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BREAKING-UP THE BANKS: FINANCIAL CONGLOMERATES, SYSTEMIC RISK AND THE GLOBAL FINANCIAL CRISIS

PROF. INGO WALTER

Vice-Dean, Stern School of Business, New-York University

Thank you very much, Raina. As far as my poor French allows, I think you've just given my speech, and done it in a much more efficient way than I would have. I'm very pleased to be the middle speaker of three in a very logically organized conference, with Martin Hellwig speaking about macro and macro prudential issues and then tomorrow Mr. Hildebrand talking about the regulatory issues. I'm what you might call the meat in the sandwich and I'll talk about the institutional questions.

If I were giving this talk in the U.S., I would start with an apology because in the 1980s many academics, including myself, spent several years trying to liberalize the American financial markets and in particular to eliminate the so-called Glass-Steagal legislation which separated the securities industry from the banking sector in 1933. We had 66 years of that separation, and our argument was, what you need is a level playing field, you have regulation by function; if you're in the securities industry you're going to be regulated as such and if you are a bank you'll be regulated as such. But if you eliminate these artificial restrictions and then let the banks and other firms develop their own strategies and if bigger is better they'll get bigger, and if broader is better they'll get broader. So let that be the determination of the market and not regulations that were put in place in 1933.

We finally got our wish in 1999 and the Glass-Steagal restrictions were eliminated, and within 2 years every major bank was up to its neck in the biggest set of corporate scandals we had ever had in the U.S.: Enron, Worldcom, Global Crossing and so forth. In almost every case, what they were doing was chasing fees, particularly investment banking fees in this new area that they previously couldn't operate in, and they basically backloaded their exposure onto their credit books. So, I felt like the dog that caught the bus. If you really want to catch the school bus, the worst thing that can happen to you is to actually catch the school bus, and you get rolled over by the wheels. So if this were in the U.S., I would apologize for being part of that liberalization move and its unintended consequences. So one of the things you learn is that there are always unintended consequences, and there will be, going forward.

The second thing is, we don't know much about institutions, at least not enough. So if we take, let's say, matched pairs, like UBS and Credit Suisse, why would it be that, challenged by the same global turmoil, the same set of market conditions, the same set of monetary conditions which Professor Hellwig mentioned yesterday, why would it be that one of them does relatively well and the other crashes and burns, and puts a huge burden on the Swiss public? Why is that? These are both well-managed firms historically, they have a lot of smart people working for them. Why is it that you see such different outcomes? In the U.S., you take Merrill Lynch and Goldman Sachs, two investment banks. One of them does extraordinarily well and the other one basically dies and is taken over by Bank of America. In the commercial banking area, you take Wachovia and Wells Fargo; one of them survives the process extraordinarily well and the other one ultimately gets acquired by another firm. So there are a lot of unexplained variables that academics still have to come to grips with. A lot of them, I suspect, have to do with governance, have to do with risk control and with revenue generation. Issues like that sit at the heart of these firms, which arguably explains those different outcomes.

That's the kind of thing that people like me are interested in as we go forward and try to come up with an operating platform that will retain some of the benefits of what we've had and at the same time remediate some of the weaknesses. So the idea is to talk a little bit about what we, as ordinary people, expect from the financial system.

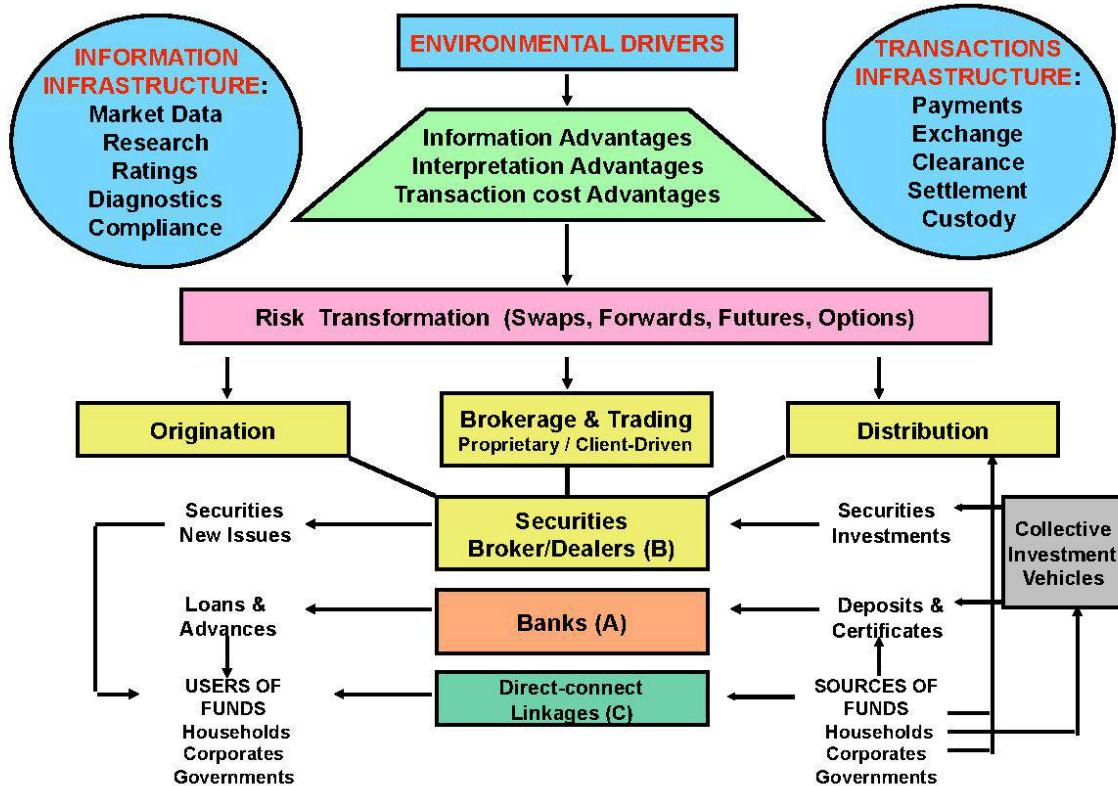
We know that we have large, broad institutions which, as Raina just mentioned, are either too big to fail or too complex to fail or too interconnected to fail, and, consequently, have systemic impacts which need to be dealt with after the fact. Often at great cost to ordinary people.

The second issue is, how do firms get that way? Why do they grow so big and so broad and complex that they ultimately become systemic? The third issue is how do you take that story and impose it on the current environment, and what role did these large, complex institutions actually have in the disaster that we've just been living through? And it is a disaster, it's a disaster for everyone. And when you look at the workout of the overhang – we're talking about slower growth, we're talking about real costs for ordinary people which will last for over a decade. This is not a free lunch, and it is going to be remediated either through fiscal measures or through higher inflation in some countries and so on. So the question is, what role did they actually have? And if they had a key role, maybe that's a reason for dealing with them in a certain way to make them less systemic.

Then we'll talk about those two issues that Raina mentioned. First of all, there are a lot of proposals on the table in the U.S., the UK and Switzerland – in some cases Switzerland is actually ahead of both the U.S. and the UK in thinking through some of these issues. Can we rely on those proposals, if implemented, to basically do that, to reduce the sensitivity of the system while retaining its efficiency and innovativeness? If you give up on that idea, then the alternative is structural remedies and you basically say that we're going to chop out public utilities – banks are public utilities, they run the payments system, they are the transmission belt for monetary policy, just like the railroads and the water companies; they have very, very strong public-utility characteristics.

Should a public utility be allowed to run a casino inside the same stores? And if the answer is no and you can't remediate it using the traditional techniques, then, clearly, a structural

remedy may be necessary. So, that's why I call it sort of breaking up the banks (that sounds more dramatic than it actually is). I would consider it to be a second best solution. The best solution would be for the regulatory process to be changed and for the banks themselves, which are systemic, to draw the necessary consequences through the government. So, here is the way we normally think about this.



Source: Roy C. Smith and Ingo Walter, *Global Banking* (New York: Oxford University Press, 2010).

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This chart gives you all the answers to all the questions you ever had about finance, about the financial markets. You can have this for free and reduce it to a little wallet size, and at a cocktail party you can look a lot smarter than you actually are. So what is this? Well, it's a flow-of-funds chart. The beauty of it is that we have good data and we know where money comes from. We are basically looking at savings, or usable funds, on the bottom right. About 80% comes from households, easy to measure; we take household after-tax income and subtract consumption, and what is not consumed is saved and goes into the system. Then we have corporate savings, for example, cash and cash equivalents on the balance sheets of companies, and then we have government savings such as external reserves of central banks, sovereign wealth funds and so forth.

So these three sources of funds enter the system and they go either into financial intermediaries (I noted it A), into a bank or a credit institution. The second alternative is that those savings could be used to buy securities (that's the vertical arrow going up to "Distribution"), sales of stocks, sales of bonds to households and so forth. And a third option is that those savings could go into fiduciaries or asset managers who in turn will manage those assets on

behalf of the ultimate owners, like pension funds, hedge funds and mutual funds, and they in turn will buy assets in the market. So, notionally, those are the only three channels through which the funds could enter the system.

If a large percentage of those funds go through the banking system, we call it a bank-driven financial system. If a large percentage goes into the capital markets, directly or indirectly, we call it an Anglo-Saxon or capital-market-driven system. When you look around the world, you have very different financial architectures in terms of the sources of funds. On the right-hand side you have the end users – obviously the same three sectors. Households borrow for housing, that's the mortgage sector, and the mortgage lending, often through banks, eventually ends up in the capital markets through the securitization process that Professor Hellwig talked about yesterday. The second type of household finance is consumer finance – credit-card loans and so forth, and that takes the same path. The original loan is usually made by a bank, but very often credit-card loans are securitized, so they end up as asset-backed securities.

And then we have corporations, which can issue bonds into the market and they can also take loans from banks, which in turn can also be securitized through collateralized loan obligations, and, finally, we have governments that would normally issue their debt in some kind of an auction process into the market. So the question is, how do we join these two pools of users on the left and sources on the right, and, as I said, one is through the banking system – deposits on the right, loans and advances on the left. The second is through the capital markets, and here, I've just broken out the three major functions: one is origination or underwriting, bringing the security to the market. The second is brokerage and trading, and I've divided trading into proprietary trading, for the firm's own book, and secondly, client-driven trading, for either investor clients or for borrower-issuer clients, and then, ultimately, distribution of securities either to institutional investors or to end users at the retail end. Sitting on top of all this is the infrastructure.

On the top left you have the information infrastructure; information is extremely important in this industry, especially information asymmetries where different people have access to different information. And there we have market data, which has to be accurate, has to be immediate so that things are priced correctly on a continuous basis. And then we have research, which deals with the interpretation of information – stock research, for example. Then we have the ratings industry, which has become extremely controversial in today's world – Standard & Poor's, Moody's and Fitch – and which looks at the interpretation characteristics of fixed-income securities. And then we have portfolio diagnostics, that is how investments perform, and then the compliance infrastructure. And on the right-hand side we have the transaction infrastructure – the payments system has to work reliably, it has to work efficiently, it has to handle large transactions under those conditions. You have exchanges, stock exchanges, foreign exchange and so forth, some of which are on exchanges, some are over the counter. Then we have clearance and settlements. Clearly, if I sell you a bond, you would like to get clear title to the bond and I would like to get my cash under certain conditions. So that is what we call the plumbing of the system, which has to work efficiently and accurately and quickly. And then we have, finally, custody – somebody has to hold onto these securities over their lives on behalf of their ultimate owners.

