and government intervention is invoked as the solution (e.g., Stiglitz (1991)). This approach ignores that the observed inefficiency of the financial sector 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, Lustig, and Van Nieuwerburgh (2012) show, during the 2007 to 2008 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 $100 billion, reducing banks' cost of equity. As I discuss in more detail below, 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 (a guarantee that became explicit in the summer of 2008). The subsidy for Fannie alone was estimated at $6.1 billion in 2000 and $13.6 billion in 2003.[18] When the need to intervene materialized, the effective cost was more than $180 billion.[19]

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

[17] 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 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).

[18] Congressional Budget Office, "Updated Estimates of the Subsidies to the Housing GSEs," April 2004.

[19] 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 U.S. House of Representatives Committee on the Budget, June 2, 2011.

data, the probability of a shock as severe 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."[20]

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?'"

E. 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. But, when regulation is inefficient and serving the interests of the large incumbents, regulatory arbitrage might actually decrease existing distortions, with welfare benefits. Unfortunately, we do not know how to distinguish the two scenarios ex ante. Lacking a theory of how frequently regulation is inefficient and the magnitude of the inefficiency, it is impossible to make a statement about the overall cost of regulatory arbitrage. However, to the extent 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 lead to inefficiencies as well. Even if principals can prevent it through ex ante contractual restrictions, these restrictions are likely to be costly (because they prevent some legitimate actions) and incomplete (because they cannot fully prevent opportunism). Thus, all these components of finance are redundant.

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 (2012)), the deadweight loss can be substantial.

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

[20] Joseph E. Stiglitz, Jonathan M. Orszag, and Peter R. Orszag, 2002, "Implications of the New Fannie Mae and Freddie Mac Risk-based Capital Standard," *Fannie Mae Papers*.

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: talent is wasted in searching for better duping opportunities, and mistrust towards the financial sector increases.

Last but not least, all of 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 real estate 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.[21] 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's percentage commission is unchanged, selling a house becomes more lucrative thanks to the land's escalating value. 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 sector's reputation is associated with the firm, not the individual. Thus, new entrants have to climb the ladder inside existing organizations, and hence equalization of compensation takes longer.[22]

IV. What Can We Do in Empirical Research?

A. Whistleblower

"Publicity," wrote Justice Louis Brandeis (2009), "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

[21] When the seller negotiates a lower commission, he must bargain not only 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.

[22] Axelson and Bond (2015) show that overpayment can occur even in a fully competitive equilibrium when effort is difficult to monitor and the job involves large amounts of capital per employee.

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 uncovering scandals. From collusive quotes on NASDAQ (Christie and Schultz (1994)) to backdated stock options (Lie (2005)), from overinflated real estate transaction prices (Ben-David (2011)) to disappearing analysts' recommendations (Ljungqvist, Malloy, and Marston (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 were late in spotting mortgage fraud. Even today only two academic papers document it (Piskorski, Seru, and Witkin (2013), Griffin and Maturana (2015)). 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 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 (2013)).

The problem is potentially even more severe with regulators, who have captive research departments. Regulators, being hierarchical organizations, have their top-most supervisors vet all research done inside their organization, especially research 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 industry, they tend to be very risk-averse: they do not want a scandal on their watch. This is why they tend to be very averse to granting access to data to independent researchers: they fear the researchers 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 take place in the United States as well and create a potentially serious sample selection bias in the type of questions that can be analyzed and hence in the published evidence.

B. Ex Post Cost-Benefit Analysis

"Publicity" does not work only against fraud; it can also work in favor of 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 over the following two decades. Today, 12 million Americans per year use payday loans, spending on average $520 in interest for loans of on average just $375 (Bourke, Horowitz, and Roche (2012)). There are more payday loan shops than McDonald's and Starbucks stores combined (Zinman (2010)).

Not surprisingly, this practice is very controversial and has been banned in several states. Yet, it could be defended as a unique financing opportunity for low-income people, who otherwise would find it impossible to cope with unexpected shocks or would have to rely on loan sharks or internet payday loans, with worse consequences. Both arguments have some validity, and 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%. Similarly, Carrell and Zinman (2014) 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.