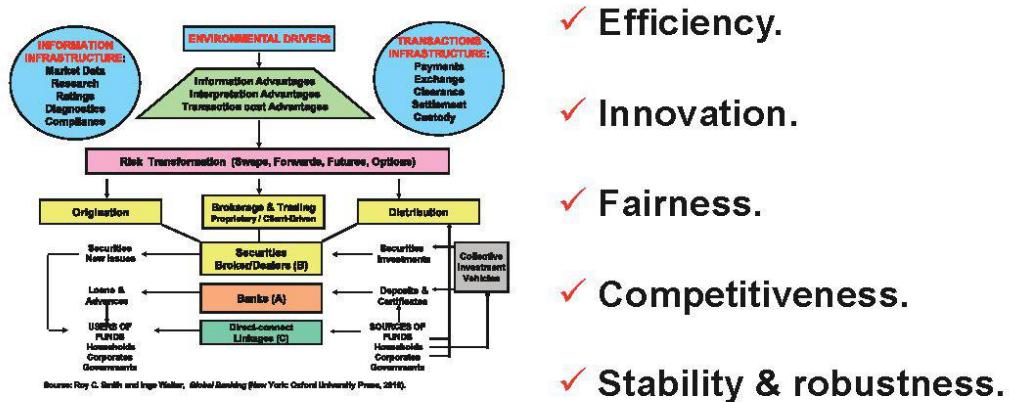
So when we talk about financial intermediation, we have three advantages that it takes to be a financial intermediary. You've got to have better information than the client so you can add value to the client or you have to have better interpretation of whatever information exists so you can advise the client in a suitable way, or you have to have lower costs than the client. If you are a financial intermediary or if you're any kind of intermediary, everybody is trying to cut you out. They're always trying to disintermediate. So in order to remain a financial intermediary, you have to have some combination of those three advantages. And that becomes particularly important when you talk about the risk transformation issues, especially with respect to derivative contracts. And finally, you have the whole issue of Direct-connect, at the very bottom, where, for example, a corporation might issue its obligations directly to an investor instead of first issuing them and having them underwritten by an investment bank and then ultimately being distributed to investors.

What we're always doing in the academic world is watching this map and seeing how the chemistry changes. For example, banks in the U.S., when I was in college, used to have about a 70% market share of U.S. intermediation. Today they have 19%. All of the rest of the U.S. intermediation has gone into the capital markets. In Belgium today, I just looked at the number, banks have nearly 60% of the intermediation market. So we watch not only the differences across systems but also how they evolve over time.

And then, from my point of view today, what kind of institutions map onto this grid? For example, you could be just a community bank or a regional bank. And we have in the U.S. today almost 8,000 banks. The vast majority are local and community banks that are doing extremely well. They're not involved in the capital markets. They're not involved in a high level of financial intermediation, but they do have a high degree of closeness to their clients both on the deposit side and on the lending side, and they continue to be viable intermediaries. The last data I saw were that we have about 400 banks a year which were acquired by other banks, but we keep having about 8,000 banks. So what does that mean? Every year we have 400 new banks that are created in a small time. This is a vibrant industry, even in the case of the U.S., which has moved very heavily into the capital markets.

Or, if you don't want to be a bank, you can be a broker-dealer or an investment bank. That means you operate across the other businesses. So you have origination – usually that is coterminus with merger and acquisition activity in corporate finance – then you trade and provide liquidity and then you distribute it. Or you can be a universal bank and you can be in origination, brokerage & trading, distribution, securities broker/dealers and a financial intermediary also. And in addition to that, you can also be a custodian, you can run part of the payments system and so forth. So one of the questions is, how do we map the institutional structure against the functions?

What Do We Expect From the Financial Architecture?



- ✓ Efficiency.
- ✓ Innovation.
- ✓ Fairness.
- ✓ Competitiveness.
- ✓ Stability & robustness.

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I started this by just looking at functions. That doesn't necessarily tell you what types of institution are optimal to carry out those functions. So if we take a look at what we're looking for from the system, we want it to perform in at least five areas. One is, we want it to be efficient. Efficient means, in one sense, the difference between what the saver receives on his savings and what the borrower has to pay as far as the system as a whole is concerned. So if saving returns are 3% and borrowers on average pay 6%, then you've got 300 basis points, or 3%, in the middle, which goes into either costs or losses or profits. So if you're looking at a system with a 3% spread and you're looking at another system with a 6% spread, you would say that the first system is more efficient than the second system.

Secondly, we're looking at innovation. We want the system to throw up new products and new processes which actually add value to clients, whether the clients are savers or investors, or whether the clients are borrowers. So we want a system which is what in economics we'd say is statically and dynamically efficient. Those are the first two objectives.

Third, we want a system that is fair. Nobody wants to be cheated. If a market is unfair or somehow tilted, people have options; they move their business to other markets which they consider to be more fair. So we generally call that equity. Horizontal equity and vertical equity, which means you treat similar people similarly or different people differently, but in a way that is clearly specified.

Fourthly, we're looking at competitiveness; we're operating in a global market where national boundaries often mean very little. And if you want to be a competitive financial center, and Switzerland is clearly one; so is New York, so is London, and we're in a life-and-death struggle with London almost all the time in terms of attracting transactions. What we want

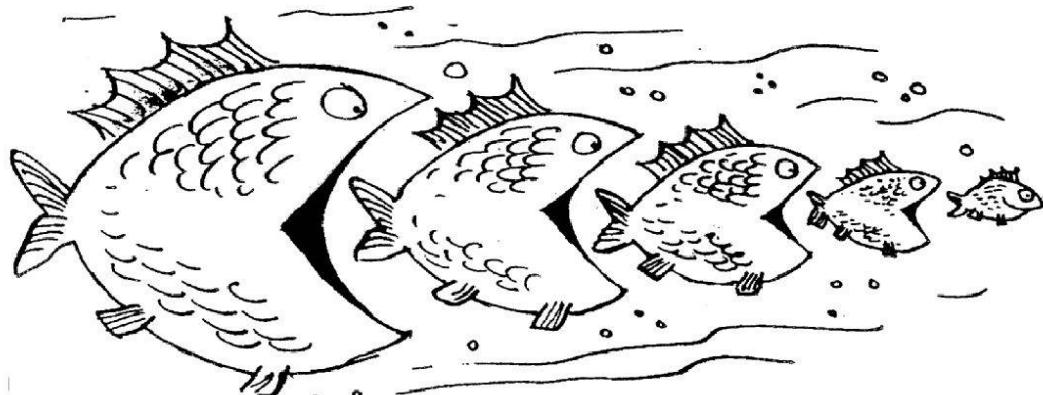
is a system which is, again, efficient, innovative and fair and we want a system that is as lightly regulated as possible consistent with stability. That's what we want. That's what we call the net regulatory burden. We've had a lot of studies in both London and New York about how different regulatory initiatives might affect our competitiveness, might affect one against the other. And the system is extraordinarily sensitive. Small changes in regulations create huge changes in financial flows.

And lastly, you're interested in stability and robustness. You want a system that achieves all of the other objectives but at the same time absorbs shocks. Because there always will be shocks. It could be an oil shock, it could be an emerging-market shock; it could be some other shock we don't even know about in the real-estate sector, and we want the system to correctly apportion the losses, to correctly allocate the risks ahead of time, and we want the system to survive and to continue to provide its essential functions. So you can take different financial systems and just benchmark them against those five objectives. I was just talking about this one time in Singapore; I was asked by the monetary authority to benchmark the Singaporean system, and I almost got kicked out of the country. In fact, my presentation should have been very close to the airport, because they don't like anything except excellence. They're extraordinarily smart and extraordinarily arrogant.

So, anyway, here's an example. If you look at the financial services sector mapping the institutions onto the functions in 1950 for the U.S., you can see we have the various activities I mentioned before: payments services, savings products, asset management and so on. Then we have different types of institutions that carry those out. So back in 1950, ancient history, banks insured depository institutions, which is the term I use here, that were involved in banking activities. Then insurance activities, but they were not permitted to be involved in banking activities or vice versa. And then you have securities firms, broker-dealers, which were involved in the securities markets but could not be involved in banking or vice versa. Nowadays, everybody gets into everybody else's ball game. So if you're interested in asset management, for example, as a client, you can get that from insurance companies, you can get that from banks, you can get that from broker-dealers. And many of us think that this is actually not such a bad situation because competitive dynamics are particularly intense when you are competing across strategic groups, not just within strategic groups, like banks against banks. Because, for example, a new idea which could actually damage banks because it cannibalizes their profitable business might come up from the insurance industry. Or it might come up from a foreign bank like ING Direct in the U.S. No American bank would have come up with that. It had to be a foreigner which had no stakes in the existing system to invade the system and effectively stir the pot. So we like to see a high degree of cross-functional competition.

In Europe, if you try to compare the Danish system with the Spanish system, it's almost non-sensical. But nevertheless, in Europe we typically have a system which is heavily dominated by the banks and insurance companies. We have very, very few specialists; we basically have no independent broker-dealers any more. We have some independent asset managers, but very often they get acquired by large banks. So the U.S. system and the European system do look quite different, with the European system heavily dominated by universal structures compared with the U.S. system. So the question is, how did these institutions get as large and broad as they are? And secondly, what are the implications?

Financial Consolidation



- **Is bigger better?**
- **Is broader better?**

NYU 

Here is the McKinsey diagram. What's the story? The story is, bigger is better. Why is bigger better? Because you've got a bigger market footprint, you have a larger market share that gives you pricing power, you have economies of scale which reduce your unit costs. There are all kinds of arguments why bigger might be better. The second issue is, is broader better? Is doing insurance as well as banking, as well as asset management, for example; combining those, is that worth more than the individual businesses are by themselves? And that relies very heavily on what we call cost economies of scope and revenue economies of scope, or what bankers would call cross selling. So the question is, is this in fact true? Because if McKinsey (I'm putting their name on here because I like to criticize them). They really wouldn't put it this way, but is McKinsey right? Because at the end of the day, if you leave them alone, who is going to inherit the earth? It'll be the big guy through the consolidation process, and, possibly some specialists who don't have conflicts of interest and other complexity problems, and who can continue to operate profitably on a regional basis, or functional basis, or whatever.

You could say that the ones who really have a problem are the ones in the middle. They would have a choice: they could either become consolidators and move to the left, or they can become specialists like the Bank of New York did, or other firms like that which are still large but function in one particular area where they have a comparative advantage. So here's what happened in the U.S. We're a good place to do good research because we have a large number of banks (as I said, 8,000), we have a single currency – have had since 1865, since the end of the Civil War – we have a single regulatory system. So we don't have the problems that you have when you try to do international research, where you're looking at exchange rates and other complexities.



Where's the Value in Scale? US Banking Consolidation 1994-2008 & Est. 2011)

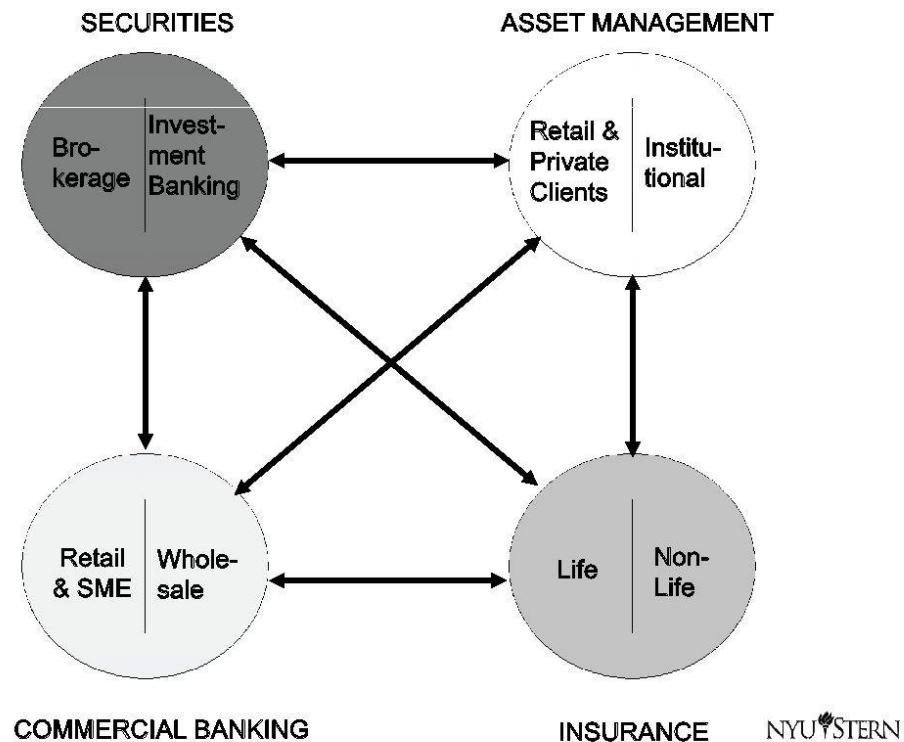
	1994	2008	2011
Total assets in commercial and savings banks	\$5.0 trn	\$9.4 trn	\$11 trn
Top-10 banks	27%	44%	58%
Next 15 banks	15%	14%	9%
Next 25 banks	12%	10%	8%
Next 50 banks	11%	7%	5%
All other banks	35%	25%	20%

Sources: FDIC, Sheshunoff Information Services, SNL Financial, McKinsey & Co. estimates.

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What's happened? Well, the top ten banks in the U.S. have in fact gained market share. And gained dramatically, actually more than doubling their market share since 1994. The next 15 banks have lost dramatically, as have the other categories. So it appears that in the U.S. we're seeing, despite the fact that the number of banks is still the same, the consolidation of market share has in fact been growing. What's happened as a result of the crisis, it's turbo-charged the process, because as a result of the crisis, we've had a number of big mergers – I should just mention Merrill Lynch- Bank of America, Wachovia-Wells Fargo, Bear Stearns-JPMorgan Chase, which in order to stabilize the system at the moment created even greater degrees of concentration. Consequently, even more systemic institutions than before. In fact, in the U.S. we have a cap on bank deposits captured by any given firm of 10%. Americans are very, very skeptical of concentrations of power, and this is a political cap which says 10%, and you can't grow beyond that because we're concerned about market concentration. Bank of America currently has 13.5%. So they're in violation by 3.5%, and they're allowed to do that under forbearance, which means that we're living through unusual times, and we expect you, over time, to build that back down to 10%. Bank of America says "Wait a minute, wait a minute, the reason that we're at 13.5 is because we're so good. And consequently, we think you should increase the cap to 20%." That's their argument and they have an army of lawyers arguing that, and the public interest of course may have a different view. So we see this consolidation in the U.S. case. We also see it in – I can draw this map – Europe. We also see heavy consolidation in Europe, mostly internally, within countries, as opposed to cross-border, although there is a significant amount of cross-border as well.

Where's the Value in Scope?



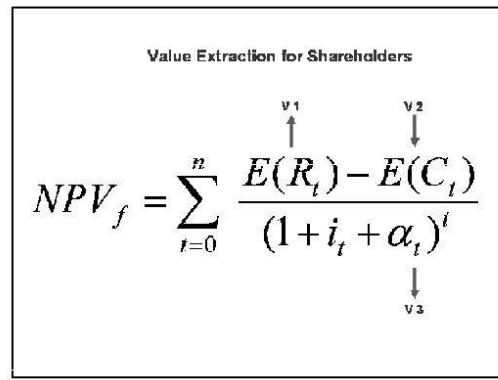
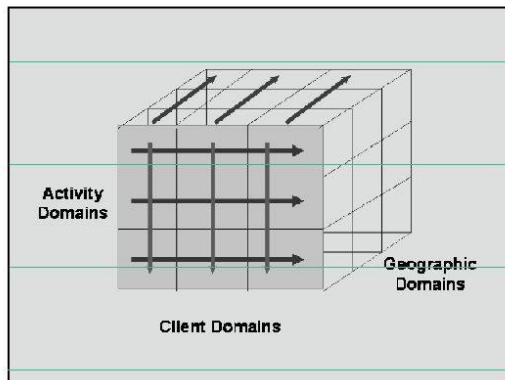
Secondly is scope; is it worthwhile, as a bank, to also do insurance. This has been an argument that's gone on forever – bancassurance is something that in some environments works extremely well and in other environments it's a complete disaster. In the United States it's a complete disaster. People like to buy their insurance from independent or tied agents, and that's an extraordinarily different model than buying insurance from a bank or from the insurance group within that particular bank.

Similarly, should a bank be in the securities business? Should a life insurance company also be a broker-dealer? These are scope questions and in many cases there are not easy answers to come by.

How Do Bnks Get To Be LCFIs?

A Financial Firm's Strategic Positioning and Execution is Supposed to ...

- Access sustainably profitable markets and achieve market leadership.
- Harvest all available scale economies and operating-efficiencies.
- Exploit available revenue and cost economies of scope and avoid diseconomies and conflict of interest exploitation.
- Mitigate bankruptcy risk while avoiding excessive complexity and conflicts of interest.



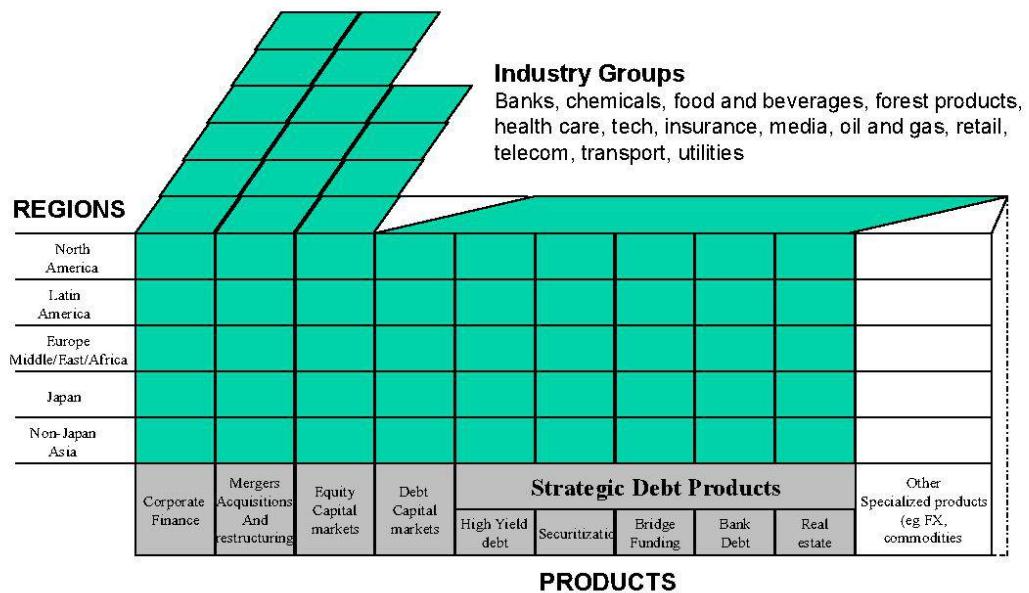
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So how do banks get to be large, complex financial institutions? Very easily; what they try to do is, they try to access the most profitable and the largest, and the most rapidly growing market. Right? Secondly, they try to maximize economies of scale where economies of scale are available, and there are lots of activities where economies of scale are large, and there are some, like merger advice where they're virtually zero. Right?

Thirdly, you want to try to maximize scope and cross selling, and you want to try to avoid diseconomies, such as, for example, conflicts of interest. The broader you get, often the more difficult conflicts of interest tend to be to manage, as does complexity. So you can put all that into a little matrix; you put all the activities you do on one axis, you put the clients you serve on the other axis and the geography on the third axis, and your strategy is revealed by what's inside that box. And you try to maximize the value of the firm within that, and on the right-hand side you simply have a valuation story which says, what you want to do is increase revenues, expected revenues, reduce expected costs and reduce the risk associated with the firm. That is the job description of the chief executive officer of a bank. Right? Revenue gains, cost reduction, risk reduction.

So in trying to push that model, firms clearly become very large. Very often the execution device is acquisition, growth by acquisition. Very often the market rewards firms for doing that because the presumption is that you're going to see disproportionate revenue growth or significant cost efficiencies like closing branches and measures like that. So bankers are just acting rationally, and they get big by doing that.

Example:
Morgan Stanley's Investment Banking Division

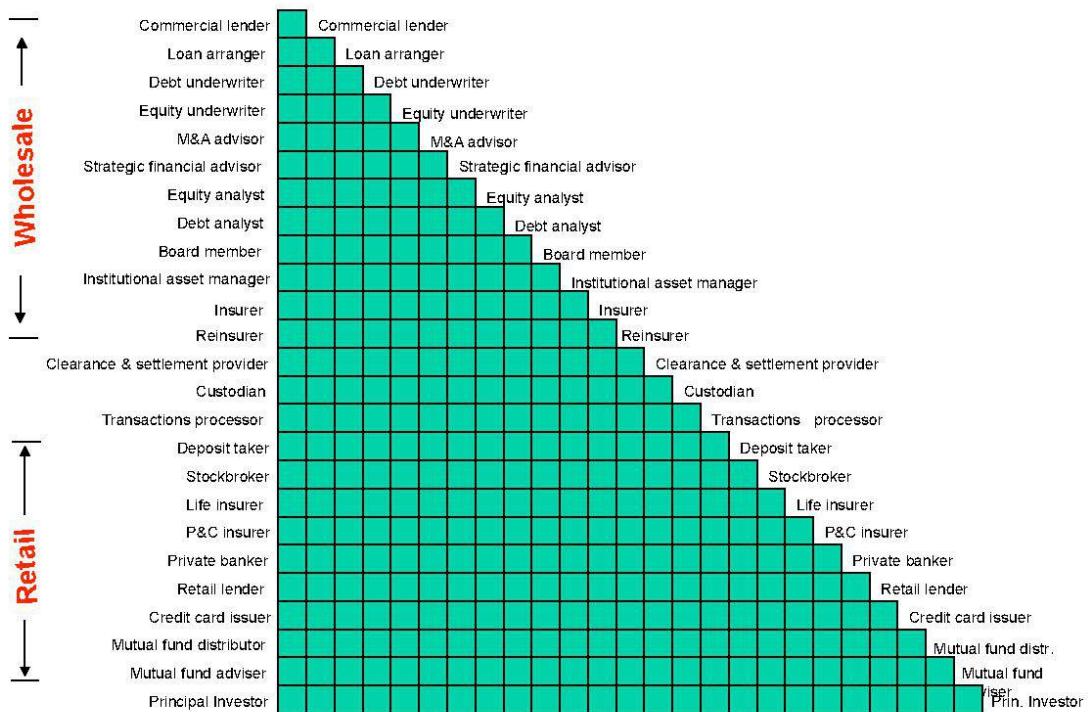


Matrix organization (three axes) *principally product and region axis (a) Industry axis critical for corporate finance, M&A and equity capital markets, (b) Corporate finance primarily responsible for client relationship, c Teams formed dynamically to provide clients with product, industry and regional expertise

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Here's an example that we did a couple of years ago for the investment banking division of Morgan Stanley, one of our surviving investment banks – well, it's a bank holding company now. What they did for themselves, they took the regions, North America, Latin America and so on, and they took the products on the horizontal axis, and they took the industry groups which they served; for example, chemicals, oil & gas, media, and they built a matrix like that, and basically used that in terms of resource allocation and risk allocation. This is just a logical way of thinking about it.