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

These different results appear to be in contradiction. In reality, they reflect the heterogeneity in the use of payday loans. To appreciate this, 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 (Bourke, Horowitz, and Roche (2012)). 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 these borrowers say

they would have done without access to payday loans (Bourke, Horowitz, and Roche (2012)). 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 funds 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% less in interest than in 2009 under the conventional payday loan model, saving $41.9 million (Bourke, Horowitz, Lake and Roche (2013)).

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

This result is consistent with Avery and Samolyk (2011), 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 real estate brokers, in the presence of free entry, the possibility of charging abnormal profit margins leads 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 they are paying more than if they were in an installment loan product, which does not induce the spiral of unnecessary loan renewal and, eventually, default. In the presence of this misunderstanding, lenders find irresistible the opportunity to charge very high fees. This is a form of catering products to take advantage of the cognitive limitations of 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, and in fact 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 overborrowing and the excessive entry. Competition works only if we restrict the dimension along 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 will this solution 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 belonging to their interest group. Unsophisticated customers are unable to appreciate the cost of conventional payday loans in the marketplace, let alone 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 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 was 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?

V. What Can We Do in Theoretical Research?

All researchers are affected by fads, by their ideological beliefs, and by other 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 resist 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 ad hoc adaptations of the framework to avoid falsification, as described by Kuhn (1962) and as occurs so frequently in our field. To 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.

A. Be Rigorous, Not Policy-Relevant

When we engage in policy work we try to be relevant. First and foremost, theoretical work needs to be rigorous, not policy-relevant. If our main goal is to be policy-relevant, we can do empirical work. The reason rigor is so important is that our set of tools is so powerful that we run the risk of our models simply becoming 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 provides only a partial solution, but it is much less costly for 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 prefer to publish "more realistic" schemes.

B. 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."[23]

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. Not because they are not relevant, but rather because they inevitably embed the lobbying pressure of powerful incumbents. By incorporating them in our analysis we run the risk of (inadvertently) becoming the mouthpiece 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 to eliminate such distortion.

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

C. Keep It Simple, Stupid

When we economists try to derive policy implications, we tend to prefer elaborate solutions that 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. For example, this is the case in Holmstrom and Milgrom (1987), where they show that linear incentives schemes are optimal when the possibility of intertemporal 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

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

distortions, but it also makes it easier for the public to monitor, reducing the amount of capture.

Finally, when we factor in 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 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.[24]

Similarly, the simple (in fact, ideal) way 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 these margins, however, 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, derivative-free financial accounts. This would eliminate any opacity and ambiguity. Importantly, it would not prevent good transactions, but it would stop the bad ones. It is reasonable to expect that the politicians in French local governments studied by Pérignon and Vallée (2013) would not have issued 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 the principle that any transaction designed for the sole purpose of reducing taxes is illegal. This solution would amount 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, the purpose of easing regulatory arbitrage is not obvious. 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

[24] 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 would choose to get out of selling complicated products to unsophisticated people, avoiding the problem altogether. Second, the uncertainty could be limited by guidelines issued by the American Finance Association on what is deemed as an appropriate instrument for various categories of buyers (not unlike what the American Medical Association does for medicine).

trying to bypass was an inefficient and senseless rule, then the charge could be dropped.

VI. What Can We Do in Teaching?

The Libor traders' emails reported above, like many other 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 (2011) argues, money is the only metric in the financial world. Thus, people motivated by other goals may prefer to enter different businesses. There is some evidence (Frey and Meier (2003)) that business economics students are more selfish than the average student and that this higher level of selfishness is due to self-selection, not indoctrination.[25]

Yet, indoctrination seems to be playing a role. Cohn, Fehr, and Maréchal (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. This result is consistent with Wang, Malhotra, and Murnighan (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 rather 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 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 ethics courses, validating the implicit assumption that social norms are a matter of interest only for the less bright students. Several social norms

[25] 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.

are crucial to the flourishing of a market economy. We should teach them in our regular classes, at the very least emphasizing how violating these norms has a negative effect on reputation.

We should also be much more transparent about 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, that is, 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 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, Coughlan, and Hennessy (2002)). While some of these biases might be inevitable, the more aware we become, the more we can correct them.

VII. Conclusion

As a profession we financial economists have been too proud of the technical achievements and 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 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 have been raised against us are well 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. The most important one is awareness of the problem. Without it, no solution can work. My hope with this piece is to plant a seed. Only time will tell if it will flourish.

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