Capitalizing on Scope Means Increasing Complexity



At the same time, if you think about a large institution which is also extremely broad, you can put it into a matrix like that, and you put all the activities you do on one axis and all the activities that you do on the other axis, and each cell represents a linkage, for example, insurance and banking or merger advice and bridge lending. And you can extract potential values from this particular matrix. It also involves – the matrix had good values in terms of cross linkage. It also has potential problems with respect to conflicts of interest. For example, I've divided this into wholesale clients, retail clients and domain transition clients, and the broader you get, the more conflicts of interest you have. If you are advising investors and at the same time you're underwriting initial public offerings of stock, you've got a problem, because your research analyst is clearly going to say buy even though that recommendation may not be in the interests of the investor.

We had a huge problem with that back in 2001 and 2002. Similarly, if you have a position that you're trying to offload in the market and it's not going too well, you can potentially stuff it into the portfolios of clients who may have other concerns and may not be too visible.

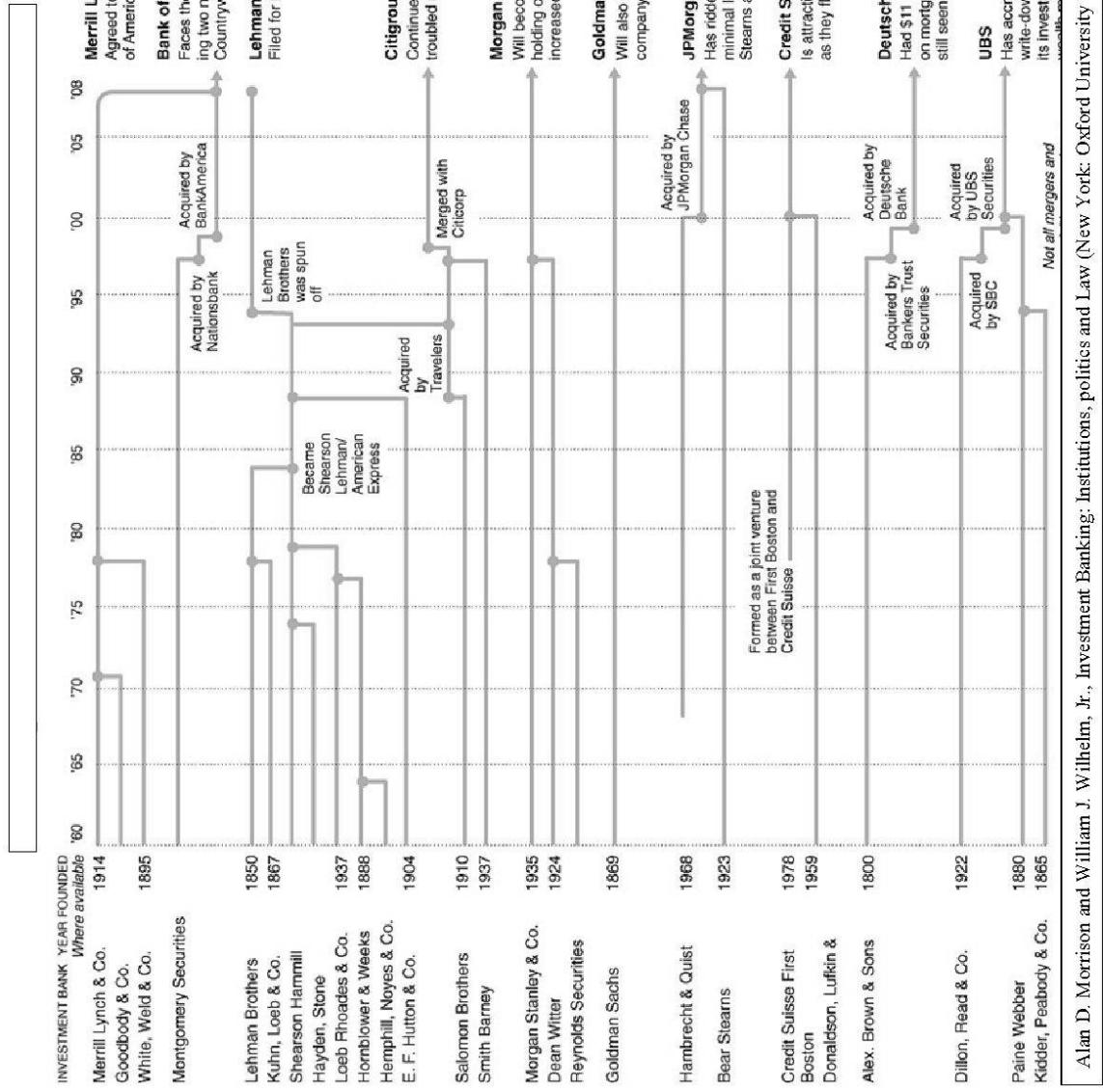
Scope and the Conflicts-of-Interest Problem

Wholesale Domain	Domain-Transition	Retail Domain
<p>Type-1 - Firm-client conflicts.</p> <p>Principal transactions.</p> <p>Abusive tying.</p> <p>Fiduciary violations.</p> <p>Self-dealing.</p> <p>Front-running.</p> <p>Type-2 - Inter-client conflicts.</p> <p>Misuse of information.</p> <p>Client interest incompatibility.</p>	<p>Type-1 - Firm-client conflicts.</p> <p>Suitability.</p> <p>Stuffing.</p> <p>Conflicted research.</p> <p>Proxy voting.</p> <p>Spinning.</p> <p>Laddering (ramping).</p> <p>Bankruptcy risk-shifting.</p> <p>Late trading.</p> <p>Market timing.</p>	<p>Type-1 - Firm-client conflicts.</p> <p>Biased client advice.</p> <p>Involuntary cross-selling.</p> <p>Churning.</p> <p>Inappropriate margin lending.</p> <p>Failure to execute.</p> <p>Misleading disclosure and reporting.</p> <p>Misuse of personal information.</p>

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And so, all of these things are potential conflicts of interest which could lead to, first of all, regulatory reaction, and we've had lots of that. And second, and possibly even more important, reputational losses, because if you're trying to run a private banking business and you're basically exploiting a conflict of interest against your wealthy clients, it's obvious that the reputational loss could be many, many times whatever you might have gained in terms of the financial returns.

Some Results: Global Consolidation in Wholesale Financial Intermediation



Composite Wholesale Banking Pre-crisis League Table

Firm	Global Investment Banking Market Shares (\$'000 millions)						Total	
	Rank 2005	Rank 2004	Syndicated Bank Loans	Global Debt	Global Equity	M&A Advisory	MTNs Arranged	
JP Morgan	1	1	572,877.4	369,575.7	29,018.0	717,494.6		1,888,965.7
Citigroup	2	2	490,732.6	471,013.1	43,605.0	584,427.4		1,591,706.6
Goldman Sachs & Co	3	3	74,709.3	239,610.2	36,627.4	920,352.3		1,271,299.2
Morgan Stanley	4	4	46,878.9	284,660.2	35,681.8	788,784.0		1,156,004.9
Merrill Lynch & Co Inc	5	5	41,377.7	262,933.3	54,126.7	648,181.4		100,0 1,006,719.1
Deutsche Bank AG	6	6	147,348.9	376,793.0	14,637.2	393,791.9		932,571.0
Lehman Brothers	7	7	43,997.6	361,544.3	26,751.6	459,462.0	8,000.0	899,755.5
UBS	8	10	36,082.1	258,347.4	29,338.1	525,891.0		849,658.6
Banc of America Securities LLC	9	8	344,247.9	245,658.2	9,298.4	169,489.5	17,427.0	786,121.0
Credit Suisse	10	9	74,426.3	296,744.5	42,830.2	326,636.6		740,637.6
BNP Paribas SA	11	14	152,242.1	131,573.6	2,739.3	199,789.5		486,344.5
Royal Bank of Scotland Group	12	15	173,038.2	260,176.7				433,214.9
Barclays Capital	13	12	161,987.1	259,414.4	1,022.6			422,424.1
Bear Stearns & Co Inc	14	13	9,418.8	203,623.8	5,780.7	178,183.7		397,007.0
Lazard	15	17				336,887.7		336,887.7
HSBC Holdings PLC	16	18	79,847.2	166,391.0	5,667.4	61,931.4		313,837.0
ABN AMRO	17	11	93,793.8	123,720.7	5,901.9	85,006.3		308,422.7
Rothschild	18	16				250,826.8		250,826.8
Industry Total								4,008,838.4 5,469,617.1 466,284.1 3,224,104.1 119,693.4 13,288,537.1

So breadth creates complexity and complexity involves conflicts of interest. And, over time, what's happened is, in this business, consolidation has occurred as well, especially in wholesale financial intermediation. So the period just before the crisis looked like this, and these are the large firms, all of them large, complex firms which were involved in the capital markets and which were at the center of the current problem. I've simply ranked them by business volume: number 1 one was JP Morgan both in 2004 and 2005, number two was Citigroup and so forth. If you take the top ten, their combined market share was about 80% of global capital market activity. So ten firms controlled about 80% of all stock issues, bond issues and intermediation flows through trading activity. So it's a fairly heavily concentrated industry, and that means if the system is subject to a shock, it's heavily going to be located in those large, particularly complex institutions.

What Are LCFI's?

Large Complex Financial Institutions (LCFIs) can be defined as financial intermediaries engaged in some combination of commercial banking, investment banking, asset management and insurance, whose potential failure poses a risk to the financial system as a whole.

Key words:

- ✓ Large
- ✓ Complex
- ✓ Interconnected

Key issues:

- ✓ Too big to fail
- ✓ Too interconnected to fail
- ✓ Too complex to manage
- ✓ Too opaque to regulate
- ✓ Too powerful to control



This is the way we define them: they're large, but they don't have to be large. For example, Bear Sterns was not large; it was small, relatively. Bear Sterns was not complex, it was relatively easy to understand. Why was Bear Sterns rescued and sold to JP Morgan Chase? Because it was too heavily networked. And there is another criterion, which is too interconnected to fail, and we've been doing some sort of interesting research with colleagues of mine using network theory and network externalities to pinpoint firms that could be systemic even though they're not particularly big or complex.

For example, if you have an electricity network, you could have a substation which by itself is no particular concern systemically, but if that substation goes down, and the whole grid goes down, you can see the example of too interconnected to fail. And Bear Sterns

was clearly a good example of that, as was, later on, Lehman Brothers probably, although Lehman was, you could argue, sizable.

So the issues are the too-big-to-fail one, the interconnectedness one and the complexity one. And very often, management itself doesn't understand what the firm is doing. Certainly, in many cases, the Board didn't understand what the firm was doing, and if the management and the Board don't understand, probably the regulators don't understand. And if you want the best example of that, that's become the Bible in the United States, it's the UBS report that was published in 2008. This the Bible: every course in banking in the United States today has to read the UBS report, because it's 74 pages, it's easy to read, and what you see is people trying to do the right thing, ending up destroying the firm. And what you see in – I'm sure it's not the whole story – but I'm sure it's the only bank in the whole system that's opened its kimono – not voluntarily, by the way, and said, this is what happened to us. Right?

What you see here is limits on the governance process, limits on information flows, limits with respect to how you understand risk allocation and capital allocation, misrepresentation and checking on misrepresentation within the structure of the firm. So this raises the question about: here's a bank which for many years outperformed all of its competitors, if you simply look at the stock price, and which ultimately destroyed itself. How can this possibly be? Well, that's well beyond what we normally deal with in terms of financial analysis. And then we have the other issue which is too powerful to control, and this deals with something that Martin Hellwig talked about yesterday, which is the ability of the banks to capture their own regulator. And in a political system like the United States's – I'm sure in Switzerland it's different, but in the United States, where money talks, and we have campaign contributions to Senators and Representatives – I was telling somebody yesterday that every Senator or member of the House of Representatives is covered by five lobbyists for the financial sector. And if you figure that they're receiving maybe \$250,000 a year on the average, you can see how much spending goes on to try to influence the regulatory structure in their favor – I mean they're not doing this to support democracy, they're doing this to create better terms for themselves under whatever the new regulatory structure provides. And in the U.S., where we have campaign contributions, and I'm really pretty critical about this because I think we need to almost reform the political system as a precondition to reforming the financial system; campaign contributions are just legalized bribery, and it gives you access, and the access is compounded by lobbyists and lawyers who try to undermine whatever it is you're trying to achieve. It's a rotten system, and as I said, I'm sure Switzerland is totally different, but that's the way we are.

Examples of LCFIs

US Bank-based LCFIs

- Bank of America (incl. Merrill & Countrywide)
- Citigroup
- J.P. Morgan Chase (incl. Bear Stearns & Washington Mutual)
- Wells Fargo (incl. Wachovia)
- Goldman Sachs Group
- Morgan Stanley

US Insurance-related LCFIs

- American International Group
- Berkshire Hathaway
- Prudential Financial

Other US LCFIs

- American Express (now a BHC)
- Bank of New York - Mellon
- CIT Financial (now a BHC)
- General Electric Capital
- Fidelity Investments
- State Street Global

Foreign Bank-based LCFIs With Major US Businesses

- Barclays PLC
- Credit Suisse
- Deutsche Bank AG
- HSBC Holdings
- ING Group
- UBS AG

Foreign Insurance-based LCFIs With Major US Businesses

- Allianz SE
- Groupe AXA
- Munich Re
- Swiss Re

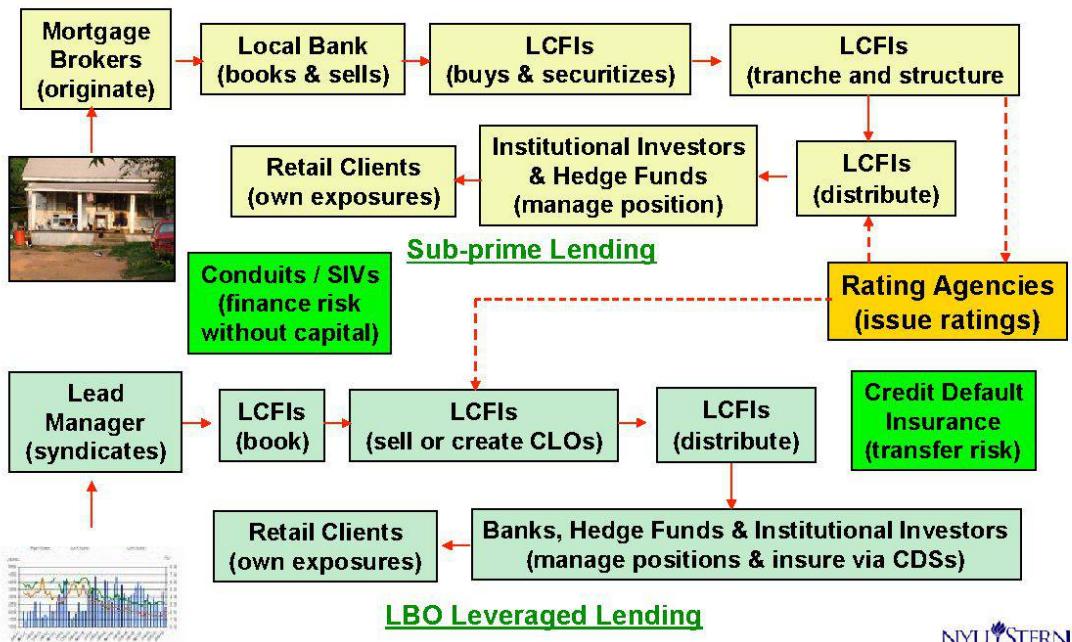
Possible metrics:

- Asset size
- Transactions volume
- Functional breadth
- Geographic breadth
- Network nodes
- Other measures of interconnectedness?

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Here are some examples: this is a little list of large, complex financial institutions that come up from these criteria. Some are walking wounded, like City, which is really a zombie, JP Morgan Chase, which is in much, much better shape, Wells Fargo and so forth among the banks, then we have insurance-related CFIs, which include Berkshire, Prudential and so on, and then we have American Express, Bank of New York by virtue of its role in the repo market and in the custody business. Now we also have foreign banks: Barclays, Credit Suisse, UBS, ING – I would classify those as systemic. And then we have some insurance-based firms like Allianz and AXA and so forth. This is not a magic list, it's just my own interpretation. There's another list that Standard & Poor's has of systemic firms which is slightly shorter. There's one that the Fed has that they don't tell anybody about, because this is obviously sensitive information.

The Key Role of LCFIs in the Originate & Distribute Model



Ingo Walter, 30 December 2007.

Note: LCFI = "large complex financial institutions."

We've got these metrics and you can identify firms by their systemic character. So the question is, what did they do in the current crisis? Well, this is the map that Martin Hellwig talked about yesterday. You have the house, which looks like it's falling down, which ends up going through a securitization chain, ultimately to be sold as different types of securities to investors who were carrying the risk and presumably got paid for the risk that they took based on the tranches.

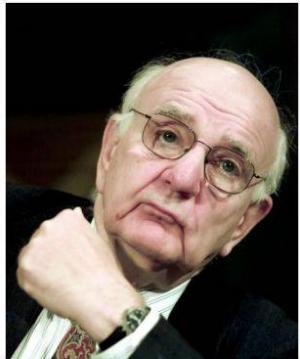
You can do the same thing with corporates like leveraged buyouts and so forth. So this kind of maps it out and then you can see the role of the rating agencies, you can look at credit default insurance through the model lines and through AIG and off-balance-sheet vehicles like conduits and the like. So this system developed over time to maximize efficiency, to distribute risk to those best able to bear it. The instruments became marked-to-market instruments as they entered the markets; there's no hiding in the market, every day we know what the value of the security is as long as the market is liquid.

Alternative Views on the Financial System



“Increasingly complex financial instruments have contributed to the development of a far more flexible, efficient and hence resilient financial system than the one that existed a quarter century ago.”

- Alan Greenspan, November 2005



“The bright new financial system – for all its rich rewards and unimaginable wealth for some – has failed the test of the marketplace by repeatedly risking a cascading breakdown of the system as a whole.”

- Paul Volcker, April 2008

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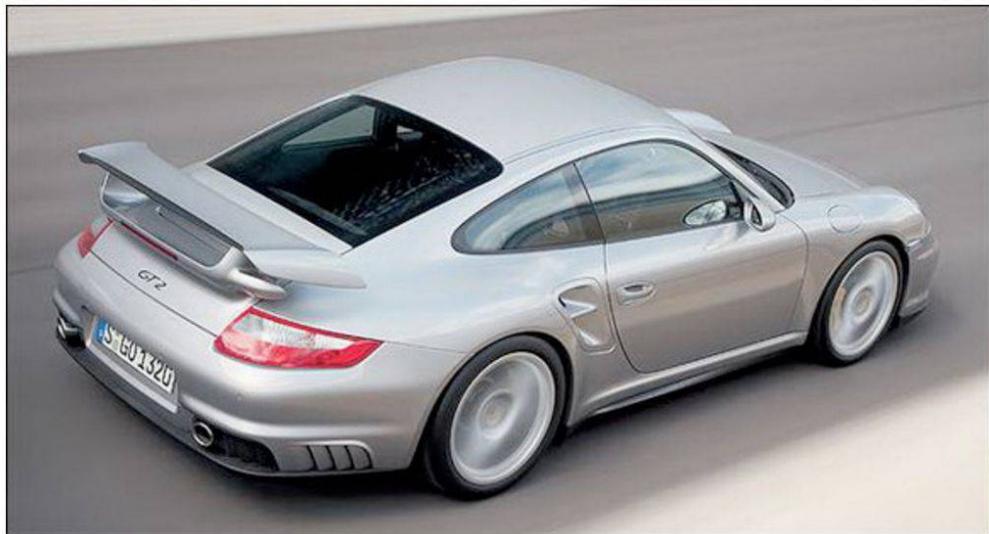
What we have is basically two views on this, as Raina mentioned. One is Alan Greenspan – by the way, these are both old guys, even by my standards. They're increasingly rare, even by my standards. So who's older? Greenspan is two years older than Volcker – interestingly enough, Volcker's 83 and Greenspan's 85. So Greenspan says that these increasingly complex financial instruments that we've created here in this structure contributed to the development of a much, much more flexible and efficient, and therefore resilient financial system than the one we had 25 years ago.

Do you agree with that? Well, you can agree with flexible. You can agree maybe with efficient. But maybe resilience is not the right word. So Volcker comes – and by the way, Volcker is a real statesman, he's been around Switzerland from time to time doing odd jobs - and he says this bright new financial system that Greenspan talks about, for all of its rich rewards and unimaginable wealth for some...

Unimaginable wealth. One of my former students, John Paulson, made \$2.7 billion over the last two years for himself running the Paulson hedge fund. I've been up to see him to talk about donations for the university. He just gave us \$20 million on Friday for scholarships. What's \$20 million? That's, to me, unimaginable. \$2.7 billion over two years, by basically making a simple bet, which was to short the market, which ultimately tanked. Anyway, Volcker says that this system has failed the test of the marketplace by repeatedly risking a cascading breakdown of the system. So he's really arguing with the resilience in Greenspan. One of the things that makes Volcker a great statesman is that he never commented on how his successor performed. When he left the Fed and Greenspan took over, he kept his mouth shut. And that's what you're supposed to do as an ex-governor. Greenspan has been writ-

ing books and so on, and commenting on how Bernanke is doing. When Greenspan goes to heaven, probably Saint Peter will give him a thumbs down.

A High-Performance Driving Machine



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Anyway, here's what we designed. This is sort of the automotive equivalent of the financial system that existed back in 2004 and 2005. High performance, an extraordinary machine. I had one which I finally got rid of. Why? Because I always wanted one since I was 17. Why? Because the girls give you a thumbs up when they see it – at least until they see who's inside and then they give you... So finally, when I got old enough, my wife said, go ahead, go ahead. So I got a Carrera, not the fancy one like this, but a regular one. And it turned out to be the worst decision I ever made. Why? What's that car made for? It's made for Swiss roads, or German roads, or Spanish roads. It's not made for streets in New York City. We have potholes that are this big and this deep. I ended up changing 5 tires and 2 rims. Each tire is \$450. I couldn't drive it in the wintertime because it wouldn't stop, and I had to use primitive techniques like steering into the curb to slow the car down. Useless! Useless! For the purposes that I had it for. Not as a vehicle. So I used the wrong tool for the wrong purpose.

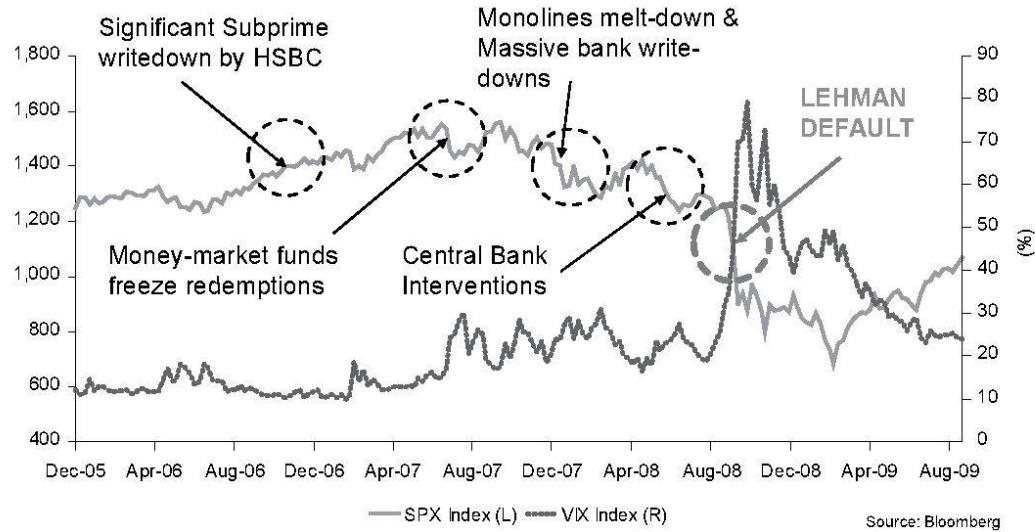
Another High-Performance Driving Machine



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Here's another tool. This is a different one. This is a purpose-built vehicle for motorcross or whatever the sport is. And you makes certain assumptions, like the wheels are actually going to stay on, and. Actually, if you saw the guy's face, he probably looks a little nervous. It doesn't hurt right now, but it will in a minute. So what we had here was basically a high-performance regime which, when stress-tested in ways which no one was in a position to forecast – I don't think - maybe John Paulson would have been, but I certainly wasn't – and which basically didn't perform very well under those conditions.

The Crisis in Retrospect: SPS and VIX



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So here's the crisis in retrospect – you can see here the market, you can map onto it Lehman Brothers and so forth, you can map onto it the central banks' provision of liquidity, then you can look at the volatility of the markets – that's the VIX, the dotted line. So you can map it out pretty nicely, and the question is how did the system withstand that period of turbulence in the market?

Top-50 Financial Intermediary Write-downs 1 January 2007 to 10 October 2009

Notes:

> LCFI

† Terminated (died)

G Under government control

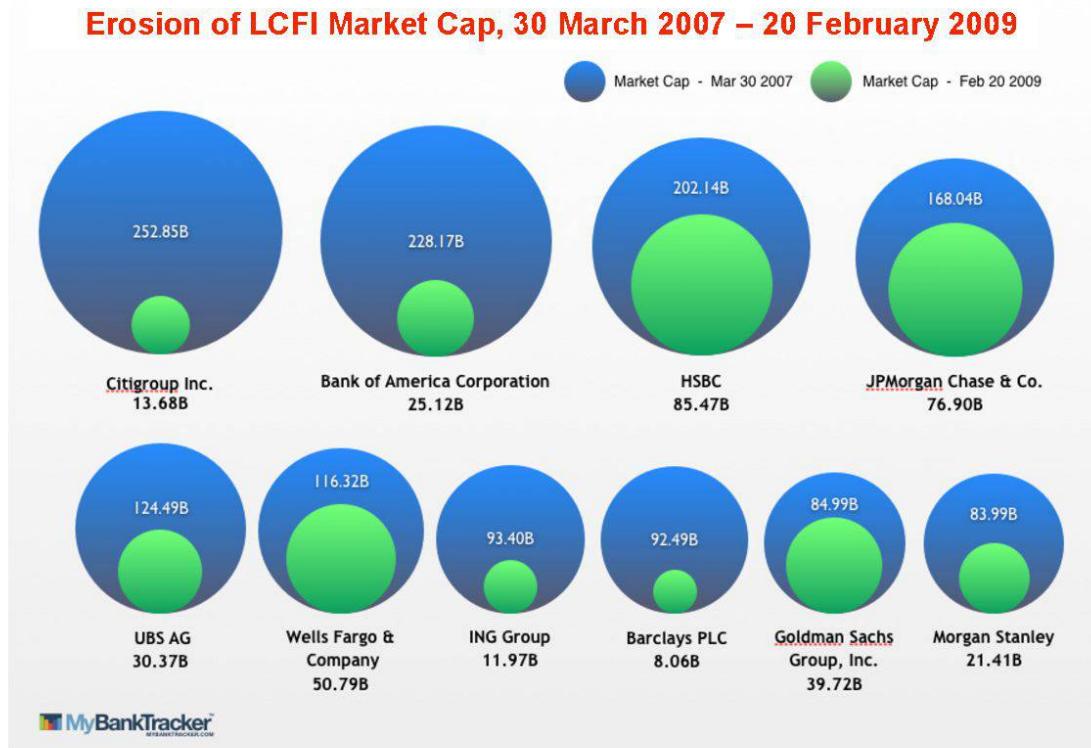
C Converted to bank holding company

Source: Bloomberg, November 2009

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Firm	Loss	Capital	
Wachovia Corporation	101.9	11	t
Citigroup Inc.	88.3	109.3	G
Merrill Lynch & Co	58.9	29.9	t
UBS AG	50.6	32.9	t
Washington Mutual Inc.	45.3	12.1	t
Bank of America Corp.	42.7	78.5	t
HSBC Holdings Plc	42.2	23.5	t
JPMorgan Chase & Co	33.3	44.7	t
HBOS Plc	25.7	22.4	t
National City Corp.	25.2	8.9	t
Wells Fargo & Company	23.4	41.8	t
Morgan Stanley	21.5	24.6	C
Royal Bank of Scotland	20.7	48.5	G
Deutsche Bank AG	16.4	5.9	t
Lehman Brothers Holdings	16.2	13.9	t
Bayerische Landesbank	16.1	20	t
Credit Suisse Group AG	15.8	11.9	t
Barclays Plc	14.2	26.8	t
ING Groep N.V.	14	19.4	t
IKB Deutsche Industries	13.9	11.4	t
Societe Generale	8.9	11.1	t
Fortis	8.9	21.7	t
Credit Agricole S.A.	7.7	12	t
Natixis	7.7	7.8	t
BNP Paribas	7.6	3.4	t
Mizuho Financial Group	7.5	8.2	t
Canadian Imperial Bank	7.3	2.5	t
PNC Financial Service	7.2	8.1	t
Goldman Sachs Group	7.1	20.5	C
DZ Bank AG	7	0	t
Dexia SA	6.2	8.6	t
KBC Groep NV	6.2	7.4	t
SunTrust Banks Inc	6.1	4.9	t
UniCredit SpA	6	10.1	t
Bank of China Ltd	5.9	0	t
Other Asian Banks	5.5	16.9	t
Other European Banks	5.5	4.5	t
Hypo Real Estate Holdings	5.4	0	t
Indymac Bancorp	5.2	0	t

These are the firms that ultimately booked losses as of two weeks ago, and according to Bloomberg's estimate, the largest loser was Wachovia with \$102 billion, and the second is Citi and so forth. And next to everyone who died I've put a little cross over on the right, and then the ones which were taken over by the government or substantially under government control, I've put a "g". And the "Cs" are conversions, these are investment banks that converted to bank holding companies to gain access to government liquidity and also to other support. And then I've put on the left little carrots; those are all the LCFIs. So you can see that among the biggest losers, ranked from 1 to 50, about three quarters of them were large, complex financial institutions. You can see there right in the middle of this process, and to the extent they were systemic, they needed to have a safety net built underneath them, and somebody had to hold up the safety net.



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This is what happened to the market caps – I often use this – Citigroup in February, or March, 2007 was worth \$252.8 billion, and in February of this year it was worth \$13.6 billion. So we basically destroyed the bank. That little circle is what it was worth at the beginning of this year and the big circle is what it was worth back in 2007. And you can see that they did very differently. Why is that? Citigroup and, clearly, Bank of America performed very differently than HSBC and JP Morgan. As I keep telling people, this chart was made by JP Morgan, because they looked pretty good relative to their competitors.

This Was a Crisis Caused by LCFIs

LCFI's took tail systemic risks during 2003-2Q 2007 in three ways:

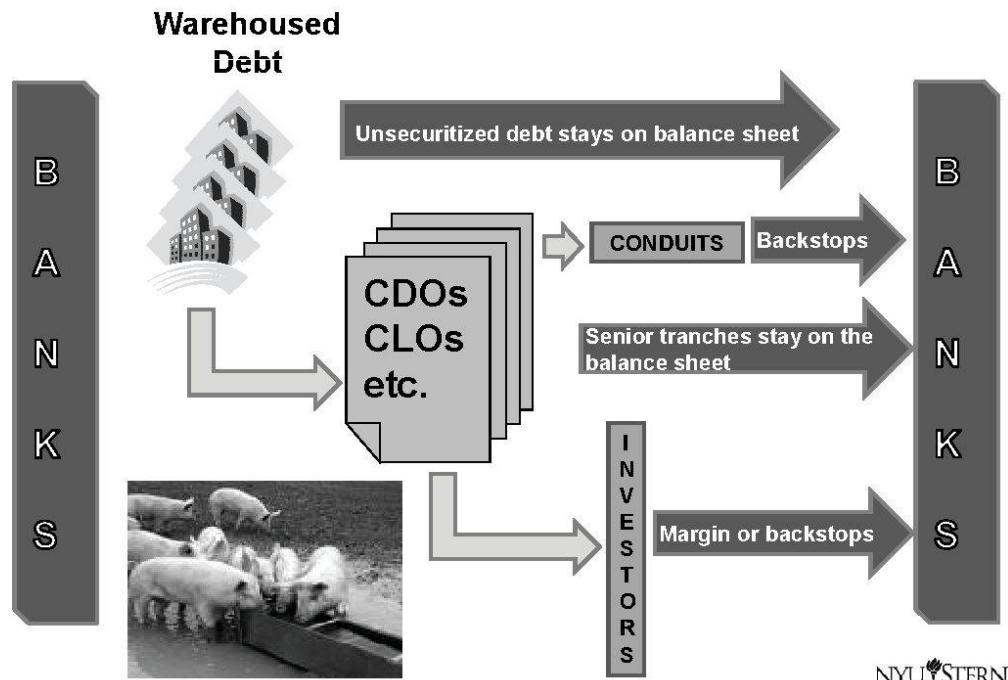
- 1. Sold under-capitalized guarantees to off-balance sheet vehicles (ABCP conduits, SIVs, etc.) – a \$700 billion bet**
- 2. Retained AAA tranches of sub-prime backed securities in order to “clip the carry” as profits – a \$900 billion bet (GSEs included)**
- 3. Purchased under-collateralized guarantees from AIG and monolines to reduce capital requirements**

And when they failed, it was hard to resolve them...



So what was the problem? The problem was that you had underpriced, undercapitalized guarantees – Prof. Hellwig talked about that yesterday – in terms of asset-backed commercial paper, SIVs and so on. They basically confused their role as financial intermediaries with their role as investors. They retained the top tranches of triple-A supersenior tranches on the balance sheet and they made a significant carry in terms of the cost of funds on what they kept on the balance sheet. Instead of being exposed to pipeline risk, which is the risk associated with origination and institution, they took what we call warehousing exposure. They actually invested in the same stuff.

Diagramming a Fatal Error: Bank Exposure Retention Supported by Cheap Funding



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So when the crisis ultimately came, this is the way it looks. A friend of mine put in the pigs in the trough – they got a little greedy. When you look at the data, you can see how much of this garbage – which turned out in the end to be garbage – ended up on the balance sheets of the intermediaries. It's really astounding. That should all have been passed off ultimately to investors. That's their role. Their role is not as an investor, their role is as an intermediary.

Banks Did Not Transfer Credit Risk

	Loans	HE- LOCS	Agency MBS	Non-Agency AAA	CDO Subord	Non- CDO Subord	Total	
Banks & Thrifts	2,020	869	852	383	90		4,212	39%
GSEs & FHLB	444		741	308			1,493	14%
Brokers/dealers			49	100	130	24	303	3%
Financial Guarantors		62			100		162	2%
Insurance Companies			856	125	65	24	1,070	10%
Overseas			689	413	45	24	1,172	11%
Other	461	185	1,175	307	46	49	2,268	21%
Total	2,925	1,116	4,362	1,636	476	121	10,680	
	27%	10%	41%	15%	4%	1%		



You can see here that non-agency triple-A, which is the triple-A tranches, including investment grade, were heavily lodged on the balance sheets of firms. And we also see a very low correlation between the importance of those firms in that process and the losses they actually took.

Did the Biggest Players Take the Biggest Hits?

	Writeoff ¹	Rank	GD ²	Rank	Total ³	Rank
Citigroup*	54.6	1	1702	1	7503	1
JP Morgan*	15.8	6	1316	3	7452	2
Goldman Sachs	4.2	12	856	10	5991	3
Morgan Stanley	14.4	7	1087	5	5395	4
Merrill Lynch	51.8	2	1069	6	4571	5
Deutsche Bank	7.7	10	1412	2	4463	6
UBS	43	3	907	9	4201	7
Credit Suisse	9.7	8	1056	7	4096	8
Lehman Brothers	8.2	9	1172	4	3935	9
Bank of America*	21.2	4	853	11	3074	10
BNP Paribas	0.9	13	487	13	2162	11
Barclays	6	11	1047	8	1735	12
HSBC*	19.5	5	641	12	1707	13
Standard correlation (n=50)			0.3777		0.3633	
Rank correlation (n=50)			0.2692		0.3077	

1. Writeoffs announced as of 16 September 2008.
2. Cumulative global debt origination ranking 2004-2007.
3. Cumulative global investment banking ranking 2004-2007.



So there are firms with very large market shares like Goldman Sachs that took virtually no losses. There were firms like Wachovia that had much smaller market shares which took huge losses. So that means that it's not just your market share that explains the performance. It's also what you actually did in the process: investing versus intermediating.

Mispriced or Unpriced Public Support

- ✓ **Underpriced deposit insurance.**
- ✓ **Presumptive public sector support (TITF):**
 - > **Too big to fail.**
 - > **To complex to fail.**
 - > **Too interconnected to fail.**
- ✓ **Covering:**
 - > **Uninsured debt holders.**
 - > **Employees and managers.**
 - > **In some cases equity holders.**
- ✓ **Results:**
 - > **Creates potentially severe competitive distortions.**
 - > **Undermines market discipline.**
 - > **Creates moral hazard and adverse selection.**
 - > **Weakens effective corporate governance.**
- ✓ **Bad bargain: “Privatization of returns and socialization of risk.”**

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So, clearly, we have a problem with respect to mispriced and unpriced public support, we have a problem with respect to the share price – this looks at the stock price for major players like UBS, Goldman Sachs and so forth. You see a fairly heavy correspondence as the crisis hits, but then very strong differentiation.

Small Sample of TBTF Players in the Crisis
 (10 years to 11 November 2009 against SPX)



Source: <http://bigcharts.marketwatch.com/advchart/frames/frames.asp?symb=&time=&freq=>

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Let's say, this is in a period of Friday of last week; for example, Goldman Sachs, which is the top line versus, let's say, Citi (C) after the crisis versus before the crisis. So there's a very strong idiosyncratic performance of individual firms.

What Happened? An Industry View

- ✓ **Poor risk management & lack of common sense.**
- ✓ **Massive overreliance on flawed models.**
- ✓ **Inadequate stress-testing of portfolios.**
- ✓ **Recurring conflicts of interest.**
- ✓ **Inadequate concerns about liquidity risk (members had already ignored previous IIF liquidity recommendations).**
- ✓ **Irrational compensation practices not linked to long-term profitability.**
- ✓ **Public perception of the industry: “Clever crooks and greedy fools.”**



“We must clean our houses first and not leave it to the regulators.”

International Institute of Finance, Presentation by Josef Ackermann, 19 April 2008.

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Here's the way Joe Ackerman describes it, and he's is a good Swiss guy and he is generally very thoughtful about things, he gave a talk at the International Institute of Finance in April of 2008, and he basically said what happened here? Number one, we screwed up, big time. We have poor risk management, and a lack of common sense; these are just the words he used: massive overreliance on flawed models – Martin Hellwig talked about that yesterday – inaccurate stress testing of portfolios, especially with respect to tail events, or low-probability, big-impact events and, especially, as he stressed, correlations that we hadn't seen before across asset classes. Thirdly, inadequate concerns about liquidity risk; when liquidity goes away, what do you mark to? There's no market. So how much is the stuff worth? And just before that, conflicts of interest, and then finally, irrational compensation practices not linked to long-term profitability.

He says the public perception of us is, clever crooks and greedy fools. Now we know that's not true. But that's what people in the U.S. – I don't know about Switzerland – people in the U.S. are angry. I've never seen them as stirred up about some issues like this one. And this is the ordinary person in the street. In fact, bankers in the U.S. have sunk down to the bottom of the social pecking order, just ahead of insurance salesmen and lawyers. Academics, of course, are at the very top.

Anyway, Joe Ackerman says, we have to clean up our houses, and don't leave it to the regulators. Well, too late. The train has left the station. It's too late for that because it's now a social problem. And as we always hear, socialization of risk, privatization of returns is politically impossible. So there's going to be a correction of some sort.



Here's my cartoon. There is the bankers talking to the regulator, there is the gorilla on the right, and the regulator says, he's in charge of market discipline. Nobody understands the market, so we're going to concentrate on the discipline. That's kind of nice; it comes out of the Financial Times, which normally doesn't have a sense of humor.

Market Discipline Versus Regulation: Is Banking Special?

Improvements in corporate governance practices are generic:

- **Improvements in governance practices**
 - > **Nominations process**
 - > **Separation of chairman & CEO**
 - > **Board size and staggered boards**
 - > **Independence of non-execs & SOX targets**
 - > **Financial expertise**

What's special about governance in systemic financial firms?

- **Special qualifications for a special industry?**
- **Complexity, information flow and the “melanoma problem”**
- **Role of governments as shareholders & stakeholders**
- **Slippage in market discipline and board accountability**
- **Governance role of blockholders less prevalent**
- **Management stakes.**

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So what do we do? First of all, can we rely on market discipline? We've got some problems with respect to governance. Some of those have been publicized; most, probably, have not. We have problems with respect to board members in terms of their expertise in simple issues such as financial accounting. It's amazing in the U.S. case; board members of financial institutions were really quasi-illiterate with respect to things they ought to know, even members of audit committees. It's just astounding.

Technical expertise very often slips by because the generalists at the top of the organization have inadequate information and have inadequate expertise on the technical side. Very often, asymmetry between risk and return. The revenue producers; they're the guys who are making \$1 ½ to \$2 million a year. The risk guys who are supposed to be paid for things that don't happen, as opposed to things that do happen, are getting paid \$130,000. It's an uneven contest between the return side and the risk side. Very often you see the risk side being steamrollered by the return side. So this is a question of governance. It's the firm itself that has to maintain that symmetry.

And then, of course, in financial firms you have a special issue with respect to the complexity of the business. They're not making steel sheet, they're operating on this enormously complex platform. We have information flows and sometimes a melanoma problem; you know, melanoma is a small skin cancer which doesn't look all that important, but it can kill you. This is a typical case with AIG, where the AIG FP (Financial Products) group was so small relative to AIG – you couldn't even see it on the balance sheet – the technical term is a pimple on an elephant's ass. And it ultimately destroyed the firm.

What kind of governance process is actually capable of capturing those problems and the confluence among problems like that? And we also have significant problems with respect to the regulators. Very often, you can argue that boards have outsourced governance to the regulators. They simply comply, and if they are in compliance, they reduce some of the effort that should have been applied within the due diligence and boardroom behavior process.

What Happens When an Unpriced Systemic Resource Gets Priced? PPP Versus VPP in Banking and Finance



Like pollution, systemic risk represents a negative externality, and needs to be priced.

Needed: Simple rules that harness market forces.

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The last thing has to do with regulation. I wrote an article with a friend of mine in the Neue Zürcher Zeitung, which I like a lot, obviously because I wrote it. It deals with pollution. If you have a steel company which looks like that. They make steel the best way they can. They try to produce the best quality steel, with the cheapest cost, the best technology, and they blast the garbage into the air. Why? Because they're using a resource that's not priced. Nobody charges for that resource so they go on producing steel in the best way without any pollution control. Meantime, you've got Mrs. Jones over there trying to hang her laundry, and her laundry gets soiled by the pollution. This is what we call VPP or the victim pays principle. Mrs. Jones is paying part of the cost of producing steel. That's really what it is. So Mrs. Jones says, I don't like this, and the steel company says, go away. And Mrs. Jones says, well, I'll get together with other Mrs. Joneses, and eventually we'll have millions of Mrs. Joneses, and we'll take our case into the political system and get a set of legislative and administrative actions in place. That then forces the steel company to reduce its pollution to ambient quality levels that society considers to be acceptable. That's called PPP or the polluter pays principle. Now how that happens is up to the steel company. The steel company

can change its processes, it can put in stack emissions filters – that's up to them. Let them do that, because they're the steel guys. Right? But when you do that and you cap this resource or you charge for it, what happens to the price of steel? It goes up. Therefore, people will use more plastics or more aluminum, and steel use declines. So the more pollutive stuff gets replaced by the less pollutive stuff. What happens to the return on capital in the steel industry? It goes down. So less capital is applied to the steel industry as opposed to other activities. The polluter pays principle is a technique that we've used in environmental policy for decades. It's very simple. It just simply says, you internalize the external costs and then you let the industry itself decide how to adjust.

Focus of Regulatory Reforms – Markets & Regulators

- **Consumer protection - who rules?**
- **Exposure retention on origination.**
- **Securities design.**
- **Securitization exposure retention (e.g., by lottery)**
- **OBS structures, hedge funds and shadow banking**
- **The ratings agencies.**
- **Investor constraints, suitability and due diligence – e.g. QIBs.**
- **Transactions platforms**
 - > **Exchanges**
 - > **Central clearing & settlement (notably CDS & repos)**
 - > **OTC**
- **Accounting standards**
- **The regulatory architecture**
 - > **Systemic risk regulator with resolution authority**
 - > **Prompt corrective action, nationalization, forced sale or liquidation.**
 - > **Functional regulation**
 - > **Global agreement & coordination**

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What's the relevance to banking? If you consider systemic risk, it's a form of pollution. Banks do what they do, as we've seen. They do things that are logical, that are sensible for them, but they are not charged for the systemic risk they produce that ultimately has to be paid for by the general public. So how do we deal with that? If you apply the polluter pays principle, you put a charge, for example additional capital or some other technique, on large, complex financial institutions. First of all, you put a basic capital charge on, as you do in all banks, then you put a capital surcharge on institutions that are large, complex and systemic. And then you might put another layer of capital on activities that are considered to be casinos inside public utilities. You put those charges on and then let the bankers decide what to do.

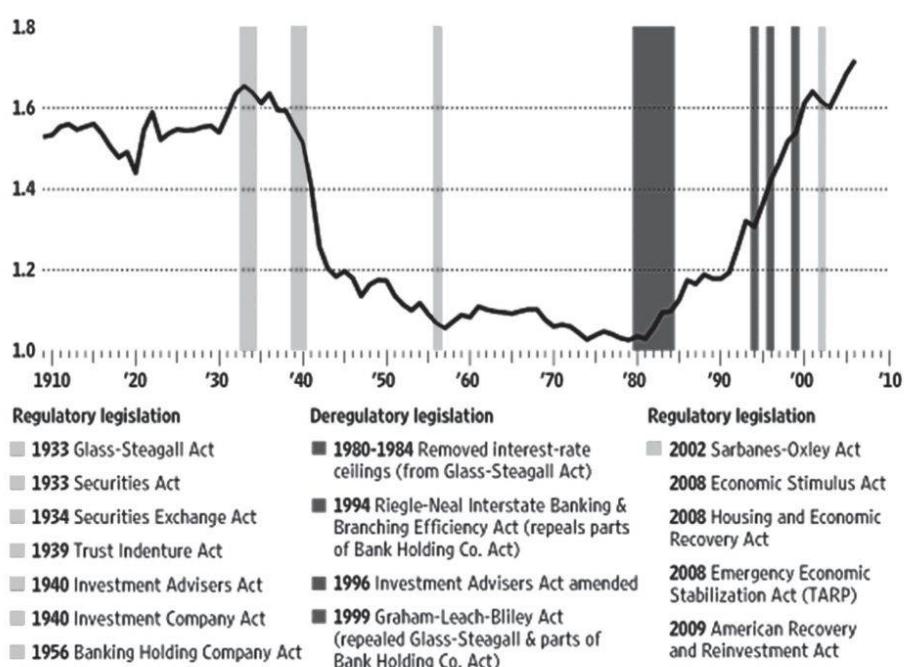
One option would be to get out of that business. Spin off the investment bank to shareholders, take the proceeds and either pay them back to your own shareholders or invest them in private banking or retail banking, or whatever. There are really only two options: one is to pay the shareholders, the other one is to reinvest in other businesses. And in the process, that bank may become unsystemic, and the new investment bank may also be unsystemic.

So we take a large, complex firm which is systemic, and you let management basically respond to the new charges by effectively developing a strategy which reduces the population of systemic firms in the system. That's one way to do it, and we have lots and lots of regulatory reforms that are aimed at that. Probably there are 20 or 30 of them.

We also have huge debates about who should be the regulator. In the U.S. this is an ongoing thing. Should the Fed, the central bank, also be the systemic risk regulator? In some sense it's in the best position to do that because it is the lender of last resort. It's also the one that has a significant role in creating conditions under which firms can get into difficulty. On the other hand, we value an independent central bank – maybe this is true in Switzerland too – and the more you get involved in micromanaging and in structures of financial institutions, the more politicized you get and the more you lose your independence. And in the U.S. the big concern is that the Fed, in our case, has really pushed the envelope in deciding who lives and who dies and who merges with whom, that it's too late to unpoliticize yourself, and that may have a long-term consequence on monetary policy in the U.S.

Regulation, Innovation and Compensation in Financial Firms

(ratio of financial-sector wages to nonfarm private sector wages, 1910-2006)



Source: Ariell Reshef of the University of Virginia and Thomas Philippon of New York University

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There are lots of alternatives in terms of having alternative regulatory structures, and then regulation by function for firms which are functionally focused. So the last thing would be –

maybe I'll stop there – incentives and compensation. I want to talk about that for a minute because people are going to ask me that question. In the United States the only thing people are interested in is compensation levels in financial firms. So the question is, how do you design a system inside firms which is in fact incentive-compatible and which contributes to stabilizing, as opposed to destabilizing, financial firms. If you look over time – we have a colleague of ours who has been working on this and he has looked at financial-sector wages, which include salaries, bonuses and so forth; all forms of compensation, as opposed to total private-sector wages in the U.S. The light grey vertical bars are recessions and the black vertical bars are periods of rapid economic expansion. What you can see here is, around about 1980 the share of the total financial sector just rose dramatically consistently through that period from 1980 to now. By his calculation, using a historical perspective, bankers are about 40% overpaid as a profession. So those of you who are bankers should give some of that money back.

Compensation Optics



The Compensation Committee



The Compensation Consultant



"What's the worst that could happen? We make \$200 million and then we get fired." - Citigroup trader on learning of the housing correction in 2007.*

* Wall Street Journal, 3 November 2009.

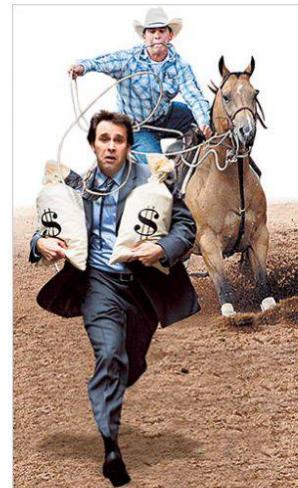
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Why is that? Why is it so exciting? Well, you've got all the myths. Here you've got the compensation committee of the board on the left and the compensation consultants on the right, who in popular mythology – these are the optics of the problem. Then you get quotes; this is the one I got the other day: "What's the worst thing that could happen? We make \$200 million and then we get fired". That's not so bad. You make \$200 million and then you get fired. This is a trader in 2007 who began to learn about the correction that was happening in the subprime sector, and he says, hey – this, by the way, is not for the whole group. \$200 million a year, which, by the way is not a detail, but it's not impossible. We have one guy with \$100 million who became a cause célèbre in the current environment.

Compensation Reforms

How to deal with compensation and “fake α”?

- **Disciplined internal allocation and pricing of capital and risk.**
- **Ban on “guaranteed bonuses” and severance packages.**
- **Compensation components shifted to cash + company stock with multi-year lockups tied to firm ROE and unit performance.**
- **Incorporation of claw-backs (malus) in compensation arrangements.**



Questions:

- **Can compensation reforms withstand the pressure of competition?**
- **Will the industry adhere to any code of best practice?**
- **Will reforms drive away talent and reduce performance?**

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So you've got to make some reforms. What do you do? How do you deal with fake alpha, or outperformance today which turns into underperformance tomorrow? And this is again where the Swiss lead the way. In some ways, UBS and Credit Suisse have that wonderful thing for a while where they paid the bonus in garbage. Lovely. So you actually get paid part of your bonus in the stuff that you're cooking up to sell. There's a little bit of a footnote in the system, but, nevertheless, the whole idea of bonus lock-ups, longer-term contracting, maluses and clawbacks all make sense if you can come up with a system which is incentive-compatible and gets people to behave in such a way that is consistent with the institution's own stability, and then the process makes a contribution to the stability of the system.

So there are a lot of questions here. One is, can you really withstand the pressure of competition? You're already seeing a lot of cheating. Even in the case of firms which have adopted more sensible systems in the U.S., you're getting people walking out the door because the competition is not abiding by the same rules. You sometimes lose whole teams of 7 or 8 people, and you're out of that business for a couple of months before you can rebuild the team. So the interesting question is whether this set of, sort, of positive intentions will in the end fall victim to the dynamics of competition for human capital among the financial firms. Can you come up with a code of best practice? I still have enough faith in human nature to think you might be able to make some progress, but the real world tells me that it's going to last only over lunch, and after lunch they're going to go back to business as usual.

And secondly, what is human capital? Why is it that individuals are worth \$30 or \$40 million a year when you have a human talent market out there which ought to be somehow functioning and there should be an increase in the talent for the industry. On the other hand,

you pay professional athletes the same way. There are athletes who command those kinds of compensation, and the reason why is because they're better than anybody else. So, in a sense, a lot of the compensation issues which, again, are related to governance questions, and stability questions, and which make this whole story substantially more complex than it otherwise might be.

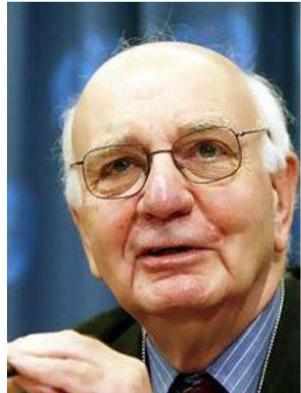
The Great Debate – Geithner vs. Volcker



Timothy Geithner
(Foto Reuters)

Tier-1 institutions need differential regulation on capital, leverage, principal trading & investing and termination. A regulatory architecture can be devised that achieves systemic stability at acceptable cost without constraining financial firms' business strategies or excessively impairing financial efficiency, innovation or competitiveness.

- Timothy Geithner, August 2009



The political realities of regulatory capture, regulatory avoidance, and regulatory arbitrage by major financial firms suggests the need for line-of-business constraints for financial intermediaries. Firms with strong public utility attributes should not be allowed to run in-house casinos and gamble in them with public money.

- Paul A. Volcker, October 2009

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If you are really a curmudgeon like myself, the big debate now is Volcker again, now debating with Tim Geithner, our Secretary of the Treasury, and Geithner says, well these types of systemic institution we've been talking about need to have differential regulation; for example, higher capital, lower leverage and so forth. And we can devise a regulatory architecture which achieves the higher level of stability we're looking for at relatively acceptable cost. We know it's going to make the system less efficient. It's also going to make the system less creative, but that's the price we have to pay to have a higher degree of robustness. And we can do that by engineering a regulatory system which is efficient in the sense of reducing the cost of regulation. Now Volcker, who has been around a long time, says, it's not going to work. And the reason it's not going to work is because those who are regulated will get busy about four days after the regulation takes effect in order to try to undermine the letter and the spirit of the regulation. So Volcker has become a political realist, and he says, in my long history in this business, I know that we've got lots and lots of smart people who will set about going to work and coming up with different structures, different ways of, effectively, end-running the stability attempts that the government applies. So Volcker has come down to the story that you have to carve out, of

these large utilities, certain businesses that don't belong there, don't belong in corpus. They include large-scale proprietary trading, running in-house hedge funds, and so forth, and that these should be carved off.

Why Volcker May be Right - Regulatory Capture in the US

- **1995 Clinton - HUD Secretary Henry Cisneros directs Fannie & Freddie to increase financing of low and moderate income home-owners to 42% of portfolios.**
- **1997 Clinton - HUD Secretary Andrew Cuomo directs Fannie & Freddie to increase target to 50% of portfolios & buy mortgages of very low income homeowners.**
- **1998 Clinton – Blockage of CFTC control of derivatives trading.**
- **1999 Clinton - repeal of Glass Steagall.**
- **2004 Bush - SEC doubles maximum gross leverage ratios for investment banks with little public debate.**
- **Financial industry political activity 1998-2008:**
 - > Campaign contributions \$1.7 billion
 - > Payments to lobbyists \$3.4 billion
 - > 3,000 financial sector lobbyists in 2009, 5 for each Congressperson
 - > Goldman Sachs – “Our seventh line of business.” – Lloyd Blankfein



Obviously, we need risk-taking, and we need the speculative activity in the markets that they provide, but they should not be provided inside of public utilities. So Volcker has swung around to this interventionist position, and guys like me, I'd like to think that Geithner is right. But I'm getting older too, and the older I get, the more I feel like my own grandfather. When my grandfather finally died at 97 and I was 16 or 17 – I'd come up with a great idea and my grandfather would say, it's not going to work. Let me tell you 19 reasons why it's not going to work. He'd become a sort of curmudgeon; he'd seen too much. And that's a danger too. I feel myself drifting in that direction. Right now, among some other academics, the Governor of the Bank of England and Nelly Cruz in Brussels, have sort of formed a coalition around the Volcker position. Not because it's the best choice, it's a second best choice. But it's almost an admission of defeat that we're going to have to go to some kind of a carve-out system to achieve stability. Others disagree; the banks clearly disagree, and what we've got now is a huge battle to see what direction we should take in order to get a system which is more robust, while at the same time minimizing the associated efficiency losses.

Thank you very much.